MOODY'S
INVESTORS SERVICE

CROSS-SECTOR METHODOLOGY

Moody's Approach to Assessing Counterparty Risks in Structured Finance

This rating methodology replaces *Moody's Approach to Assessing Counterparty Risks in Structured Finance* published in May 2021. We clarified in Appendix 2 the application of notching uplift to determine the probability of becoming unhedged due to the application of synthetic Libor. We amended Appendix 1 to describe alternative measures to determine the credit quality of a servicer or financial obligor when assessing set-off risk. Also, we removed an appendix that included the link to the swap linkage tool, and we made limited editorial changes to enhance readability.

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1. Executive Summary

This methodology describes our global approach to assessing counterparty risk in structured finance transactions and, where applicable, covered bonds.[1] Counterparty risk refers to the risk posed to investors by a potential default of any of a variety of transaction parties, including the originator, servicer, swap counterparty, and account bank,[2] as well as by a potential default of instruments in which transaction cash is invested.

THIS METHODOLOGY WAS UPDATED ON JANUARY 23, 2023. WE HAVE MOVED TEXT THAT WAS PREVIOUSLY IN A FOOTNOTE INTO EXHIBIT 11 AND UPDATED THE ANALYST CONTACTS.

[1] Some covered bond programs contain counterparty risks analogous to those found in structured finance transactions. Where these risks are not addressed by our covered bond methodology, we will typically apply this methodology with such adjustments as may be needed to reflect the differences between covered bonds and structured finance transactions. In general, we will not apply the approach to assessing operational risk or the approach on account banks and investments to covered bonds. We will apply our approaches to assessing commingling and set-off risk in some cases and we will apply the swap approach subject to the adjustments specified in our covered bond methodology. For details on our approach to rating covered bonds, see the Moody's Related Publications section at the end of this report.

[2] In this approach, "bank" includes any financial institution authorized and supervised by banking regulators that holds a transaction's assets for the benefit of noteholders. Absent qualifications, "bank" includes both depository institutions and trust departments of authorized corporate trust account providers.

In this methodology, we focus on five broad types of counterparty risk:

1) **Risk of default by a swap counterparty:** Many structured finance transactions and covered bonds are at least partially hedged against the risk of currency or interest rate movements through a swap agreement. Typically, the value of the swap in mitigating the risk to a transaction is dependent on the continuing ability of the swap counterparty to make payments during the life of the security. Therefore, the risk to a transaction is, to some extent, dependent on the likelihood of default of the swap counterparty (see section 3).

2) **Operational risk:** Operational risk in structured finance arises from several sources, for example: (a) potential defaults by providers of services to a transaction; (b) potential low-quality services provided by transaction parties; or (c) natural and other disasters.

   In each case, factors other than the inherent credit quality of the underlying assets could have a significant impact on the operations of a transaction and hence on the cash flows available to investors.

   In this methodology, we focus on the first type of operational risk, which we denote as "financial disruption risk." In particular, we explain our approach to: (1) assessing the durability of service providers based on credit quality and other factors; (2) assessing the transferability of servicing or other duties; (3) determining rating caps (when applicable), including the consideration of mitigants (see section 4). Please note that other sources of operational risk are analyzed, where relevant, at a transaction, asset class or market-level. Some sources are described in other credit rating methodologies or other permissible service methodologies.[3]

3) **Commingling risk:** In many structured finance transactions and covered bonds, the servicer receives payments directly from obligors and holds the cash for some period of time. This poses two risks to structured investors if the servicer becomes bankrupt or insolvent and the transaction's cash is not clearly and legally separated from the servicer's other cash funds. The first risk – in some jurisdictions – is that payments to investors can be delayed while competing creditor claims are sorted out. The second risk is that the claims cannot be clearly resolved and investors are required to share the cash with other creditors. In this methodology, we describe how we analyze commingling risk, as well as the factors that can mitigate that risk (see section 5).

4) **Risk posed by defaults of account banks holding transaction cash or by investments in which transaction cash is invested:** In many structured finance transactions, cash that is paid by obligors is held temporarily in a variety of types of bank accounts prior to being paid to investors; in some cases, that cash, alternatively, may be invested in some market instrument. Consequently, investors in structured finance securities face the risk that the account bank or investment may default on their promise to pay the funds, causing a loss to investors (see section 6).

5) **Deposit set-off risk:**[4] In some structured finance transactions,[5] particularly those securitizing bank loans, the loan obligors may also have deposit relationships with the originating banks. In some jurisdictions, that poses the possibility that in the event of a bankruptcy or insolvency of the bank, those deposits may be used to offset at least some of the obligor's loan obligations. In this methodology, we describe how we analyze the risk that this "set-off" could cause a reduction in the net payments of the borrowers and a potential loss to investors in the structured finance transaction, as well as potential mitigants to the risk (see section 7.1).

[3] For a list of our credit rating methodologies and other permissible service methodologies, please see the Moody's Related Publications section at the end of this report for more details.

[4] Section 7 on deposit set-off risk also describes some other types of set-off related risks.

[5] We assess deposit set-off risk also as part of our covered bond analysis, where applicable.

In section 2 of this methodology, we describe how we integrate our analysis of counterparty risk into our ratings of structured finance securities. In sections 3 to 7, we describe our approaches to evaluating each of the broad types of risk as well as legal and structural features that mitigate those risks. In section 8, we set forth our approach to monitoring the various counterparty risks.

Our global approach to counterparty risks recognizes regional differences in markets, transaction structures and the roles that are played by transaction parties. However, given its broad scope, the methodology is not intended to be an exhaustive discussion of how we would analyze each factor in every transaction. Instead, it is intended to provide a general understanding of the risks involved and how we would approach the analysis of these risks. In many cases, we apply judgments to qualitative factors as part of our overall analysis in assigning or monitoring ratings. We also note that transaction parties may adopt unexpected interpretations of transaction documents or take other actions based on their economic interests, which decisions may impact the performance of transactions. Our ratings groups will monitor such developments and address them in their rating analysis.

2. Integrating Counterparty Risk Analysis into Structured Finance Ratings

2.1. Typical Sequence of Rating Process

We integrate the different types of counterparty risk analyses into our ratings at different stages in the rating process. We start our analysis with a rating methodology for the particular asset being securitized. In that methodology, in addition to considering factors such as historical portfolio performance, asset characteristics, cash flow allocation mechanisms, and credit enhancement, we also typically incorporate two types of counterparty risk, set-off risk and commingling risk, in evaluating the likely cash flows to investors.

Next, for those transactions that have swaps, we typically evaluate the swap counterparty risk. We then apply local currency country risk ceiling,[6] where applicable, to determine the maximum achievable credit rating for structured finance transactions or covered bonds. The rating of one or more transaction parties may also be subject to such a maximum achievable rating consideration and therefore, where applicable, we address all other counterparty related rating caps typically after the local currency country risk ceiling.

We add our operational risk analysis at the next stage of the process. That analysis results in another set of rating caps, which we apply to the rating results from the previous stage.

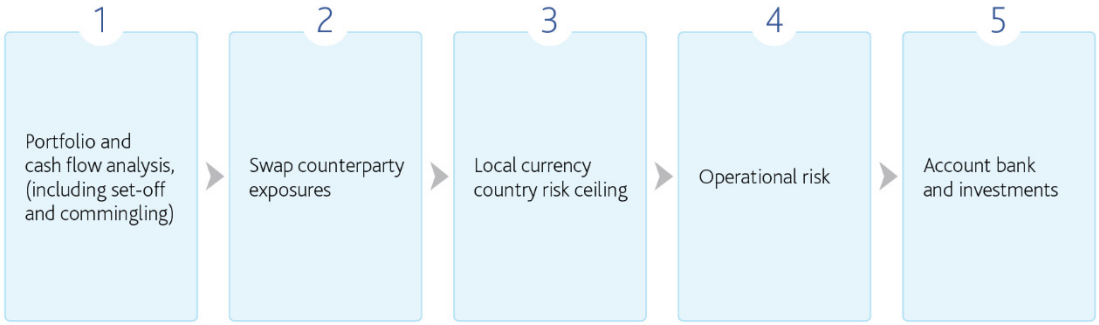
Finally, we incorporate our analysis of the risk of default by account banks or of temporary investments. That analysis results in a set of rating caps, which is applied to the results from the prior step.

The sequence of steps is summarized schematically in Exhibit 1.[7] It is indicative in nature; the specific sequence applied to a particular transaction may vary based on the characteristics of the asset or transaction and may include analyses of additional specific risks.

[6] See our approach to local currency country risk ceiling for bonds and other local currency obligations in the Moody's Related Publications section at the end of this report for details.

[7] Exhibit 1 sets forth the schematic sequence for structured finance transactions. For the sequence of analytical steps for covered bonds, see our approach to rating covered bonds in the Moody's Related Publications section at the end of this report for details.

EXHIBIT 1
Schematic Sequence of Approaches in Structured Finance Transactions



Note: Each step when applicable.

Source: Moody's Investors Service

2.2. References to Ratings and Rating Triggers

The rating process described in this methodology involves the use of inputs indicating the credit quality of various transaction parties. For ease of reference in this report, we generically describe these inputs as "ratings." However, those inputs include a range of different types of ratings and also include other types of measures of credit quality such as Moody's Counterparty Risk Assessment (CR assessment).[8]

It is important that references to ratings throughout this methodology be read in context with Appendix 1. We use different types of ratings for different transaction counterparties and triggers. For example, we refer to the CR assessment when we evaluate the durability of a servicer, while we use the bank deposit rating when we determine the default risk of a bank originator in our deposit set-off approach. As different rating types for the same counterparty may be set at different rating levels, an accurate analysis can only be achieved by using the correct rating type, as set forth in Appendix 1.

3. Swap Counterparty Exposures

3.1. Overview

We analyze the rating impact of exposures to swap counterparties in structured finance transactions in four steps, as shown schematically in Exhibit 2 and summarized in the following sections. We provide more details of our analysis in Appendices 2 to 5.

The approach described in this report applies to certain interest rate swaps, caps, basis swaps, and cross currency swaps in cash flow transactions.[9] Additional considerations may apply for covered bonds transactions, repackaged securities, counterparty instrument ratings and borrower level swaps and caps in commercial real estate transactions (CMBS).[10]

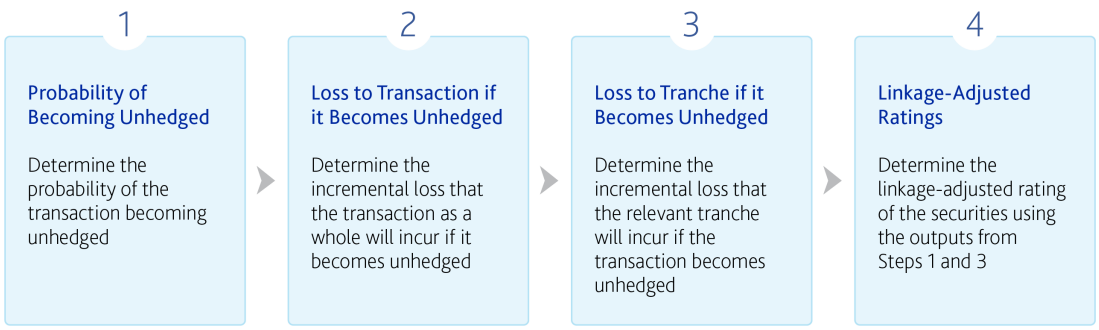
[8] See *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report for details.

[9] We typically assess exposures to counterparties under inflation swaps agreements in accordance with the principles described in this methodology, with adjustments as necessary to reflect the nature of the risk.

[10] See the Moody's Related Publications section at the end of this report for details on our approaches to rating these asset classes.

EXHIBIT 2

Four Analytical Steps to Determine Exposures to Swap Counterparties



Source: Moody's Investors Service

3.2. Step 1: Probability of Becoming Unhedged

A transaction will become unhedged if the counterparty defaults without first transferring the swap or obtaining a guarantee, and the issuer does not enter into a replacement swap with another counterparty.

It follows that the probability of becoming unhedged primarily depends on the credit quality of the counterparty and the strength of the applicable transfer and collateral posting provisions.

To calculate the probability of becoming unhedged, we start with the rating of the counterparty[11] (or guarantor)[12] and typically adjust it by applying a notching uplift in consideration of various factors, such as the presence of transfer and collateral triggers. We obtain the probability of becoming unhedged from the probability of default that is implicit in the adjusted rating.

Transfer triggers in the single A range (or higher)[13] contribute two notches to the notching uplift, and transfer triggers set at Baa1 contribute one notch. We give no value to transfer triggers set below Baa1.

The value of collateral triggers depends on both the trigger level and the amount of collateral the counterparty will post.

In this report (1) "original collateral provisions" and "enhanced collateral provisions" mean the corresponding collateral formulas in Appendix 3; and (2) "alternative collateral provisions" means any other formulas giving a collateral amount no less than the mark-to-market (MTM) of the swap, in each case combined with the valuation percentages in Appendix 3. We generally give no value to any other collateral provisions.

Collateral triggers set at A3 or above contribute one, two or three notches to the notching uplift when combined with alternative, original or enhanced collateral provisions, respectively.[14] A collateral trigger set

[11] See section 2.2 and Appendix 1 for details.

[12] See note 13 of the Step 1 Detailed Notes in Appendix 2.

[13] For the purpose of assessing the value of swap triggers (1) we usually focus solely on the long-term rating threshold; and (2) we view the jump to default risk for an A3-rated counterparty (or one that has just been downgraded below A3) as sufficiently low that, in general, we do not distinguish between triggers set at A3 and those set at a higher level.

[14] We assume a trigger has no value if the required collateral amount may be less than the mark-to-market value.

at Baa1 or Baa2 contributes one notch less than if it were set at A3, provided that a Baa2 collateral trigger cannot contribute more than one notch. We generally give no value to collateral triggers set below Baa2.[15]

Once a collateral posting period commences,[16] we determine the notching uplift as if the collateral trigger had been set at A3 or above, regardless of the actual trigger level.

If we are satisfied there is a good prospect of a swap being out-the-money (OTM) for the issuer at the time of becoming unhedged, we may increase the overall notching uplift by one notch on the basis that an issuer will not need any collateral to replace a defaulting OTM swap. Where the counterparty (or guarantor)[17] is rated A3 or above, we generally apply this uplift even if the swap is presently in-the-money (ITM) for the issuer.

The Step 1 Table illustrates the probability of becoming unhedged for the most common combinations of counterparty ratings and rating triggers. For example, the table indicates that, for a swap with a counterparty rated A3, a transfer trigger of Baa1, and a collateralization trigger of A3, the adjusted rating for the counterparty would be raised four notches, to Aa2. In contrast, the table indicates that the same counterparty (rated A3) would get a more moderate uplift of only one rating notch, to A2, if the transfer trigger was set below Baa1 and the collateralization trigger was set below Baa2. For any particular swap, the probability of becoming unhedged may also be affected by other factors and may therefore be different to that indicated by the Step 1 Table (see Appendix 2).

Step 1 Table: Probability of Becoming Unhedged When Original Collateral Provisions Apply

		Counterparty Rating						
Transfer Trigger	Collateral Trigger	Aa3	A1	A2	A3	Baa1	Baa2	Baa3
A3	A3	Aaa	Aaa	Aaa	Aa1	-	-	-
Baa1	A3	Aaa	Aaa	Aa1	Aa2	A1	-	-
<Baa1	A3	Aaa	Aa1	Aa2	Aa3	A2	A3	Baa1
<Baa1	Baa1	Aa1	Aa2	Aa3	A1	A3	A3	Baa1
<Baa1	Baa2	Aa1	Aa2	Aa3	A1	A3	Baa1	Baa1
<Baa1	<Baa2	Aa2	Aa3	A1	A2	Baa1	Baa2	Baa3

Source: Moody's Investors Service

If the probability of becoming unhedged is Aaa, swap linkage generally has no present rating impact and Steps 2-4 do not apply.[18]

3.3. Step 2: Loss to Transaction If It Becomes Unhedged

The amount of loss that a transaction will incur as a result of becoming unhedged (the "transaction loss") depends on the type, tenor and size of the exposure. For example, the impact of losing a long-dated cross currency swap that is hedging 100% of a transaction is likely to be much greater than that of losing a short-dated basis swap hedging 10% of the same transaction.

[15] The threshold for giving value to transfer triggers is higher than for collateral triggers because, in general, it takes longer to transfer a swap than to post collateral.

[16] A posting period commences when (1) the grace period in the CSA has expired, and (2) the counterparty has posted collateral or there are no remaining operational hurdles (such as need to open a collateral account or execute a CSA) to the counterparty posting collateral as soon as it is required to.

[17] Unless automatic termination applies - see note 12 of the Step 1 Detailed Notes.

[18] By way of exception, if the loss resulting from becoming unhedged will exceed 50% of the relevant tranche, swap linkage may have a rating impact on Aaa notes even if the probability of becoming unhedged is Aaa. We assess this on a case-by-case basis considering all relevant factors, including the strength of the Aaa rating before accounting for linkage.

The Step 2 Table gives the transaction loss amounts that we generally assume for benchmark swaps of various types and tenors. It positions each of these swaps in one of nine loss categories ranging from 5% to 70% of the asset pool.

We have calculated the transaction loss for each benchmark swap by simulating the future evolution of the relevant market variables (e.g., interest rates or currency values) in a large number of different scenarios using stochastic processes. For each scenario, we calculated the projected swap cash flows. We then determined the transaction loss by reference to the scenario representing a very high level of confidence.

For the purpose of the Step 2 Table, "tenor" generally means the weighted average life (WAL) of all notes that (1) rank equal to or higher than the tranche under consideration; and (2) give rise to the exposure that is being hedged, taking account of prepayments and applicable amortization triggers.[19] If the tenor exceeds 20 years, the Step 2 Table does not apply and we assess the transaction loss on a case-by-case basis.

The Step 2 Table assumes that each benchmark swap relates to 100% of the asset pool. If a swap hedges market rate exposure in connection with a smaller portion of the asset pool, we generally reduce the transaction loss linearly.

Step 2 Table: Loss to Transaction If It Becomes Unhedged

Type of Swap	Tenor (years)	Cat 1 (5%)	Cat 2 (10%)	Cat 3 (15%)	Cat 4 (20%)	Cat 5 (30%)	Cat 6 (40%)	Cat 7 (50%)	Cat 8 (60%)	Cat 9 (70%)
Basis [a)]	≤10	X								
Basis [a)]	>10 and ≤20		X							
Fixed Floating	≤1	X								
Fixed Floating	>1 and ≤3		X							
Fixed Floating	>3 and ≤5			X						
Fixed Floating	>5 and ≤7				X					
Fixed Floating	>7 and ≤11					X				
Fixed Floating	>11 and ≤15						X			
Fixed Floating	>15 and ≤20							X		
Cross Currency	≤1					X				
Cross Currency	>1 and ≤2						X			
Cross Currency	>2 and ≤3							X		
Cross Currency	>3 and ≤10								X	
Cross Currency	>10 and ≤20									X

a) The 5%-10% loss assumption for basis swaps was calculated based on an approximation of 50 basis points per year.

Source: Moody's Investors Service

3.4. Step 3: Loss to Tranche If Transaction Becomes Unhedged

The Step 3 Table gives the tranche-specific incremental loss (the "tranche loss") for various combinations of transaction loss category (from Step 2) and credit enhancement.

We have calibrated the Step 3 Table principally by modeling the effect of becoming unhedged on numerous sample tranches. For each sample tranche, we modeled various combinations of transaction loss and credit enhancement to determine the corresponding incremental tranche losses resulting from swap linkage. We then mapped the model outputs to a thirteen-point non-linear scale, ranging from TL1 to TL13.

[19] Subject to certain exceptions - see note 2 of the Step 2 Detailed Notes in Appendix 2.

Credit enhancement is typically available to protect noteholders from the effects of shortfalls in asset cash flows, including any shortfall resulting from a loss of hedging. Although it is not exclusively available to offset losses resulting from becoming unhedged, the more credit enhancement that benefits a tranche, the lower the anticipated tranche loss. For the purpose of the Step 3 Table, "available credit enhancement" means the amount of overcollateralization, subordination and reserves benefitting the tranche.[20]

Step 3 Table: Loss to Tranche If Transaction Becomes Unhedged

	Transaction Loss								
Available Credit Enhancement	Cat 1 (5%)	Cat 2 (10%)	Cat 3 (15%)	Cat 4 (20%)	Cat 5 (30%)	Cat 6 (40%)	Cat 7 (50%)	Cat 8 (60%)	Cat 9 (70%)
>1% and ≤5%	TL6	TL7	TL8	TL8	TL10	TL12	TL13	TL13	TL13
>5% and ≤10%	TL4	TL5	TL6	TL7	TL9	TL11	TL12	TL13	TL13
>10% and ≤15%	TL2	TL3	TL4	TL6	TL8	TL11	TL12	TL13	TL13
>15% and ≤20%	TL1	TL3	TL4	TL5	TL7	TL11	TL12	TL12	TL13
>20% and ≤30%	TL1	TL3	TL4	TL5	TL7	TL8	TL10	TL12	TL13
>30% and ≤40%	TL1	TL3	TL4	TL5	TL6	TL7	TL9	TL11	TL12

Source: Moody's Investors Service

3.5. Step 4: Linkage-Adjusted Rating

We calculate the incremental expected loss to a tranche resulting from swap linkage by multiplying (1) the probability of becoming unhedged (from Step 1);[21] by (2) the tranche loss (from Step 3). We add this incremental expected loss to the Idealized Expected Loss[22] associated with the rating the tranche would otherwise have (that is, without accounting for swap linkage[23]) to derive a composite expected loss incorporating the effect of swap linkage. We then translate the composite expected loss to a rating (linkage-adjusted rating) using our Idealized Expected Loss rates.[24]

According to our Idealized Expected Loss rates, a change in expected loss has a greater impact on the higher end of the rating scale as opposed to ratings on its lower end; therefore, an incremental loss attributable to becoming unhedged has the most significant rating impact on the highest rated notes.

By way of illustration, the Step 4 Table gives linkage-adjusted ratings for various combinations of (1) the rating of the notes without accounting for swap linkage; and (2) tranche loss (from Step 3), in each case where the probability of becoming unhedged is Aa3.[25] Where no linkage-adjusted rating is shown, the incremental expected loss associated with swap linkage generally has no rating impact.

[20] Subject to certain deductions - see the Step 3 Detailed Notes in Appendix 2.

[21] For this purpose, we convert the rating from Step 1 to a probability using our idealized default rates with a horizon equal to the WAL of the tranche.

[22] Please see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report for more details.

[23] The term "without accounting for swap linkage" means after accounting for all other factors (including any applicable loss benchmarks for the underlying asset class) that may impact the expected loss or rating of the relevant tranche, but before the application of any rating caps contemplated by our rating methodologies.

[24] See *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report for details.

[25] In some instances, the note rating may differ from the linkage-adjusted rating shown in the Step 4 Table. For example, if there is a material difference between the expected loss of the tranche and the Idealized Expected Loss associated with its rating (in each case, determined without accounting for swap linkage), we may adjust the composite expected loss to account for this difference. Moreover, the Step 4 Table is calibrated for large tranches with a weighted-average life (WAL) of 3 years; if the actual tranche size or WAL is different, the linkage-adjusted rating may also be different. See Appendix 2 for details.

Step 4 Table: Linkage-Adjusted Ratings When Probability of Becoming Unhedged is Aa3

	Tranche Loss												
Note rating without linkage	TL1	TL2	TL3	TL4	TL5	TL6	TL7	TL8	TL9	TL10	TL11	TL12	TL13
Aaa	-	-	-	-	-	Aaa	Aa1	Aa1	Aa1	Aa2	Aa2	Aa2	Aa3
Aa1	-	-	-	-	-	-	Aa1	Aa2	Aa2	Aa2	Aa2	Aa3	Aa3
Aa2	-	-	-	-	-	-	-	Aa2	Aa2	Aa3	Aa3	Aa3	Aa3
Aa3	-	-	-	-	-	-	-	-	Aa3	Aa3	Aa3	A1	A1
A1	-	-	-	-	-	-	-	-	-	-	A1	A1	A2
A2	-	-	-	-	-	-	-	-	-	-	-	A2	A2
A3	-	-	-	-	-	-	-	-	-	-	-	-	A3
Below A3	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: Moody's Investors Service

EXHIBIT 3

Illustration of How to Use Linkage Tables

Suppose an illustrative transaction with the following features:

Features	Parameter
Swap counterparty rating	A3
Collateral provisions	Original
Transfer trigger	Baa2
Collateral trigger	A3
Swap type	Fixed-floating
Swap size	100%
Swap tenor	10 years
Available credit enhancement for relevant tranche	7%
Note rating (without linkage)	Aa1
No special features resulting in adjustments to the outputs from the linkage tables[26]	
» The probability of becoming unhedged for this transaction is given by the Step 1 Table as Aa3, i.e., an uplift of three notches from the counterparty's rating.	
» Applying the Step 2 Table, the transaction loss falls under Category 5.	
» Given that the transaction loss falls under Category 5, the Step 3 Table gives a tranche loss of TL9.	
» With a probability of becoming unhedged of Aa3, the linkage-adjusted rating is given by Step 4 Table. This table indicates that, as a consequence of swap linkage, the rating of the tranche will be reduced by one notch to Aa2.	

Source: Moody's Investors Service

Detailed Notes on the use of the linkage tables and the circumstances in which we may make overriding adjustments are provided in Appendix 2.

3.6. Other Swap Related Risks

In addition to the risk of becoming unhedged following a counterparty default, we also consider any risks to investors presented by non-standard hedging arrangements. For example, we assess the risks associated with material non-payment obligations of an issuer under a swap, including (1) reduced liquidity, exposure to third parties and/or costs resulting from the performance of such obligations; (2) swap termination resulting from a failure to perform; and (3) reduced probability of swap replacement following a transfer

[26] See Appendix 2 for details.

trigger breach or counterparty default. We evaluate these risks on a case-by-case basis, applying the principles outlined in this approach as applicable.

4. Operational Risk

4.1. Overview

As the term is commonly used, "operational risk" can arise from various potential sources, including: (1) disruptions to cash flows caused by the financial distress of service providers to the transaction, preventing them from performing their duties as required; (2) disruptions to cash flows resulting from non-financial factors, such as natural disasters; and (3) the quality of service that each of the transaction parties provides. In this methodology, we focus on the first of those sources, which we term "financial disruption risk."[27]

In our analysis of financial disruption risk, we consider the roles of servicers, cash managers, calculation agents, trustees and similar parties[28] who are responsible for payment continuity in a transaction.[29] In the following sections, we outline the three schematic steps that we use in determining the rating cap, if any, that we would apply to reflect operational risk in our analysis:

1. Assess the likelihood of financial disruption: Our analysis assesses the likelihood that the service provider will be able to continue operations during the life of the transaction. We refer to this as the "durability" of the servicer. Our analysis is based on the credit quality of the transaction parties[30] and other factors.
2. Assess the transferability of transaction responsibilities to another party: Our evaluation of transferability is based on the depth of the secondary market for the particular service, which varies by asset type and region. The evaluation also considers the complexity of duties, track record of transfers, and the contractual fees allocated for the service in the transaction.
3. Consideration of mitigants and rating cap, when applicable: We combine our assessments of durability and transferability to determine the appropriate rating cap, when applicable, incorporating an assessment of the mitigants to possible financial disruption risk. More specifically, we assess the effectiveness of various transaction characteristics, such as back-up servicing or master servicing provisions and liquidity arrangements, to offset financial disruption.

The three steps are illustrated schematically in Exhibit 4:

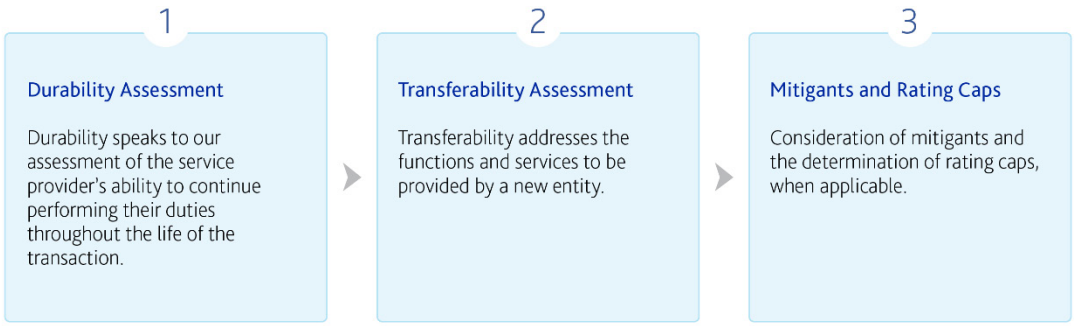
[27] Other sources of operational risk are analyzed, where relevant, at a transaction, asset class or market-level. Some sources are described in other credit rating methodologies or other permissible service methodologies. See the Moody's Related Publications section at the end of this report for details.

[28] See Appendix 5 for details. This methodology does not address transaction parties such as financial guarantors or property managers (for example, in single-family rental asset-backed securities).

[29] In our analysis of covered bond programs, we analyze financial disruption risk as part of our timely payment indicator (TPI) framework. Therefore, section 4 typically does not apply to covered bonds. We, however, may use analytical concepts described in section 4 to evaluate payment disruption risk for covered bonds that do not fall under the TPI framework. See our approach to rating covered bonds in the Moody's Related Publications section at the end of this report for details.

[30] Section 4 involves the use of inputs indicating the credit quality of certain entities. For ease of reference, in this section we generically describe these inputs as "ratings." However, the range of possible types of input is not limited to credit ratings; it also includes other measures such as our counterparty risk assessment. See section 2.2 and Appendix 1 for details.

EXHIBIT 4
Three Schematic Steps to Assess Financial Disruption Risk



Source: Moody's Investors Service

Since this methodology applies globally, incorporating a wide range of regional practices and transaction roles, it is necessarily general in some respects and is not intended to be an exhaustive discussion of all the factors that we consider in every transaction. In arriving at a final rating, rating committees will, where appropriate, consider additional qualitative and quantitative factors, as deemed relevant.

4.2. Step 1: Durability Assessment

4.2.1. Credit Quality

Our assessment of the durability of a transaction party begins with its credit quality. The better the credit quality of a transaction party, the lower the risk that it will experience financial distress that could disrupt its ability to perform its duties. We approximate credit quality by using the CR assessment in the case of banks; for non-banks, we use the senior unsecured debt rating, corporate family or issuer rating (or equivalent). This approximation allows us to infer a likelihood of non-performance which may typically be less probable than a payment default (see Exhibit 5).

In circumstances where there is no rating available for a transaction party, we may use alternative measures to assess its credit quality as set out in Appendix 1. Additionally, in cases in which we have limited information on the credit quality of a transaction party, we typically place a transaction party in the low durability category.

4.2.2. Other Durability Factors

We also adjust our durability assessment for other factors, such as:

» **Strategic importance of the service platform to a transaction party:** The greater the strategic importance that a service platform (such as servicing or cash management) has to the overall business of the transaction party, or to an industry or national interest, the more likely it is the platform will be maintained through adverse times, including bankruptcy reorganization. Examples of situations in which strategic importance could positively affect our durability assessment include:

  – **Servicing of loans originated by captive finance company:** A company may have an incentive to avoid disruption of its customer financing activities if the disruption might also negatively affect the sale of its goods.

  – **Foreign subsidiaries:** We will consider whether the parent of a foreign subsidiary acting as a service provider would continue to maintain the subsidiary if the parent were to be in distress in

the foreign market or globally, and if the parent would pull back to its core market in a time of distress.

» **Size and scale of operation:** A transaction party acting as servicer for a structured finance transaction with a large servicing platform (measured relative to the local economy, or in some cases relative to its industry) generally has substantial servicing revenues, a large employee base and franchise value. Based on these features, we expect that the operation most likely will not be closed down upon financial distress. Although the lending operation might cease, servicing operations could likely continue because the portfolio operates in a run-off mode, in which the transaction party winds down its operations yet continues to generate revenues on the remaining portfolio. Examples in which size and scale could positively affect our durability assessment could include transaction parties, such as equipment lessors or lenders with a substantial market share.

» **Unrated servicers in European and US CMBS transactions:** We may categorize unrated CMBS servicers as medium durability if they have an established and a sufficiently large servicing platform, with an experienced workforce/management and if they are third-party servicers. We may potentially categorize them as high durability if there are additional considerations, such as relationships with investment-grade institutions as described in Appendix 1. We base our durability assessment of these parties on a number of factors, including the scale and viability of the servicing operations.

» **Legal, regulatory and insolvency regimes:** Institutions subject to strong regulatory regimes will generally be less subject to disruption. For banks, the likelihood of default on operating obligations, such as servicing or trustee obligations is generally captured in our CR assessment.[31] Examples where legal, regulatory and insolvency regimes could positively impact our durability assessment include:

  – Unrated, single-purpose cash managers and calculations agents governed by regional laws (e.g., Spanish Gestoras or French management companies): We typically classify unrated entities as low durability. However, in certain jurisdictions, laws serve to enhance the durability of single-purpose cash managers/calculation agents. Consequently, if those entities also have a proven track record, we typically classify them in the high durability category.

  – **State agencies and public instrumentalities of a state:** Typically, we classify these entities as high durability for purposes of assessing operational risk. For example, in US student loan asset-backed securities (ABS), we classify these entities, along with non-profits, as high durability when they serve as master servicers or administrators in US student loan ABS. State agencies are not subject to involuntary bankruptcy because they typically are deemed to be "governmental units."[32] Non-profit corporations are generally not subject to involuntary bankruptcy, and although they are able to file voluntary bankruptcy without explicit permission of any state authority, the risk of a voluntary bankruptcy filing can be significantly reduced by limitations on the scope of activities of the non-profit issuer.[33]

  – **Regulated utility companies providing essential services:** We may classify regulated utility companies that act as service providers[34] as high durability for the purpose of assessing operational risk.[35]

[31] For details on the definition of CR assessments, see *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report.

[32] In the US, a state agency or municipality may file a voluntary case under Chapter 9 only if it is "specifically authorized", in its capacity as a municipality or by name, to be a debtor under such chapter by state law, or by a governmental officer or organization empowered by state law to authorize such entity to be a debtor under such chapter.

[33] Limitations to scope of the issuer generally include the specified functions of securitizing student loans, no additional flexibility to engage in other activities, and have several independent directors or independent managers (or a similar governance mechanism).

[34] For example, in transactions backed by utility recovery costs or tariff deficits.

[35] For details, see our approach to rating securities backed by utility cost recovery charges in the Moody's Related Publications section at the end of this report.

» **Third-party servicers and cash managers:** In general, when considering financial disruption risk for servicers or cash managers classified as low durability, we view third parties that are unaffiliated with the transaction's sponsor as posing less risk than servicers that are the sponsors of transactions. These third-party service providers are usually specialists whose business is relatively simple, in that they perform select duties but do not generally originate loans. In such cases, particularly if the service provider is a large, established company, we place less emphasis on durability and more on the transferability of duties as discussed in section 4.3, and may treat them as high durability.

» **Remaining life of transaction:** The remaining life of a structured finance transaction can also influence how we consider durability. We have more visibility into the durability of institutions over a short timeframe (such as one-to-two years), rather than over a long timeframe (such as 10-20 years).

4.2.3. Ranking the Durability of Transaction Parties

After considering credit quality and other factors, we assess a transaction party's durability and place it in one of four categories: very high, high, medium or low durability. Exhibit 5 describes the characteristics of a transaction party in each of these categories and provides examples.

EXHIBIT 5

Durability of Transaction Parties[36]

Categories	Very High Durability	High Durability	Medium Durability	Low Durability
	Lowest Risk ←			→ Highest Risk
Description:	**A3 or better** rated transaction parties in this category are strong enough to ensure payment continuity in their own right.	**Baa-rated** transaction parties, and non-investment grade transaction parties if they also have at least some of the characteristics described in "Other Durability Factors" (section 4.2.2).	**Ba-rated** transaction parties, which are not high durability.	**Single-B/Caa or unrated** transaction parties that do not have characteristics that can place them in the medium durability category. See section 4.4.7 for considerations for low durability sponsor-servicers that are small and/or new.
Examples including Other Durability Factors:	Transaction parties in ABCP programs (see section 4.4.8 for details).	Baa-rated transaction parties. Non-investment grade companies that have positive durability factors as described in section 4.2.2, such as servicing by a captive finance company, or lessors with substantial assets to protect, servicing platforms of substantial size and scale, or institutions subject to certain regulatory regimes.	Ba-rated transaction parties not qualifying as high durability. Potentially lower-rated (or unrated) companies that have positive durability factors (such as larger unrated servicers in European CMBS).	Many smaller and/or newer (finance) companies. Potentially, finance companies with originate-to-distribute business models.

Source: Moody's Investors Service

4.3. Step 2: Transferability Assessment

The second part of our financial disruption risk analysis considers the ease of transferring the duties of the transaction parties. In the event that a service provider experiences financial distress and, therefore, a disruption of its duties, the ability to speedily transfer those duties to a new party becomes important. In this step, we primarily focus on transferability of servicing duties,[37] which tend to be more complex than

[36] The ratings used in Exhibit 5 should be read in context with section 2.2 and Appendix 1.

[37] In general, we apply our analysis to the master servicer (if any) and the primary servicer (if no master servicer). We also consider the role of the administrator, if it is separate from the servicer and is responsible for collecting obligor payments (e.g., as is often the case in student loan transactions).

duties of cash managers or trustees. In general, we classify cash manager and trustee duties as at least "highly transferable" (see Exhibit 6).

Additionally, we analyze at what point a servicer transfer may arise. In some instances, a servicer transfer may be prompted by the breach of a rating trigger. In other cases, the servicer's replacement is the result of breach of financial covenants. The variety of events may result in different replacement timelines. The timing may further be affected by local insolvency law, and by the decisions of insolvency administrators or bankruptcy courts.

4.3.1. Considerations in Assessing Transferability

The transferability of a service function primarily depends on the following six factors: (1) the complexity of the duties; (2) the availability and expertise of alternate service providers in the market; (3) the extent to which there is a track record of successful transfers in the market, particularly in times of market distress; (4) the extent to which the fees for the transaction service providers are likely to be sufficient to engage a replacement; (5) the tenor of the assets and the securities, and (6) the legal ability to transfer.

4.3.1.1. COMPLEXITY OF DUTIES

Generally, assets that have less complex servicing duties are easier to transfer from one servicer to another, as there will be less information and know-how to convey to a replacement servicer, and a broader market of potential replacement servicers will likely be available. The complexity of duties depends on to the nature of the underlying assets and varies considerably.

- We typically classify highly standardized assets with standardized reporting conventions (e.g., US residential mortgage-backed securities (RMBS), US FFELP student loan ABS) as very highly transferable, because there are multiple service providers that have the relevant experience.
- Strong-performing loans are easier to transfer and service than subprime loans, which require more hands-on servicing and proactive collections and, in some cases, modification activities.
- Operating assets are more complex to transfer when they are subject to, for example, re-leasing during the life of a transaction (for example, aircraft, railcars, and shipping containers), as this requires active involvement and expertise from the servicer.
- Short-term assets that entail a continuous relationship between the servicer and the underlying obligors (e.g., trade receivables) are more complex to service and to transfer. Additionally, these assets involve complex calculations that a replacement servicer may not have the required proficiency to perform.
- A decentralized servicing operation, in which multiple satellite offices[38] conduct the billing, collections, and asset disposition functions, is more difficult to take over than a standard centralized operation, due to the need to coordinate the collections and asset disposition activities at multiple offices.

4.3.1.2. AVAILABILITY AND SOPHISTICATION OF ALTERNATIVE SERVICE PROVIDERS

The ease with which servicing can be transferred depends on the breadth of the market of alternate service providers with sufficient durability to replace the servicer facing financial distress. The greater the number of alternative servicers with the required level of expertise, the easier it will be to find a replacement servicer for a transaction.

We typically expect that the transfer may be more problematic in jurisdictions where securitization and the servicing market are still developing (such as India, for example). These markets are typically untested and

[38] This includes also instances where collections may be performed in person and/or payments are made in cash.

may have fewer third-party servicing or replacement options, or as is the case in India, they may require collections to be done in-person on the ground.

In exceptional instances, we may need to assess whether any party will generally be available to perform the duties, at a country or system level. For example, this might be the case when all major banks within a country are lowly rated, so the overall credit quality of the banking system is low (while the country ceiling might be higher). In such a scenario, the risk of a collapse of the banking system might imply that no back-up servicer might be available to take over servicing of a portfolio immediately when needed. In addition, the servicing fee that might be required after emerging from the banking crisis might be higher. Those considerations could influence our assessment of transferability, hence the rating cap for a transaction in this type of environment.

4.3.1.3. TRANSFERABILITY TRACK RECORD

A strong track record of servicing transfers, particularly through times of market distress, indicates better transferability. Even assets that are complex to service may be deemed highly transferable when there are many third parties available to take over servicing, and particularly when there is a strong track record of servicing transfers (e.g., US RMBS). A history of successful non-distressed portfolio sales and servicing transfers, including instances outside of securitizations, can also indicate good transferability.

Markets with limited or no experience in securitization will require more in-depth assessment, including a review of local regulations and the national legal and insolvency regimes, as well as a review of availability of alternative servicers.

4.3.1.4. SERVICING FEES

We consider the extent to which the servicing fee is set at the market rate and is likely to be sustainable to induce an adequate replacement to take over servicing if necessary. In our analysis, we evaluate to what extent a transaction allows for a potentially higher servicing fee, and whether the fee structure is known. As part of our analysis, we may compare a transaction's fees against prevailing market-rate fees, where available, and we may also consider the possibility of potentially higher servicing fees in the event of a servicer replacement.

4.3.1.5. SPEED AND TENOR OF ASSET REPAYMENT

Pools of long-tenured assets have more time to recover from servicer disruption, and as such the servicing relating to such pools may be deemed more easily transferable than the servicing of short-dated assets, all other factors being equal.

- In any given payment period, the payments on short-dated assets will generally constitute a larger proportion of the total asset balance than the payments from long-dated assets. Therefore, the impact of a financial disruption would be relatively higher for short-dated assets.
- For long-dated assets with smaller periodic collections, the impact of financial disruption could be relatively small as a proportion of the balance.
- Transactions with short-term securities that may mature daily, such as ABCP, normally leave no time for the transfer of key duties. Therefore, we typically focus our analysis on the durability of transaction parties, rather than the efficiency of the transfer process.

4.3.1.6. LEGAL ABILITY TO TRANSFER

When we determine the transferability category, we consider any relevant legal factors that may impede the transfer of servicing functions. For example, if a power of attorney is needed for an issuer to send

redirection instructions to obligors, we assess whether the power of attorney may terminate automatically upon the insolvency of the servicer.

4.3.2. Ranking Transferability

We rank transferability of duties into one of four categories: very high, high, medium and low. We typically assess transferability at a regional- and sector-specific level. As described in section 4.3.1, Exhibit 6 lists some characteristics that help determine how we categorize transferability, and asset classes that typically fall within each category.

EXHIBIT 6

Transferability of Duties of Transaction Parties

Categories	Very High Transferability	High Transferability	Medium Transferability	Low Transferability
	Lowest Risk ←			→ Highest Risk
Description (Assets fall into low, medium, high or very high transferability category, based generally on these characteristics):	» Highly standardized assets. » Good history of servicing transfers including in stressed times. » Highly active third-party servicing market with relevant expertise and experience. » Highly standardized reporting. » Market rate, sustainable servicing fees are known and sized for.	» Assets which are straightforward to service. » Good history of transfers in the specific jurisdiction. » Assets are easily serviceable by third parties. » Numerous such third parties exist with relevant expertise and experience. » Market rate servicing fee is known and sized for, and is generally considered sustainable for servicers.	» Limited market of third party servicers with relevant expertise and experience. » Limited history of transfers. » Transfer of servicing may be complex. » Non-transparent or insufficient servicing fees.	» Assets are literally or effectively not serviceable by/ transferable to a third party or are only transferable/ serviceable with substantial difficulty. » Non-transparent or insufficient servicing fees.
Examples:	» Generally limited to US RMBS and FFELP student loan ABS transactions.	» In US CMBS and most ABS.* » In EMEA, most large established, standard asset classes a) (e.g., RMBS, consumer ABS, etc.) including CMBS). » In Japan and Australia, numerous deals in ABS & RMBS (i.e., standard asset classes). » In Asia, most CMBS in established markets (e.g., Japan, Singapore). » In Canada, most RMBS, CMBS, and ABS. » In Brazil, most large established asset classes.	» In US, Canada, and EMEA may include less standard commercial (e.g., operating lease assets requiring ongoing servicer involvement such as aircraft or other complex transportation assets) and certain other esoteric sectors. » Numerous standard asset classes in smaller or newer EMEA and Asian regional markets. » In Japan, non-standard ABS (e.g., consumer ABS with overpaid interest risk). » Less standard assets in EMEA (e.g., reverse mortgages, healthcare receivables ABS, CDQ ABS, factoring receivables, insurance premium receivables) and Australia.	» In general, unusual but possible. » May include decentralized servicing (for example, where collections are performed in person and/or are made in cash). » May include deals where original servicer/sponsor is extremely integral to ongoing functioning of deal mechanics (for example whole business, asset-based lending requiring continued advancing, etc.). » May apply to very new, untested markets. » Mexican RMBS, where obligor payments are made via payroll deduction.

* In certain instances, we may classify floorplan ABS and intellectual property ABS into medium transferability. For intellectual property ABS, for example, we deem medium transferability as being more appropriate when the sponsor-servicer provides ongoing revenue forecasts or marketing of the business; high transferability will be assumed when the servicer is just making collections and periodic calculations.

Source: Moody's Investors Service

4.4. Step 3: Combining Durability and Transferability with Consideration of Mitigants to Determine Rating Cap (if Any)

4.4.1. Determine Financial Disruption Risk

We combine our assessments of durability and transferability to determine the level of financial disruption risk in a transaction. The higher the durability and transferability are, the lower is the financial disruption risk.

Exhibit 7 provides an illustrative overview of the relative risk of various combinations of durability and transferability, by showing rating caps (if any) for each combination when there are no or limited mitigants against financial disruption risk (see section 4.4.2 to 4.4.7 for details).

As Exhibit 7 shows, for transactions with very high durability (generally single-A or higher) or high durability (Baa, some non-investment grade) service providers, we may rate securities that have little or no mitigants against financial disruption risk as high as Aaa, unless transferability is low or, in some cases, medium. Alternatively, the rating cap could be at the single-A-level for a transaction involving an established servicer classified as having low durability because of weak credit quality, in combination with a portfolio of fairly standard ABS assets in an established market (high transferability).

For a portfolio of low transferability assets, such as a portfolio with decentralized servicing, the ratings of the securities will be dependent on the durability of the servicer. For asset classes categorized as having low transferability, common mitigants such as back-up servicing, may not be effective, or in some cases not even feasible.

In general, we expect that, at a minimum, a transaction party will be responsible for finding a replacement in case of a failing service provider. This may be an implicit obligation such as trustee fiduciary duty to investors that would encompass replacing service providers (however, the value of an implicit obligation may be limited when considering high ratings); in other cases, this may be an explicit obligation (e.g., trustee explicitly required to find replacement servicer, back-up servicer facilitator). For transactions that are highly sensitive to financial disruption (e.g., financial disruption would cause a key hedging arrangement to unravel, money market tranches, etc.), availability of liquidity as well as of a well rated and/or independent cash manager are also likely to be necessary to achieve the rating caps set forth in Exhibit 7.

EXHIBIT 7

Illustrative Overview of Rating Caps if Limited or no Mitigants[a]

Durability	Transferability: Very High	Transferability: High	Transferability: Medium	Transferability: Low
	Lowest Risk ⟷ Highest Risk			
Very High	Aaa	Aaa	Aaa	Rating dependent on durability of service provider, case-by-case
High	Aaa	Aaa	Aaa (some mitigants may be necessary to achieve Aaa)	Rating dependent on durability of service provider, case-by-case
Medium	Aaa	Aa (Aaa usually achievable with mitigants)	A (Aaa usually achievable with mitigants)	Rating dependent on durability of service provider, case-by-case
Low	Aaa	A (Aaa usually achievable with mitigants) [b)]	Baa (Aaa may be achievable with mitigants) [b)]	Rating dependent on durability of service provider, case-by-case

Durability: Highest Risk ⟷ Lowest Risk

a) See section 4.4.2 to 4.4.6

b) See section 4.4.7 for additional considerations for small and/or new sponsor-servicers.

Source: Moody's Investors Service

In most cases, however, mitigants to financial disruption risk can reduce rating constraints, including up to a Aaa-level (see section 4.4.2 to 4.4.6). For small and/or new sponsor-servicers, we are not likely to achieve the rating caps as set forth in Exhibit 7, unless there are strong mitigating factors.[39]

4.4.2. Consideration of Mitigants

Effective mitigants to financial disruption risk can enable ratings as high as Aaa for most combinations of durability and transferability, as described in Exhibit 7, even in cases of low durability[40] and medium transferability.[41] In the following sections, we describe the major categories of mitigants commonly used in transaction structures and indicate the relative strength of the mitigants. More detailed illustrative examples of application are shown in Appendix 6.

4.4.3. Servicer-Related Mitigants

4.4.3.1. BACK-UP SERVICER

A back-up servicer, which is contracted at closing to take over servicing in the event of servicer disruption, can be an effective mitigant to ensure payment continuity. The degree of financial disruption risk firstly depends on the back-up servicer's level of readiness to take over servicing and, to a lesser extent, on its durability.

The presence of a backup servicer may allow for high ratings, including Aaa, for low durability service providers even in cases of medium transferability.

In our analysis, we primarily evaluate the degree of readiness inherent in a back-up servicer arrangement by considering a variety of elements, such as a back-up servicer's capacity to assume the role and tasks, its relevant asset know-how and experience, its familiarity with the portfolio and contractual agreements, the integrity of the portfolio data and possible data exchanges between the parties.

A hot back-up servicer which, for example, performs activities in parallel with the servicer achieves the highest level of readiness. Alternatively, experienced and well-established servicers with sufficient capacity, know-how and tight contractual commitments to step in on short notice also qualify for the highest level of readiness. Hot back-up servicers are found in transactions when the servicer falls into the "low durability" category or transactions where servicing is not highly transferable. In some transactions, the highest readiness requires that the hot back-up servicer receive transaction data to perform periodic calculations required for payments to investors. Therefore, in addition to providing for continuity of servicing, a hot back-up servicer can increase the likelihood that servicing duties and computations are performed correctly. The presence of a hot back-up servicer is typically a strong mitigant to financial disruption risk and, in combination with liquidity, may support high investment-grade ratings, including Aaa.

Warm or cold back-up servicing arrangements have a lower level of readiness than the hot. More specifically, a warm back-up servicer is typically operational within a 30-60 day timeframe, and often has carried out some tests with regards to the servicing-related data and systems. Warm and cold back-up servicing arrangements may be added to a structured finance transaction when a servicer has medium or low durability and the asset transferability is not high. To be an effective mitigant, these arrangements are often combined with liquidity, which may then support high investment-grade ratings, including Aaa.

[39] See section 4.4.7 for details.

[40] See section 4.4.7 for additional considerations for small and/or new sponsor-servicers.

[41] We may limit the ratings on securities backed by a portfolio of low transferability assets, such as a portfolio with de-centralized servicing, regardless of the servicer's durability.

Regardless of the readiness level, servicing may be disrupted if it takes time to terminate an insolvent, previous servicer. An insolvency administrator or bankruptcy court may delay the termination to fully assess the value of a servicing operation.

Performance-based replacement triggers or financial covenants could pre-empt such situations because these triggers aim to start a transfer before a servicer's insolvency. As part of our assessment of financial disruption risk, we therefore review transactions on a case-by-case basis to determine the value of back-up servicing arrangements in the context of the assets, markets and local laws, as well as regulation.

4.4.3.2.MASTER SERVICER

A master servicer has overall responsibility for the servicing of a transaction. Although it may sub-contract the servicing duties to another entity, such as the sponsor, the master servicer retains the performance obligation and the related liability. More specifically, the master servicer is responsible for obtaining portfolio performance information from the servicer or determining cash flows and payments and remitting these to the issuer. In some instances, the master servicer is also responsible for making advances when the servicer fails to perform its obligations.

The presence of a sufficiently durable master servicer can be a strong mitigant to the risk of financial disruption. The risk is particularly high when the servicer is small and does not have a track record. In addition to providing for continuity of servicing, a master servicer can increase the likelihood that servicing duties and computations will be performed correctly.

The presence of a master servicer with adequate durability may enable the securities to reach high investment-grade ratings, including Aaa, even if the primary servicer is classified as low durability, as we would consider our assessment of the master servicer in this circumstance.

4.4.3.3.PARTIES RESPONSIBLE FOR FINDING REPLACEMENTS: BACK-UP SERVICER FACILITATOR, TRUSTEE LANGUAGE

A common alternative mitigant, or potentially a complement, to having a back-up servicer is to have a party responsible for finding a replacement servicer, if and when needed.

- Back-up Servicer Facilitator: Transaction documents in Europe typically provide for the identification or engagement of a replacement or back-up servicer, when required. Although a back-up servicer facilitator may be in a position to assume the servicing obligations and may decide to do so, the agreement between the issuer and the back-up servicer facilitator does not normally include such provisions. Depending on the nature of the back-up servicer facilitator arrangement in combination with other mitigants (such as liquidity), a tranche could achieve high investment-grade ratings, including Aaa-ratings.

  Other jurisdictions may have similar arrangements, such as transition managers in certain US ABS deals. Generally, the format of back-up arrangements could be quite asset-specific (e.g., back-up arrangements for certain asset-related maintenance functions), or transaction-specific. As such, they may require a case-by-case assessment.

  The presence of a party who is responsible for finding a replacement servicer, such as a back-up servicer facilitator (in some cases, in lieu of a back-up servicer), combined with liquidity, can be consistent with high ratings (including Aaa). Depending on the nature of the arrangements, the type of assets and our assessment of transferability, an uplift of one-to-two generic rating categories may be possible.

- Trustee Language and Other Examples: In many US transactions, transaction documents include language to the effect that, in the event of a servicer termination, the trustee will either name a successor servicer, take over the duties itself, or – if unable or unwilling to do so – petition a court of

competent jurisdiction to name a successor servicer. This language provides some assurance of a process that will ensure fulfillment of servicing duties if a servicer termination event occurs.

In Australia, the trustee typically acts as a back-up servicer and is required to take over servicing operations and/or be responsible, as a back-up servicer facilitator, to find an entity to operate as servicer. The trustee is also the cash manager. In Japan and Korea, the trustee is tasked to find a replacement servicer.

In some asset classes, for example EMEA CMBS, the transaction documents may empower bondholders to find and appoint a replacement servicer, or a back-up servicer. In some European markets, such as Spain, France or Belgium, the responsibilities of the management companies may cover finding a replacement servicer or taking over servicing itself.

In Canadian transactions, the transaction documents include language to the effect that, in the event of a servicer termination, the trustee will appoint a successor servicer. While that process is often subject to approval by a majority of the bondholders, most Canadian transactions authorize the trustee to proceed to appoint a replacement servicer if a servicer termination event occurs, even in the absence of such approval.

Generally, in evaluating the efficacy of these arrangements, we assess the extent to which they provide for a transfer of the rights and knowledge that are necessary for the successor servicer to take over the servicing in a timely and effective manner. Arrangements of this nature can be consistent with a Aaa rating, particularly in cases with highly transferability or with a highly durable servicer, and where the transaction has sufficient liquidity to bridge a potential servicer transition period.

4.4.3.4. MULTIPLE SERVICERS

In transactions that involve multiple "related" sponsor-servicers, a sponsor-servicer may assume the portfolio's servicing in the event that another suffers from financial distress. Sponsor-servicers are related when they are associated in some way, such as through a cooperative or savings bank network whose members may use similar origination and servicing platforms.

We evaluate the benefit that multiple servicers offer to a transaction to mitigate financial disruption on a case-by-case basis. When several unrelated sponsor-servicers are involved in a transaction, we consider, amongst others, the incentives of the various servicers. If, for example, excess spread or other elements are shared, an unrelated sponsor-servicer may have a higher incentive to assume servicing the portfolio of a defaulting transaction servicer. If the credit quality differs between the sponsor-servicers, we determine the appropriate durability with regards to our operational risk analysis.

4.4.3.5. SPECIAL SERVICER

Although a special servicer is generally not responsible for duties associated with payment continuity to bondholders, the presence of a special servicer may support the ease of transfer of primary or master servicing duties. Having a special servicer who handles the servicing-intensive assets will make transfer of servicing easier for complex or servicing-intensive asset classes, as it reduces the role of the primary servicer.

4.4.4. Cash Manager

In general, we consider the role of the cash manager to be at least highly transferable. Therefore, different combinations of servicer and cash manager mitigate the financial disruption risk. In some structures, the servicer and cash manager are the same entity. If the service provider is lowly rated or unrated, a back-up servicer or a back-up cash manager mitigate the risk.

In other transactions, the cash management is performed by a party independent from the servicer. Given that managing cash is highly transferable, we categorize the disruption risk as low, assuming that a

replacement or other transaction parties could support or effectuate payments to noteholders if a cash manager were to default.

Arrangements of this nature can be consistent with a Aaa rating, particularly in cases where the transaction has sufficient liquidity to bridge a potential servicer transition period.

4.4.5. Liquidity

Liquidity can mitigate financial disruption resulting from financial distress of one or more transaction parties supporting, when available, securities rated as high as Aaa. For transactions with pools falling into high or medium transferability, liquidity typically covers one to six months of stressed senior costs and interest. The component of stressed interest may be adjusted when the interest rate environment substantially changes. This section does not address liquidity, or other forms of enhancement required to address performance deterioration (among other factors).

The means through which liquidity for financial disruption risk is provided in securitizations are very diverse, including reserve funds, letters of credit, advances under a liquidity facility, servicer advances, principal collections that can be used to pay interest,[42] or collections from the assets directly into an account owned by the special purpose vehicle and pledged and controlled by the trustee.[43]

For our liquidity assessment, the rating of the liquidity facility provider – typically a financial institution – would be Prime-1 or Prime-1(cr) when supporting highly rated securities. Additionally, the level of interest rates and costs we assume to assess the sufficiency of liquidity are stressed values that differ by market and interest rate environment.

We also consider whether the transaction has effective mechanisms to draw on the liquidity. For example, we assess whether a cash manager or trustee is entitled to make necessary liquidity draws, or whether liquidity draws depend on the servicer's instruction or reports. Estimation language (which can be found, for example, in European transactions) typically allows for payments of senior waterfall items by a third-party cash manager using estimated payable amounts.

A combination of back-up servicer providers or facilitators (including trustees where relevant) and independent cash manager with sufficient and accessible liquidity is a strong mitigant that can support high ratings, including Aaa.[44]

However, in cases where liquidity is provided in the form of a reserve fund, the above combination of mitigants may not be adequate to support ratings higher than Aa or A, if liquidity may be depleted or severely reduced when there is weak collateral performance. Reserve funds that have a separate liquidity ledger or that absorb losses only on the last payment date, can support ratings higher than A or Aa.

[42] In structured finance transactions where principal can be used to pay interest as the sole source of liquidity, additional mitigants may be needed to achieve ratings as high as Aaa on senior notes.

[43] In instances where, based on transaction documentation, interest payments could be deferred on certain rated notes, financial disruption risk is less relevant and therefore external liquidity may not be required, even for higher ratings.

[44] For some asset classes, with third party servicers such as certain European CMBS, an independent cash manager with access to sufficient liquidity at the issuer level is a strong mitigant supporting high ratings, including Aaa.

4.4.6. Other Mitigants to Financial Disruption

4.4.6.1. ROUTING OF PAYMENTS

The routing of payments directly from obligors to accounts in the name of the issuer can also mitigate financial disruption risk. If the obligor's payments go directly to trust accounts or to a highly rated, separate third-party account, there are fewer risks to payment continuity in the event of servicer disruption.

The manner of payment also matters. For example, direct debits, even when initially made to the servicer's account, can be transferred to the trust collection account. The timing of the servicing transfer (including for example the transfer of direct debit mandates) will depend on whether only borrower notification is required or borrower consent is required.

4.4.6.2. HIGH CREDIT ENHANCEMENT LEVELS

In some cases, high levels of credit enhancement can also help offset financial disruption risk. In cases where bonds are not highly sensitive to financial disruption (i.e., there is no breakage of critical swaps, and the bonds accrue unpaid interest), additional credit enhancement can help ensure that bondholders are eventually fully paid after a period of financial disruption.

4.4.6.3. OVERSIGHT BY FINANCIAL GUARANTORS

The involvement of an appropriately-rated financial guarantor of rated notes may help offset risks of financial disruption because the guarantor (or a similar party) has a strong vested interest in ensuring the service providers to the transaction effect payments to investors in a timely manner. In addition, a financial guarantor mitigates financial disruption risk if it is contractually obliged to make payments.

4.4.6.4. REPLACEMENT MECHANISMS AND DELEGATION ARRANGEMENTS IN ABCP

For ABCP programs, we also assess the durability and transferability of key roles, especially when unrated entities or entities rated lower than A2 or Prime-1 perform critical functions. ABCP program documents generally provide for a process and criteria to replace a failing or resigning party. In our analysis, we assess whether any form of replacement would result in a service gap or increased costs for the ABCP program.

Typically, we deem that one or several of the following delegation arrangements are sufficient to address incremental risks related to ABCP service providers that are unrated or not rated at least A2 or Prime-1:

- The primary service provider delegates its critical functions to a third-party rated at least A2 or Prime-1.
- A third party rated at least A2 or Prime-1 fronts critical ABCP program functions while sub-delegating to a third party that actually perform the tasks.
- A suitable party rated at least A2 or Prime-1 provides a guarantee of performance that is in accordance with our criteria for credit substitution.[45]
- Third-party service providers enter into back-up arrangements or agree to maintain documented back-up plans. Such providers are either highly rated parties, or sometimes specialized entities, with no linkage to the primary service provider. For critical roles, such as sending the liquidity draw notice, Prime-1 rated ABCP programs typically include a hot back-up servicer.

[45] For more details on our approach to credit substitution, see the Moody's Related Publications section at the end of this report.

4.4.7. Considerations for Small and/or New Sponsor-Servicers

Historical experience indicates that small and/or new companies[46] are particularly susceptible to disruption in providing their services as sponsor-servicer.[47] If such a sponsor-servicer undergoes financial distress, problems that can arise include cutbacks in servicing staff, diminished oversight of the cash transfer processes, reduced transaction governance and improper servicing practices. For these types of entities, we will consider additional factors in assessing achievability of high investment-grade ratings for structured finance notes including Prime-1 for money market tranches. These additional factors often include the assessment that there are no corporate governance issues and the analysis of alignment of interest, profitability and liquidity, size, ownership, experience and track record.

We will apply a case-by-case analysis for these types of sponsor-servicers. However, examples of indicators that are likely to result in our decision to categorize a sponsor-servicer as being a small and/or new entity include less than US$1 billion in total assets under management (the appropriate amount may vary by industry or by jurisdiction)[48] and being less than seven years in business.[49] We typically assess the size at closing of a transaction or when we receive updated values.

Except for cases where transferability of servicing is very high, we are not likely to achieve the rating caps set out in Exhibit 7 in instances when a sponsor-servicer is small and/or a new organization and there are no effective mitigants. In such instances, we are more likely to reach ratings at least a full rating category lower than the indicated rating caps set out above. In case we determine that a new sponsor-servicer falls into low durability while at the same time the serviced assets fall into medium transferability, the likely rating resides within the non-investment grade universe, in case there are no effective mitigants.

To overcome a possible financial disruption risk, the mitigants for small and/or new sponsor-servicers are typically strong such as very high or high durability master servicers who assume servicer performance risk and are engaged at transaction closing; or "hot" or, in some cases, "warm" back-up servicers. For asset types that are well established and for which the servicing market is highly liquid, "cold" back-up servicers, or potentially, back-up servicer facilitators could be sufficient mitigants. For transactions with P-1 rated money market tranches where the sponsor-servicer's credit quality is lower than B1,[50] we may look for other durability factors or incremental mitigants, such as:

- Transaction is backed by a standard asset class;
- Sponsor-servicer is of significant size relative to the industry with a major operating platform that is not likely to be shut down over the life of the money market tranche;
- Measures are in place to ensure the continued execution of the sponsor's activities, such as a hot back-up servicer legally able to step-in and service the assets in the event of a sponsor-servicer's financial distress, and a dedicated deal-specific lockbox account held by the trustee;[51]

[46] Typically these entities will be in the single-B category or lower (i.e., low durability entities), or unrated; however, in some cases this could also include entities in the Ba-category, such as certain financial institutions that could be liquidated upon bankruptcy. See Appendix 6 for details.

[47] A sponsor-servicer describes, for example, transactions where the originator and servicer are the same entity. In case the sponsor and servicer are two different entities, we would assess them separately and would typically apply similar criteria as described in section 4.4.7 when the entities are small and/or new. In instances, where for example, servicing is fully delegated to an established servicer this section does typically not apply.

[48] For financial institutions, we commonly measure total assets under management; for non-financial corporations, we may measure size in terms of revenues. If revenues are less than US$500 million, we may classify a non-financial sponsor-servicer into the category of small.

[49] Merger and acquisition activities will be considered on a case-by-case basis when we determine the years in business.

[50] We will consider Ba or lower rated banks on a case-by-case basis when they are small and have a material likelihood of liquidation upon bankruptcy while acting as sponsor-servicer for a transaction issuing a P-1-rated money market tranche.

[51] Or comparable other structures outside of the US.

» Substantial cushion between the expected payoff of the money market tranche and its legal final maturity;

» A guarantee on the money market tranche from a Prime-1-rated institution.[52]

As part of our analysis, we may determine available liquidity, credit enhancement or servicer replacement mechanisms included in the transaction documents to be insufficient to ensure payment continuity and therefore may ultimately limit the ratings on the securities. Additional drivers for such a determination could result from complex waterfall structures and performance triggers requiring complex ongoing calculations, warehouse structures with ramp-up periods, or from an originate-to-distribute model that increases the risk of non-alignment of interest in the transaction. In such instances, we will evaluate financial disruption risk in the context of small and/or new low durability sponsors-servicers on a case-by-case basis.

4.4.8. Considerations for Asset-Backed Commercial Paper

In general, important service providers for Prime-1 rated ABCP programs are to be rated Prime-1, or should be appropriately related to a Prime-1-rated institutions (see section 4.2.1). In the case of a lower-rated or unrated service provider, additional mitigants may be needed at a Prime-1 rating level (see section 4.4.6.4).

5. Commingling Risk

In many structured finance transactions and some covered bond programs, funds owed to investors may be "commingled", or mixed together, with funds of another party involved in the transaction, typically the servicer, prior to the transfer of the funds to the issuer's account.[53] If that other party becomes insolvent or bankrupt, it may be difficult to determine the source and ownership of the commingled funds so that investors may become unsecured creditors of the insolvent or bankrupt party, resulting in an investor loss.

In analyzing this commingling risk, we first assess if the transaction is subject to the risk, based on an assessment of the jurisdiction's legal and regulatory framework and the cash flow structure of the transaction. For cases in which the risk is present, we then analyze the likelihood of the default by the party[54] with whom the funds are commingled and the likely commingling exposure amount. In the final step, we assess the expected commingling loss and the impact on the rating of the bonds. The three broad steps in our analysis are shown in Exhibit 8 and explained in more detail in the following sections.

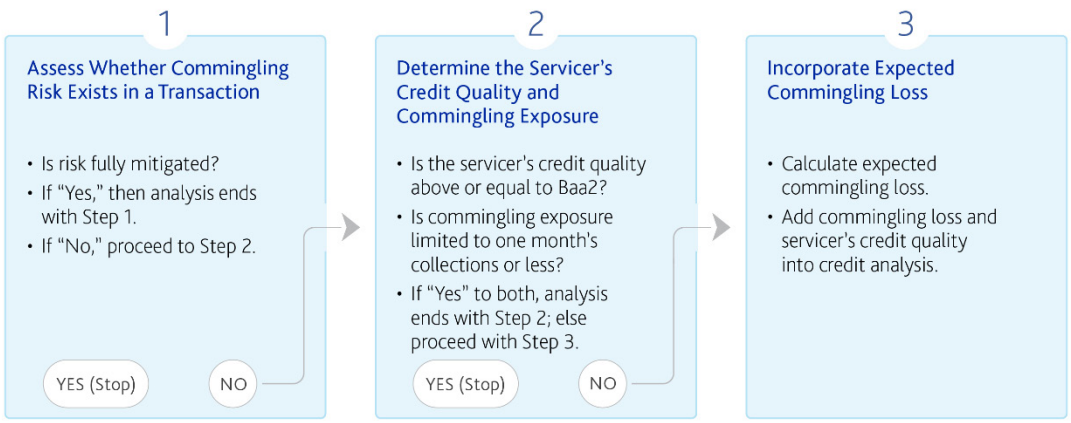
In certain circumstances, a rating committee may consider additional factors, not described in the details below.

[52] For details, see our approach for credit substitution in the Moody's Related Publications section at the end of this report.

[53] In some cases, collections or proceeds are commingled in the account of the originator, seller or sponsor. For covered bond programs where a special purpose entity holds the cover pool assets, the reference here to "issuer" should be read as the reference to the special purpose entity.

[54] See Appendix 1 for details.

EXHIBIT 8
Three Schematic Steps to Analyze Commingling Risk



Source: Moody's Investors Service

5.1. Commingling Risk in Structured Finance Transactions

Step 1: Assess Whether Commingling Risk Exists in a Transaction

The legal and regulatory framework of a transaction's jurisdiction and the transaction's cash flow structure determine whether commingling poses a risk to the transaction. For example, for US banks, the safe harbor rules of the Federal Deposit Insurance Corporation limit the risk by providing for the receiver of an insolvent institution to remit collections to the transaction issuer in priority to other creditors. A structural feature that limits the risk in some transactions is documentation that requires that obligor payments be made to "lockbox accounts" controlled by the issuer rather than the servicer. Another structural feature that can reduce the risk is the requirement for frequent "cash sweeps"[55] from the servicer's accounts into the issuer's account, to limit the maximum exposure in the event of a servicer's insolvency or bankruptcy.[56]

In some cases, we may conclude that the commingling risk is effectively eliminated by one or more of the mitigating factors; in that case, we end our commingling analysis. In other cases, we may conclude that at least some commingling risk remains even after considering all mitigating factors;[57] in such cases, we proceed further to Step 2 of our analysis.

Step 2: Determine the Servicer's Credit Quality and Commingling Exposure

In the event that we determine that mitigants do not fully address commingling risk, as a next step, we assess (1) the likelihood that cash flows could become commingled, represented by the probability of default inherent in the rating of the servicer, and (2) the likely amount of the exposure in the event of a default.

If, on the one hand, a servicer is rated Baa2 or above[58] (or if we deem its credit quality to be commensurate with a Baa2 rating), and if the commingling exposure is expected to be equal to one month of lost collections (or less), we typically view the risk as immaterial and do not add any incremental commingling loss as part of our credit analysis. On the other hand, if we deem a servicer's credit quality to be Baa3 or

[55] E.g., every two days.
[56] US structured finance transactions with frequent cash sweeps and servicers which benefit from safe harbor rules, typically fully mitigate commingling risk.
[57] See Appendix 7 for details.
[58] See section 2.2 and Appendix 1 for details.

lower (or if it deteriorates to Baa3 or lower during the transaction's life), we add an incremental commingling loss to our credit analysis based on the rating and the amount of exposure.

Furthermore, if the commingling exposure is larger than one month's collections or if transactions include portfolios with high periodic payment rates or lumpy payment patterns, we add an incremental commingling loss into our analysis regardless of the rating of the servicer, unless the risk is sufficiently mitigated.

In the instances where for a bank-sponsored credit card transaction the commingling risk is not mitigated, even though the periodic payment rates are often high, we typically apply the Baa2 rating threshold and the one month's collection assumption. We apply this exception because of our credit card approach which is highly dependent on the credit quality of the sponsor-servicer.[59]

Step 3: Calculate Expected Commingling Loss and Incorporate Into Credit Analysis

In the first part of Step 3 of our analysis, we evaluate the cash flow exposure that is at risk to commingling. In many cases, we view the exposure to be one month of collections. However, our assessment can vary depending on factors such as the ease with which borrowers can be notified to redirect payments away from an insolvent servicer (which depends, for example, on how centralized a servicing and collection operation is), how frequently cash is swept from the servicer's accounts to the issuer's account, and how potentially variable the month-to-month payments and proceeds are.

We typically haircut the expected exposure by 45% to account for expected recoveries that could result from the issuer's unsecured claim against the defaulting servicer. As the final part of Step 3, we calculate the incremental expected loss from commingling by considering (1) the expected net commingling exposure and (2) the servicer's probability of default as part of our credit analysis.[60]

5.2. Commingling in Certain Covered Bond Programs

Commingling risk may arise in covered bond programs when:

» payments on the cover pool assets initially flow into a general collection account of or at the issuer, sponsor or servicer (these may or may not be the same entity); and

» the collection account cash flows are not effectively segregated for the benefit of the cover pool from the insolvency estate of the issuer, sponsor or servicer.

If the issuer and, if a different entity, sponsor or servicer defaults, the bondholders may be exposed to the loss of cover pool cash that has not been transferred out of the commingled account.

Commingling risk is typically mitigated via the legal covered bond framework of a jurisdiction and/or through structural mitigants, including credit enhancement.[61]

[59] See our approach to rating credit card receivables-backed securities in the Moody's Related Publications section at the end of this report for details.

[60] For deposit-taking financial institutions in Japan that act as servicer in a structured finance transaction, we typically use a lower default frequency assumption. See also the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report and Appendix 2 for more details.

[61] See our covered bond legal framework reports on www.moodys.com for details.

6. Risk Related to Account Banks and Investments

In this section, we describe the risks in structured finance transactions relating to cash that is held temporarily in account banks or market investments.[62] The risks arise because of the typical transaction mismatch between (1) the time that cash is received from obligors and (2) the time it is paid out to investors. During that time, the cash is typically invested either in account banks or in specified market instruments, both of which may default, resulting in a loss to structured finance investors. Transactions that have reserve or liquidity funds in account banks are similarly exposed to the risk of default of those banks.[63]

In our analysis, we assess both the potential size of the transaction's exposure to this risk as well as any mitigating factors. Common mitigating factors include minimum ratings for account banks and investments, provisions that require the transfer of funds to another account bank if the rating of the bank falls below a specified level, and requirements that deposits at account banks be held in accounts that are in some way segregated from the bank's other funds and risks, such as in corporate trust accounts at US banks.[64]

We describe our analysis and other considerations in the following sections. Since this approach is global, incorporating a wide range of regional practices and transaction structures, it is general in some respects and is not intended to be an exhaustive discussion of all the factors that we consider in every transaction. In arriving at a final rating, rating committees will, where appropriate, consider additional qualitative and quantitative factors, as deemed relevant.

6.1. Account Banks and Investments: Rating Uplift Benefit, Exposure Category and Rating Caps

Generally, our analysis of account banks and temporary investments[65] consists of three steps: (1) we assess the "rating uplift" to the account bank's rating[66] that is provided by any transfer provisions (or other measure), obtaining an "adjusted" rating; (2) if the actual, adjusted rating or criteria are below a certain threshold,[67] we assess the exposure of the transaction to the risk posed by the account bank or temporary investment and categorize the risk in one of two categories (i.e., either "standard" exposure or "strong" exposure); and (3) we determine rating caps to the transaction ratings based the analysis described and subject to other quantitative and qualitative factors a rating committee may deem relevant.

In Exhibit 9, we show the three schematic analytical steps:

[62] For covered bonds, account bank and investment risk is addressed by a combination of factors including mitigants in covered bond legal frameworks, rating constraints from our TPI framework and case-by-case analysis. For transactions outside the TPI framework and those with material account bank risk that do not benefit from a covered bond legal framework, we may benchmark the maximum rating achievable under our covered bond methodology against the framework set forth in section 6 and confirm that any rating uplift benefit can be justified by the credit features of the transaction.

[63] In certain markets or asset classes, we may take into account other types of cash held temporarily at account banks or in the form of temporary investments.

[64] See section 6.5 for details.

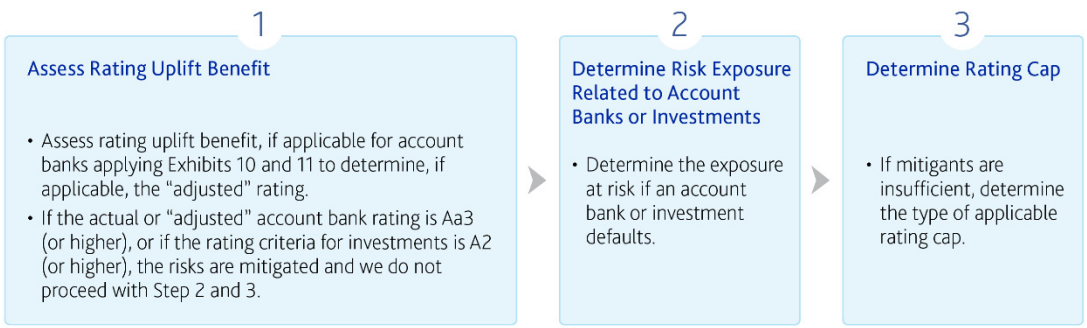
[65] This section, for example, also applies to guaranteed investment contracts.

[66] See Appendix 1 for details.

[67] See section 6.1, Step 1 for details.

EXHIBIT 9

Schematic Illustration of Our Analysis of Account Banks and Investments Related Risks



Source: Moody's Investors Service

Step 1: Assess Rating Uplift Benefit

In Exhibit 10, we show the amount of "rating uplift" – measured in the number of rating notches – that we typically apply to account for the protection provided by transfer provisions including certain trigger levels or equivalent measures.[68] For example, Exhibit 10 shows that for a transfer provision set at loss of Baa2 that requires a replacement of the account bank, we would typically increase the rating of the account bank by two rating notches. Therefore, for example, if an account bank were rated A3, its adjusted rating for the purposes of this analysis would be A1.

A transfer provision, for instance, fully mitigates the risk related to an account bank when the bank is rated either at the same level, or higher than a transfer trigger set at the loss of either A2 or P-1 rating level. If the investment criteria is set at A2, the risk is mitigated. In such instances, we do not proceed with Step 2 or 3 of our analysis.[69]

EXHIBIT 10

Rating Uplift Benefit: Account Banks

Transfer Trigger or Equivalent Measure at Loss of	Rating Uplift Benefit
A2 or P-1	Risk mitigated
A3	+3 notches
Baa1, Baa2 or P-2	+2 notches
Baa3 or P-3	+ 1 notch
Non-IG	0 notches

Source: Moody's Investors Service

We typically do not ascribe any rating uplift benefit to transfer provisions that allow for the transfer to take more than 60 days. In addition, we would not ascribe any benefit to a trigger that we deem ineffective (for example, when the provision is set above a bank's current rating).

Step 2: Determine the Risk Exposure Related to Account Banks or Investments

In Step 2 of our analysis, we determine the exposure of the transaction to the account bank or investment. We categorize relatively low exposures as "standard" and relatively high exposures as "strong." We calculate

[68] Structured finance transactions often document that the account bank holding cash has a minimum required rating. If the bank is downgraded below the threshold, the account bank or some other party is required to transfer the bank account a replacement bank with the requisite rating.

[69] See Exhibit 10 and Exhibit 11 for details.

this measure for senior notes;[70] in contrast, we assume that mezzanine and junior ranking notes fall typically into the "strong" category.[71]

We measure the exposure as a ratio of the cash expected to be in the bank account or investment – net of expected recoveries after a default – divided by the amount of credit enhancement. We typically assume a 45% recovery rate. In determining the amount of credit enhancement, we include all forms, except excess spread.

If the calculated exposure is greater than 40%, we categorize the exposure as "strong." Otherwise, we categorize it as "standard."

Step 3: Determine the Type of Rating Cap

In Exhibit 11, we show rating caps for structured finance securities that result from the risks posed by having funds invested in account banks or investments with various ratings.[72] The caps depend on whether the exposure is "standard" or "strong."[73] For example, as shown in Exhibit 11, if the account bank has an adjusted rating of A3 and if we viewed the exposure to the account bank as "standard", then the maximum rating we would assign to the structured finance bonds would be Aa1. However, if the exposure of the bonds to the account bank were higher – so that we deemed it to be "strong" exposure – the maximum rating would be only Aa3.[74]

The rating caps shown in Exhibit 11 are indicative as rating committees may deviate and may consider other structural elements and risks[75] in determining the ratings of structured finance securities. In certain instances, a rating committee may, for example, determine that temporarily invested cash balances are immaterial to the rating of the notes. It could therefore assign ratings different from the caps we set forth in Exhibit 11.

[70] For transactions with long lives and low periodic collections, in combinations with high levels of non-cash related credit enhancement, a rating committee may classify senior notes into the "standard" category without performing any detailed calculation.

[71] When senior bonds that we classified as "standard", have been redeemed or will be redeemed shortly, we typically reassess the risk exposure of the next ranking class of bonds (as a new "senior" bonds).

[72] Since we do not adjust the ratings of investments, their "adjusted" ratings, for these purposes, are typically equal to their documented rating criteria.

[73] Note that in some instances the rating caps for account banks are lower than for investments of the same actual or adjusted rating. This is because for account banks senior notes could face the risk of a bank failure over the entire life of the transaction (e.g., no effective transfer and funds continue to be deposited with a downgraded account bank), while the risk for investments is limited to the investment period (e.g., less than a month).

[74] See Appendix 8 for some illustrative examples.

[75] See section 2 for details.

EXHIBIT 11

Rating Caps: Account Banks and Investments[76]

Account Bank Rating (adjusted as per Exhibit 10), or Rating of Investments [77]	Types of Rating Caps: Standard Category (Senior notes, when applicable)	Types of Rating Caps: Strong Category (Senior notes, when applicable, mezzanine and subordinate notes)
Aaa	Aaa	Aaa
Aa1	Aaa	Aaa
Aa2	Aaa	Aaa
Aa3	Aaa	Aaa
A1	Aaa	Account bank: Aa1 Investments: Aaa
A2	Aaa	Account bank: Aa2 Investments: Aaa
A3*	Aa1	Aa3
Baa1	Aa2	A1
Baa2	Aa3	A2
Baa3	A1	A3
Non-investment grade	+5 notches	+3 notches

* We typically consider the risk that is associated with a one-month investment in A3-rated securities as being negligible as long as the criteria are documented. See also sections 6.2 to 6.5 for details.

Source: Moody's Investors Service

Incremental Asset Class Considerations When Determining Rating Caps

Some asset classes have portfolios or structures that result in large or very limited cash balances. Certain CMBS transactions or Credit Card ABS, for example, could give rise to large, undistributed percentages of the principal balances over a given period. Therefore, we typically classify the senior notes typically in these asset classes into the "strong" category.

Towards the end of a transaction's life, rating committees may conclude to assign ratings that differ from the rating caps set forth in Exhibit 11 in consideration of certain qualitative and quantitative factors.

6.2. Multiple Account Banks

For multiple account banks holding cash in a structured finance transaction, we apply the approach described in section 6.1 to each account bank.[78, 79] In a next step, rating committees then determine whether the account bank related risk can be attributed to a single account bank and conclude the analysis on that basis. If, however, the risk cannot be clearly allocated to one institution, a rating committee may find it more appropriate to apply our analysis in relation to a lower rated account bank, depending on the type of rating cap.

[76] While the account bank rating typically references the deposit rating of a bank, the rating for investments corresponds to the type of investment instrument. For example, if a bank or other transaction party makes an investment in the form of US Treasury bills, we reference the US government rating.

[77] Some transaction documents refer to short-term ratings for account banks or investments. For details relating to our short-term ratings, see *Rating Symbols and Definitions* as well as our methodology for global short-term ratings in the Moody's Related Publications section at the end of this report.

[78] In a UK RMBS transaction, we may consider that multiple account banks hold cash when, for example, the cash reserve is deposited with one bank while the transaction servicer declared a trust over its collection account held at another bank in favor of the issuer.

[79] For example, when debtors pay directly into a collection account that is held in the name of the issuer, we will assess the relevant account bank exposure on a case-by-case basis in consideration of all relevant factors.

6.3. Additional Considerations for Investments

6.3.1. Currency Risk, Principal Repayment and Maturity Profile

Transaction documentation of structured finance transactions typically requires that market risks are fully eliminated with regards to investments. Therefore, temporary investments (which may also include investments in structured finance securities) mature either on or shortly before the distribution date for the rated securities.

Additionally, any currency-related risks are typically fully mitigated and principal repayments at the maturity of an investment are typically made at par.

6.3.2. Money Market Funds (MMF)[80]

Some ABCP programs and structured finance transactions that issue money-market tranches invest in MMFs. For ABCP programs, for example, investments in MMFs pose the risk that the shares may not be redeemable upon demand, which – if unmitigated – would be a liquidity risk that we would not consider consistent with a P-1 ABCP rating. Consequently, we examine in our analysis the extent to which the ABCP program has sufficient liquidity, in some cases provided by program-wide credit enhancement that would offset that risk.

For a structured finance transaction to have securities rated Aaa and Aa, any MMF in which cash would be invested, would need to be rated Aaa-mf. As eligible investments, MMFs pose a small but incremental risk resulting from potential delays in interest or principal payments, which could cause, for example, events of default or swap termination payments. Therefore, we assess the extent to which the risk is mitigated by structural features such as over-collateralization, reserve accounts or alternative sources of liquidity, or the ability of the servicer, trustee or manager to access additional funding.

6.4. Intraday and Overnight Exposures to Account Banks and Paying Agents

If a bank holds cash of a structured finance transaction on an intraday or infrequently on an overnight basis, the bank should be at least rated Baa3 or P-3 to be consistent with a Aaa rating on a transaction's bonds. For longer periods of cash holdings, we apply our approach as set forth in section 6.1.

For short-term structured finance securities rated P-1, if a bank holds cash on an intraday-basis only, the minimum bank rating is P-2. If the bank holds cash overnight or longer, the minimum bank rating is P-1.

6.5. Trusts Accounts or Equivalent Protection

6.5.1. Ratings for Trust Accounts

Structured finance securities can also have a rating as high as Aaa, if an investment-grade rated bank holds the transaction's cash or securities in a fiduciary capacity in segregated accounts, or if the transaction benefits from legislation that provides comparable protection (such as US corporate trust accounts). Typically, we assume that a bank does not hold cash on trust unless we receive suitable assurance from legal counsel that such cash would benefit from the same treatment as securities. Our approach to assessing trust accounts allows us to consider financial disruption and operational risk due to a bank's failure[81] as mitigated. Exhibit 12 outlines our criteria for banks that hold a transaction's cash or securities in eligible trust accounts or their equivalent.

[80] Money Market Fund (mf) Ratings are categorized as Other Permissible Services. See *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report for details.

[81] See section 4 for details.

EXHIBIT 12

Long- and Short-Term Ratings for Trust Account Banks

Minimum Ratings for Trust Accounts	Structured Finance Ratings
Baa3 or P-3, or higher	Aaa*
Non-Investment Grade	Case-by-case assessment

* Upon the loss of bank's Baa3 rating, transactions must move the trust account within 60 days to a new bank with a rating of at least Baa3.

Source: Moody's Investors Service

To address the risk associated with a bank acting as a provider of an eligible trust account (or equivalent), we deem the risk to be fully mitigated if the minimum ratings thresholds of: (1) Baa3 or P-3 for instruments rated Aaa; and (2) P-2 for instruments rated P-1 are met.

If trust property is held by a bank on an overnight (or longer) basis and we are not sufficiently confident that, upon insolvency of the bank, it will be delivered to the issuer or investors in a timely manner (for example, when the release of trust property depends on operational action that the bank will take), we consider the risk to be only fully mitigated when the transaction documents stipulate a minimum rating threshold of P-1 for structured finance securities that are rated P-1.

Generally, if a trust account bank stands to receive the cash proceeds of securities held in a trust account and such proceeds will not be held in trust, the trust account bank must satisfy the applicable account bank criteria that apply to banks acting in a non-fiduciary capacity as stated in the relevant exhibits of section 6.1, especially when the cash is held for longer than overnight.

6.5.2. Legal Aspects of Trust Accounts

If a bank's trust department holds property in a trust account in the US, or there is an analogous situation for a transaction in another relevant jurisdiction and the bank's books and records clearly document the investors' ownership interests, the receiver of the failed bank will ideally treat the account as the investors' property and not as the bank's property. However, if an account provider fails to properly document the transaction's accounts in its books and records, the securities in the account will be at risk on the date the account provider enters receivership. Even with acceptable payment timing delays, recoveries will depend on the quality of the failed bank's internal controls and whether investors incur litigation costs to protect their rights.

In jurisdictions outside the US, there may be similar situations in which property held by a bank on behalf of another person is not considered to be the property of the bank in bankruptcy, insolvency or analogous proceedings. In common law jurisdictions, trust arrangements will generally achieve a ring-fencing of property, since the bank acting as trustee is not the beneficial owner of the property and cannot use it for its own purposes, including satisfaction of its credits in bankruptcy.

In civil law jurisdictions, the treatment of property held by a bank will depend on the specific provisions of the relevant legislation. When a bank has accepted a fiduciary or custodial role, or when legislation imposes such a role, the bank's creditors typically have no recourse to such property until the account beneficiary has been paid in full. The effectiveness of segregated accounts in non-US jurisdictions will be assessed based on relevant legal opinions and other information, including the nature of the property and the specificity of applicable legislation.

6.6. Funded Synthetic Transactions

In funded synthetic transactions, such as synthetic ABS, RMBS or CDOs, the proceeds from the issuance of securities are either held at an account bank or invested in securities, which in return are the sole source of principal payments to investors. In those situations, the credit quality of the structured finance transaction is highly dependent on the credit quality of the account bank or investments, because the cash or securities constitute the sole source of payments to investors.[82]

For example, if the transaction documentation does not include any transfer triggers for the account bank, the rating of the structured finance securities is capped at the rating of the account bank.

When transaction documents provide for a transfer trigger for the account bank, the rating cap for funded synthetic transactions reflects the combination of the uplift benefit for transfer trigger as described in Exhibit 10 and the rating level of the account bank. Exhibit 13 shows several illustrative examples.

EXHIBIT 13

Funded Synthetic Transactions: Illustrative Examples

Illustrative Examples	Rating of Account Bank or Investment Criteria	Transfer Trigger or equivalent measures	Rating Uplift Benefit (see Exhibit 10)	Rating Caps
1	Account bank rating: A2	A2	Risk mitigated	Aaa
2	Account bank rating: A3	A3	+ 3 notches	Aa3
3	Account bank rating: A3	Baa3	+ 1 notch	A2
4	Investment: Baa2	Not applicable	Not applicable	Baa2
5	Account bank: A3 Investment: Baa2	No transfer trigger	Not applicable	Baa2 (as investment criteria weaker than account bank rating)
6	Account bank rating: Ba1	Ba3	0 notches	Ba1

Source: Moody's Investors Service

7. Set-off Risk

In certain circumstances, obligors of defaulted financial institutions can use financial assets owed to them by those institutions to lawfully offset payment obligations, including obligations to repay receivables backing a structured finance transaction or covered bond program. We assess set-off risk where there is either a legal right of set-off, or an equivalent legal remedy that results in materially the same economic effect.[83]

Set-off could, for example, arise when a borrower sets off a deposit balance against an outstanding loan amount following a default of the (originating) bank. Similarly, set-off could occur when a lessor defaults on its servicing and maintenance obligations under securitized auto leases and the lessees are able to set-off any resulting damage claims against their lease payments.

[82] In synthetic transactions where the risk associated with, for example, a credit default swap is not negligible, we may consider in our analysis both, the potential loss resulting from the credit default swap and the loss due to a default of the account bank or investment. A rating committee may therefore assign or maintain ratings that could be lower than the rating of the account bank or investment.

[83] For example, the ombudsman scheme in Australia and Dutch defenses.

Set-off risk varies across jurisdictions and transaction structures. In addition, the mitigants to set-off risk take various forms. Some mitigants are transaction-specific, such as set-off reserves, while others relate to the loan contracts of the securitized receivables where set-off waivers may or may not be enforceable.

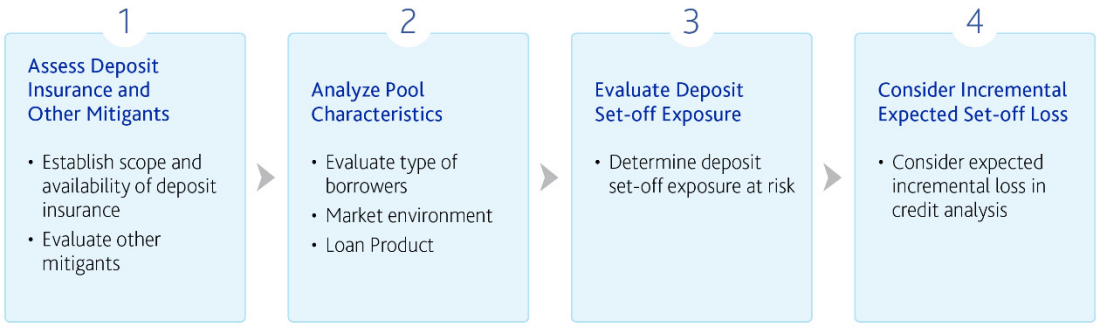
7.1. Set-off Risk Related to Deposits

Set-off risk usually arises in the context of bank deposits being used to offset obligations to financial institutions. The risk is typically small in instances of retail deposits covered, at least in part, by a deposit insurance mechanism (except in certain cases such as high net worth obligors).[84] That is retail deposits tend to be relatively small, posing little exposure above the deposit-compensation limits. However, the risk can be larger in jurisdictions that do not have deposit insurance systems and for corporate and public sector obligors, who tend to have larger deposit balances.

For illustration purposes, our analysis of deposit set-off risk can be broken down into four schematic steps, as shown in Exhibit 14.

EXHIBIT 14

Four Schematic Steps to Analyze Deposit Set-off Risk



Source: Moody's Investors Service

Step 1: Assess Deposit Insurance and Other Mitigants

In Step 1 of our analysis, we determine whether there are regulatory, legal or transaction specific characteristics that fully mitigate deposit set-off risk. If we conclude that set-off risk is fully mitigated, our analysis is complete. If, on the other hand, we conclude that some set-off risk is unmitigated, we proceed with Steps 2 to 4.

In cases in which deposits are covered by a deposit insurance mechanism, we analyze the extent to which it can mitigate the risk by making payments in the event of a bank failure and reducing the need for obligors to set-off their obligations. Some of the elements we examine are availability of deposit insurance, its compensation limit, and the types of deposits it covers.

We generally assume that governments protect insured deposits and that a default by a deposit insurance scheme would be indicative of severe systemic financial instability. More specifically, we view the risk of non-payment on insured deposits as equivalent to the risk of a deposit freeze in a given country, which is captured in our local currency deposit country risk ceiling. As our structured finance and covered bond

[84] Such deposit insurance mechanism exists, for example, in the European Union (EU), Australia, Japan, and in the US.

ratings are subject to the local currency country risk ceilings, we do not separately account for deposit set-off exposure relating to insured deposits.

If a transaction or program involves assets in a country without a deposit-insurance scheme, or without an equivalent government guarantee, we assess deposit set-off risk on a case-by-case basis.

We also assess the extent to which other types of legal, regulatory or transaction mitigants can eliminate set-off risk. An example of a legal mitigant is the law in Spain that allows borrowers to set off only those unpaid installments that are due and payable prior to the relevant bank's insolvency, hence limiting the exposure at risk. In some jurisdictions, set-off risk may be mitigated by set-off waivers included in commercial loan agreements. In the US, this is generally the case, with such waivers typically being enforceable against commercial borrowers.

Examples of transaction mitigants include: (1) eligibility criteria excluding the sale of receivables associated with deposit set-off risk; (2) incremental reserves dedicated to cover deposit set-off losses; and (3) appropriate representations from transaction counterparties that set-off risk remains smaller than a specified threshold.

Finally, we consider the market environment and whether certain bank originators are subject to explicit bank resolution and recovery regimes. As an example, for banks in the European Economic Area that are subject to an operational resolution regime, in the event a regulator decides to bail-in deposits amongst the options that the regulator has available, we believe this may extinguish the legal right to set-off.[85] As and when information is made available by regulators, we will review it and likely factor it into our analysis.

Step 2: Analyze Pool Characteristics

In Step 2, we assess the type of portfolio being securitized or serving as a cover pool. For example, if the portfolio consists of a granular pool of retail obligors with secured loans (such as residential mortgage loans) and a deposit insurance protects retail deposits, the uncovered deposit balance is typically so small that upon a default of the bank, it is not a credit driver in our analysis. Therefore, we typically do not factor any incremental loss into our analysis for granular retail pools.

On an exception basis, we will continue to assess deposit set-off risk associated with portfolios containing a significant concentration of high net-worth individuals.[86] We may apply exceptions, for example when portfolios consist of residential mortgage loans offered in combination with deposit accounts leading to larger deposit balances for retail obligors. In such instances, we carry out our analysis as set forth in Steps 3 and 4.

If the portfolio contains corporates or corporate-like borrowers, or public sector entities, we determine the set-off exposure with regards to deposits in more detail (see Steps 3 and 4), as these deposits could be sizeable relative to the compensation limit, if applicable. While these borrowers may be more sophisticated than retail customers, and therefore may be even quicker to withdraw deposits from a troubled bank, the exposures at risk are usually larger and possibly more complex.

Step 3: Evaluate Deposit Set-Off Exposure

We generally determine deposit set-off exposure (G) as set forth in Formula 1. The run-off rate we assume for the analysis represents the proportion of obligors' deposits that we expect will be withdrawn before the originator defaults. For sophisticated obligors, i.e., corporates or public-sector entities – we assume a run-off

[85] In certain jurisdictions, depositors may raise other defenses to payment which may have substantially the same effect as set-off.

[86] We may apply this assumption also to certain pools with a strong concentration of professional landlords.

rate of 25%. For all other obligors, we assume a run-off rate of 15%, including for retail pools consisting primarily of high-net-worth individuals or containing primarily off-set mortgage products. We typically assume a recovery rate of 45%, resulting in a net exposure of 55%.

Exhibit 15 gives two illustrative examples[87] for two different types of borrowers.

FORMULA 1:

Deposit Set-off Exposure (in %):

$$G = (MAX(MIN(C \times (1\text{-}D) - B, A), 0) * E) / A$$

Where:

A: Receivable balance, e.g., securitized loan balance

B: Relevant compensation limit

C: An obligor's deposit balance(s)

D: Run-off rate (%), subject to the type of obligor; retail: 15%, corporate, SME, public sector: 25%

E: Loss from unsecured claim, typically 55%

EXHIBIT 15

Illustrative Examples of a Deposit Set-Off Exposure Calculation

Example	SME Loan	Loan to High Net Worth individual	Total
Receivable balance (A)	400,000	250,000	650,000
Deposit insurance?	Yes	Yes	
Compensation limit (B)	100,000	100,000	
Deposit balance (C)	150,000	125,000	
Run-off rate (D)	25%	15%	
Loss from unsecured claim (E)	55%	55%	
Calculation (amount) (F)		$F = MAX(MIN(C \times (1\text{-}D) - B, A), 0) \times E$	
Deposit Set-off exposure (amount)	6,875	3,438	10,313
Calculation (%) (G)		$G = F / A$	
Deposit Set-off exposure (in %)	1.7%	1.4%	1.6%

Source: Moody's Investors Service

In the event obligor-by-obligor deposit information is not available at closing, we estimate the uninsured proportion of the aggregate deposit amount. For depositors that are either corporate or public sector entities we typically assume that at least 50% of the aggregate deposits amount is uninsured. In the limited instances in which we assess, for example, deposit set-off related to retail pools containing off-set mortgages with large deposit balances, we generally assume an uninsured portion of 10% to 20% of the aggregate deposit amount.

For transactions in which the deposit set-off exposure is less than 1.5% of the portfolio balance, we assume the risk is not a credit driver, and therefore we will not proceed with Step 4. For the other transactions, we incorporate the incremental loss in our analysis as described below.

[87] These and other examples included throughout this report are illustrative in nature, are not representative nor exhaustive.

Step 4: Consider Incremental Expected Set-off Loss in Credit Analysis

In the last step for structured finance transactions,[88] we typically determine the expected incremental loss in consideration of both the deposit set-off exposure (see Step 3) and the probability of set-off occurring. For this purpose, we use the probability of default that is inherent in the rating of the originator.[89] On the other hand, if the credit quality of the originator is unknown, we typically would assume that the probability of set-off occurrence was 100% in calculating the incremental expected loss.

7.2. Other Set-Off Risks

Structured finance transactions and covered bonds could also be exposed to set-off risk arising from contractual claims other than deposits. In such cases, we will also evaluate mitigating factors and, if considered insufficient, determine any expected incremental loss from set-off.

Corporate or public sector entities in particular may have claims against the originating bank under various contracts, such as derivative or investments of funds in non-depositary instruments. Where set-off exposure in relation to such claims together with deposit set-off exceeds 1.5% of the portfolio balance at closing (after accounting for any applicable mitigants), we account for the incremental loss as described in section 7.1.

In some markets, borrowers may also enter in insurance contracts in connection with a financing arrangement. Set-off risk could arise if the insurance provider were to default. In contrast to set-off risks in other types of transactions, insurance-related set-off risk could increase sizably throughout the life of a transaction. This is, for example, the case where borrowers indirectly amortize their loans through making periodic premium payments to a life insurance contract.[90]

When an originator securitizes a portfolio that contains loans to employees, we analyze the exposure that is at risk when the originator defaults on a case-by-case basis. If a transaction were to include employee loans exclusively or in a sizable amount, we would consider scenarios including an originator default to size incremental losses such a transaction may suffer.

8. Monitoring

We generally apply the key components of the approaches described in this methodology when monitoring structured finance transactions and, to the extent applicable, covered bond programs, including historical performance and experience, except for those elements of the methodology that could be less relevant over time.[91]

» **References to Ratings and Rating Triggers:** While we commonly measure the credit quality of relevant transaction parties to assess the counterparty risks inherent to a structured finance transaction, or when relevant, covered bond program as stated in this approach, we consider in our monitoring analysis various sources for credit and counterparty information. We may rely on market information and practices for example for seasoned transactions where transaction documentation may describe

[88] This step is not relevant for covered bond analysis as the default probability of the bank is already taken into account in the covered bond analysis.

[89] See section 2.2 and Appendix 1 for details.

[90] See Appendix 9 for details.

[91] 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.

counterparty roles and credit related criteria more generically. In other instances, where transaction parties are not explicitly named, we may periodically confirm key roles with certain available parties such as trustees (see section 2.2).

» Swap Counterparty Exposures: We typically monitor, when applicable, changes that may affect the expected loss to investors relating to the risk of becoming unhedged (see section 3).

» Operational Risk: Our durability assessment of a servicer may change throughout the life of a transaction. A more detailed review of the mitigants available in a transaction may be prompted by a change to our durability assessment. More generically, a material change in any relevant transaction feature that affects our financial disruption risk analysis leads to a more detailed assessment and revised results will be evaluated as part of our analytical processes (see section 4).

» Commingling Risk: A change in the relevant legal environment may lead us to review the global assumptions we apply to determine commingling risk in structured finance transactions. When a servicer is, for example, downgraded to a rating level of Baa3 or lower during the life of a transaction, we will typically assess an expected commingling loss and its effect on outstanding rated securities. If a servicer is upgraded to Baa2 or higher, we will commonly stop factoring into our rating analysis the incremental expected commingling if based on a 1-month commingling loss assumption (see section 5).

» Risks Related to Account Banks and Investments: When account banks are named parties to a transaction, we commonly monitor changes to their ratings and the impact of those rating changes on transfer triggers and other conditions. When account banks are not named parties, where possible, we generally analyze the account bank risk based on the account bank requirements described in the transaction documents or other sources of information. For temporary investments, we rely on the investment criteria, where applicable. Generally, we assess through time whether and to what extent a rating cap applies and re-evaluate the threshold and rating cap analysis, when relevant (see section 6).

» Set-off Risk: When the legal or market environment changes (including changes to deposit insurance schemes) we may be prompted to review our global assumptions relating to deposit set-off. Particularly, for a portfolio of corporate borrowers for which the deposit set-off exposure was assessed at closing to exceed 1.5%, we typically assume the exposure will remain constant as a percentage of the outstanding portfolio throughout the life of the transaction. When the information is available, we may undertake a periodic review of revolving transactions if the transaction documentation does not limit the deposit set-off or other set-off exposures (see section 7).

Appendix 1: References to Ratings and Rating Triggers

(See section 2.2, References to Ratings and Rating Triggers)

A) References to Ratings and Rating Trigger Levels Relating to Swap Counterparty Exposures

1) Subject to paragraph A) 2. below, each reference in this approach to a swap rating trigger level or the rating of a swap counterparty or guarantor refers to a CR assessment.

   When a reference in this approach to a swap rating trigger level refers to CR assessment, we give the same value to a trigger[92] that refers to a senior unsecured debt rating (or equivalent monitored rating) or deposit rating. [93]

   If an entity does not have a CR assessment, we will use the best alternative proxy, which may, for example, derive from that entity's senior unsecured debt rating (or equivalent) or, its deposit rating.

2) By way of exception to paragraph A) 1. above:[94]

   a) if both (i) the swap counterparty is the sponsor or belongs to the same corporate group as the sponsor, and (ii) the swap counterparty's obligations are not likely to be fully collateralized (see below), each reference to a swap rating trigger level refers to a senior unsecured debt rating (or equivalent monitored rating), and each reference to the rating of the swap counterparty refers to the senior unsecured debt rating (or equivalent) of the swap counterparty, and

   b) if both (i) the guarantor (if applicable) is the sponsor or belongs to the same corporate group as the sponsor, and (ii) the swap counterparty's obligations are not likely to be fully collateralized (see below), each reference to a swap rating trigger level refers to a senior unsecured debt rating (or equivalent monitored rating) and each reference to the rating of the guarantor refers to the senior unsecured debt rating (or equivalent) of the guarantor.

For the purpose of this paragraph A) 2., we typically assume that a swap counterparty's obligations are likely to be fully collateralized if there is a "collateral trigger"[95] set at Baa2 or above, regardless of whether such trigger relates to a CR assessment or senior unsecured rating (or equivalent monitored rating).

B) References to Ratings and Rating Trigger Levels Relating to Other Counterparty-Related Risks

1) References to the rating of a bank in its capacity as servicer, service provider, paying agent or trust account provider commonly refer to the CR assessment of that entity;

2) References to the rating of a bank in its capacity as deposit taker typically refer to the deposit rating of that entity;

[92] That is, transfer and collateral triggers (as defined in note 2 of the Step 1 Detailed Notes in Appendix 2) that track the rating of a swap counterparty and/or guarantor.

[93] By way of example, if a counterparty has a CR Assessment of A2 and a transfer trigger is set at loss of A3, the trigger contributes a notching uplift of two notches (giving a Aa3 probability of becoming unhedged, assuming no other uplifts), regardless of whether the trigger in the transaction documentation references the counterparty's senior unsecured debt rating or its CR Assessment. This applies prior to the breach of the trigger and would be reassessed if the remedies to the trigger are not executed.

[94] This exception does not apply if the swap counterparty's obligations cannot be subject to bail-in upon resolution of the swap counterparty.

[95] As defined in note 2 of the Step 1 Detailed Notes in Appendix 2.

3) In limited circumstances, such as non-deposit related set-off risks, references to the rating of the originator typically refer to the senior unsecured debt rating (or equivalent) of that entity,[96] or in the case of covered bonds the CR assessment of the bank supporting the covered bonds;

4) By way of exception to paragraph B) 1. above, if an entity does not have a CR assessment, we will use the best alternative proxy which we may for example derive from that entity's senior unsecured debt rating (or equivalent), or, in some cases, its deposit rating (or equivalent);

5) By way of exception to paragraph B) 2. above, if a deposit taker does not have a deposit rating, we will use the best alternative proxy, which we may for example derive from that entity's senior unsecured debt rating (or equivalent);

6) We give the same value for account bank rating triggers inserted by issuers in their deal documentation that reference senior unsecured debt ratings as for those that track deposit ratings;[97] and

7) We give the same value for rating triggers inserted by issuers in their deal documentation that reference senior unsecured debt ratings or deposit ratings as for those that track CR assessments.

In circumstances in which there is no rating available for a transaction party, we may use alternative measures to assess the transaction party's credit quality, such as:

» **Branch of a rated entity:** We may infer the rating for a branch from the rated entity. Our determination considers several elements such as the credit quality of the sovereign where the branch is located, possible rating caps in relation to local and foreign currency Country Risk Ceilings, or the regulatory regime a branch may be subject to.

» **Subsidiary of rated entity:** When assessing operational, set-off or commingling risks, with the input from the relevant analytical teams, we may determine that the credit quality of an unrated originator or servicer is the same as that of its majority shareholder. Among other things, our analysis may include in such case qualitative factors as well as quantitative factors such as whether or not the entity is consolidated or financially supported by its rated parent. Our approach does not imply that we have a rating or credit estimate for the subsidiary. We only assess the likelihood that a subsidiary will continue to perform its role and function.

» **Other relationships such as joint ventures or partnerships:** If such arrangements apply to originators or servicers, we examine the facts on a case-by-case basis to determine if the unrated transaction party is likely to receive the support of a rated entity.

» **Credit estimates:** If a rating is not available, we may consider a credit estimate.[98]

» **Additional alternative measure:** When assessing commingling or set-off risk associated to a servicer or originator for which none of the above alternative measures apply, we typically assume a credit quality commensurate with B3 for banks[99] and Caa2 for non-banks.[100]

[96] In instances where we assess non-deposit set-off risks, we may sometimes use the CR assessment of an entity as reference or the insurance financial strength rating if the risk relates to an insurance company.

[97] By way of example, if an account bank has a deposit rating of A2 and a transfer trigger is set at loss of A2, the account bank risk is mitigated resulting in a rating of Aaa, regardless of whether the trigger in the transaction documentation references the account bank's senior unsecured debt rating or its deposit rating. This applies prior to the breach of the transfer trigger; we would reassess the value of the trigger if the remedies to the trigger breach are not executed.

[98] See our approach to credit estimates in the Moody's Related Publications section at the end of this report for details.

[99] Provided that (1) the bank is located in a country with an investment-grade rated government, (2) the bank is not subject to bankruptcy or resolution and (3) the bank's most recent rating or credit estimate (if any) was B3 or above. If any of these conditions are not satisfied, we typically use Caa2.

[100] The determination whether the entity is a bank or non-bank is typically made during the initial rating assignment.

Appendix 2: Swap - Detailed Notes

(See section 3, Swap Counterparty Exposures for background)

Step 1 Detailed Notes: Probability of Becoming Unhedged

1) We express the probability of becoming unhedged as a rating derived by applying a notching uplift to the rating of the counterparty (or guarantor).[101] If the probability of becoming unhedged is Aaa, swap linkage generally has no present rating impact and Steps 2-4 do not apply.[102]

2) "Transfer trigger" refers to the lowest rating at which the counterparty is not required[103] to take steps to transfer the swap to or obtain a guarantee (or equivalent) from an entity rated at least as high as the transfer trigger level. "Collateral trigger" refers to the lowest rating at which the counterparty is not required to post collateral pursuant to the relevant collateral provisions.[104]

3) Transfer triggers in the single A range (or higher) contribute two notches to the notching uplift, and transfer triggers set at Baa1 contribute one notch. We give no value to transfer triggers set below Baa1.

4) The value of collateral triggers depends on both the trigger level and the amount of collateral the counterparty will post.

   In this report (1) "original collateral provisions" and "enhanced collateral provisions" mean the corresponding collateral formulas in Appendix 3; and (2) "alternative collateral provisions" means any other formulas giving a collateral amount no less than the MTM of the swap, in each case combined with the valuation percentages in Appendix 3.[105] We generally give no value to any other collateral provisions.

   Collateral triggers set at A3 or above contribute one, two or three notches to the notching uplift when combined with alternative, original or enhanced collateral provisions, respectively.[106] A trigger set at Baa1 or Baa2 contributes one notch less than if it were set at A3, provided that a Baa2 collateral trigger cannot contribute more than one notch. We generally give no value to collateral triggers set below Baa2.

   Once a collateral posting period commences,[107] we determine the notching uplift as if the collateral trigger had been set at A3 or above, regardless of the actual trigger level.

5) We give no value to rating triggers that are defined by reference to the rating of the notes from time to time.

6) If we are satisfied there is a good prospect of a swap being out-the-money (OTM) for the issuer at the time of becoming unhedged, we may increase the overall notching uplift by one notch on the basis that an issuer will not need any collateral to replace a defaulting OTM swap. Where the counterparty (or

[101] See note 13 of the Step 1 Detailed Notes.

[102] By way of exception, if the loss resulting from becoming unhedged will exceed 50% of the relevant tranche, swap linkage may have a rating impact on Aaa notes even if the probability of becoming unhedged is Aaa. We assess this on a case-by-case basis considering all relevant factors, including the strength of the Aaa rating before accounting for linkage.

[103] Remedial action is deemed to be 'required' if failure to take it would result in an Additional Termination Event or an Event of Default.

[104] If there are multiple collateral triggers, we reference the trigger that results in the highest notching uplift.

[105] The collateral formulas in Appendix 3 are applicable for the same currencies that are covered by the Step 2 Table (see note 6 of the Step 2 Detailed Notes).

[106] We assume a trigger has no value if the required collateral amount may be less than the mark-to-market value.

[107] A posting period commences when (1) the grace period in the CSA has expired, and (2) the counterparty has posted collateral or there are no remaining operational hurdles (such as need to open a collateral account or execute a CSA) to the counterparty posting collateral as soon as it is required to.

guarantor)[108] is rated A3 or above, we generally apply this uplift even if the swap is presently in the money (ITM) for the issuer.

7) If the swap documents are not substantially consistent with the linkage-related provisions of the model swap framework in Appendix 4 (disregarding the collateral formulas and valuation percentages, which are separately addressed in note 4 above), we generally reduce the notching uplift attributable to the relevant rating trigger by one notch.[109] If the inconsistencies relate to the effectiveness of both transfer and collateral triggers, we apply a one notch haircut to the transfer trigger only (unless the transfer trigger uplift is already zero, in which case we apply a one notch haircut to the collateral trigger).

   Substantial consistency with the model swap framework can be achieved notwithstanding inconsistencies with a limited number of the peripheral criteria. Examples of features that generally prevent substantial consistency include: (1) no executed credit support annex; (2) departure from trigger-related additional termination events and events of default; (3) departure from the "Exposure" definition modifications; (4) transfer obligations that are limited in time or set to standard lower than commercially reasonable efforts; and (5) departure from close-out calculation modifications.[110]

8) We generally assume that, promptly following the breach of a collateral trigger, the issuer will ensure it has a collateral account that is either (1) provided by the counterparty with an effective account transfer trigger set at A3 or above;[111] (2) provided by a third party bank rated at least A3; or (3) effectively ring-fenced for the benefit of the issuer.[112] If we are not able to verify this assumption or the collateral account bank is downgraded below A3, we generally reduce the notching uplift for collateral to zero, unless the account bank is a third party financial institution rated Baa1-Baa3 (in which case we reduce the collateral notching uplift by one notch).

9) In some instances, the MTM of a swap is sensitive to the likelihood that the issuer will exercise an option to prepay the notes on an anticipated repayment date (ARD). The likelihood of exercise will generally depend on the ability of the originator to repurchase securitized assets from the issuer. Therefore, should the originator default, the MTM of the swap is likely to increase. If the originator and the counterparty are the same entity, this increase in MTM will occur just as the issuer begins its search for a new counterparty, such that any collateral posted by the counterparty prior to its default may well be insufficient to pay for a replacement swap. In these circumstances – that is, where (1) there is an ARD and the MTM of the swap is sensitive to the likelihood of repayment on the ARD;[113] (2) the swap is provided by the originator;[114] and (3) the issuer needs to sell its assets back to the originator in order to effect early repayment – we generally give no value to collateral posting provisions unless the CSA provides that, for the purpose of determining the required collateral amount, the option is deemed not to exist.

10) In some instances, a swap counterparty may be entitled to transfer its rights and obligations to another entity without requiring the issuer's consent at the relevant time.[115] This can result in a swap being

[108] Unless automatic termination applies - see note 12 of the Step 1 Detailed Notes.

[109] Inconsistencies with provisions in the model swap framework that do not relate to counterparty linkage (see Appendix 4) are not relevant for the purpose of Step 1 but may otherwise impact the rating of the notes. Inconsistencies relating to the counterparty's right to transfer and automatic termination are not relevant to note 7 and are separately addressed in notes 10 and 12 of the Step 1 Detailed Notes.

[110] Departure from close-out calculation modifications does not, of itself, result in a one notch haircut under note 7 if the alternative collateral provisions apply (or are deemed to apply by virtue of notes 11 or 12 of the Step 1 Detailed Notes).

[111] We categorize an account transfer trigger as "effective" if we believe that, upon the loss by a bank of a predetermined rating, replacement of the bank will take place in a timely manner.

[112] We generally treat collateral as ring-fenced for the benefit of the issuer if, in the event the account provider becomes bankrupt, it will not form part of the bankruptcy estate and will be released to the issuer without material delay.

[113] For example, where the swap notional will fall to zero upon repayment of the notes without a corresponding MTM payment.

[114] If the issuer depends on an entity other than the originator to finance repayment of the notes on the ARD, all references to 'originator' in this note 9 are to be read as references to such entity.

[115] The right to transfer without issuer consent may be conferred by contract or, in some jurisdictions, by operation of bankruptcy law.

transferred to a new counterparty that is rated lower than the outgoing counterparty. If a counterparty that is rated Aa3 or above has a contractual right to transfer at any time without issuer consent, we generally apply a one notch downward adjustment to the counterparty rating when determining the probability of becoming unhedged.[116] A right of unilateral transfer may also have other negative consequences for the issuer.[117]

11) If the swap counterparty is the security trustee (or equivalent), the swap replacement process following counterparty default may take an unusually long time (due to administrative delays),[118] exposing the transaction to a material risk that the cost of replacement will exceed the amount of posted collateral. Therefore, in these circumstances, we generally determine the value of collateral as if the alternative collateral provisions apply, regardless of which collateral provisions are actually used.

12) If automatic swap termination applies – either by operation of law or contract – upon insolvency of a counterparty, any termination payment payable to the issuer will generally be fixed by reference to the MTM of the swap at the time the counterparty becomes insolvent. Therefore, the amount of collateral available to pay for a replacement swap (or the amount received from a guarantor of the counterparty) will be capped at the MTM of the swap at the time of automatic termination, and will be insufficient to pay for a replacement swap should the MTM increase by the time a new counterparty is found. For this reason, if a swap is subject to automatic early termination, we determine the value of the collateral trigger as if the alternative collateral provisions apply, regardless of which collateral provisions are actually used.

    In addition, if automatic termination applies and there is no flip clause[119] or there is material legal uncertainty regarding the validity of flip clauses in the relevant jurisdiction, the issuer may be exposed to (1) movements in the MTM of the swap during the period between automatic termination and replacement of the swap even if it is then OTM for the issuer; and (2) an additional liquidity risk[120] (by reason of a potential senior ranking termination payment), each to be assessed on a case-by-case basis. Additional considerations apply for guaranteed swaps that are subject to automatic termination.[121]

13) If a swap counterparty's payment obligations are unconditionally guaranteed (or there is a standby swap arrangement),[122] the notching uplift is applied to the highest of (1) the rating of the guarantor (or standby provider); and (2) the rating of the counterparty.

[116] We may also apply this adjustment if (1) there is a guarantor (or standby provider) that is rated Aa3 or above, (2) automatic termination does not apply; and (3) the counterparty has a contractual right to transfer at any time without issuer consent.

[117] If a swap counterparty defaults, the issuer will typically not be required to pay any amounts ('unpaid amounts') under the swap so long as the default continues (Section 2(a)(iii) of the ISDA Master Agreement). In this situation, there may be a risk that (1) any cash that the issuer would otherwise have used to make swap payments flows down the waterfall and is lost to the transaction; (2) the defaulted counterparty eventually exercises its right to transfer the swap to another counterparty, thereby curing the default and causing the aggregate amount of unpaid amounts to fall payable by the issuer to the new counterparty as a lump sum; and (3) the issuer is unable to pay this lump sum in a timely manner, such that it becomes a defaulting party and may be required to make a senior ranking termination payment. We note that this risk has not previously materialized in relation to defaulting structured finance swaps - issuers have either (1) continued making swap payments to defaulting counterparties; (2) escrowed their unpaid amounts; or (3) taken steps to replace defaulting swaps themselves. Nevertheless, if a counterparty with a right of transfer defaults and an issuer that is OTM does not take one of these actions, we may account for the risk in our rating analysis.

[118] As observed in relation to certain defaulting swaps provided to European CMBS transactions, for which the replacement process was generally around one year.

[119] A flip clause is a provision that subordinates any swap termination payment owed by an issuer to a defaulting counterparty. (For swaps that are not subject to automatic termination, the absence of a flip clause (or uncertainty as to whether a flip clause is legally enforceable) generally does not have rating significance. If an issuer is OTM under a defaulting swap then, unless there is legal certainty that the termination payment will be subordinated, we do not expect it will choose to terminate the swap without first entering into a replacement swap. Upon entering into a replacement swap, we expect the issuer will simultaneously terminate the old swap and receive a premium payment from the new counterparty to cover the market value component of its termination payment to the defaulting counterparty.)

[120] See note 3 of the Step 4 Detailed Notes.

[121] If a guaranteed swap is subject to automatic termination, the notching uplift is applied to the rating of the counterparty rather than the guarantor. For such a swap, we generally give no benefit to any transfer trigger tracking the rating of the guarantor since the swap may well terminate before it is breached. However, we generally do give benefit to any collateral trigger (subject to notes 12 and 13 of the Step 1 Detailed Notes), provided the guarantee covers any termination payment (including payments by operation of law, if applicable) following automatic termination.

[122] In a typical standby swap arrangement, the standby swap provider either (1) agrees to replace the original swap counterparty (by way of novation) upon the default of the original counterparty; or (2) enters into a separate swap with the issuer that is on substantially the same terms as the original swap and becomes effective upon the default of the original counterparty.

If (1) the counterparty and the guarantor (or standby provider) are not connected; and (2) both the counterparty and guarantor (or standby provider) are rated at least Ba3, we generally reflect the benefit of joint support by applying an additional uplift of one notch (if the lowest rating is in the Ba range) or two notches (if the lowest rating is investment grade).

If a guarantee does not cover the counterparty's obligation to take remedial action following a trigger breach, we generally give no value to the relevant trigger.[123] However, if the counterparty is wholly owned by the guarantor and is similarly named, and certain other conditions are met,[124] a rating trigger may contribute to the notching uplift above the guarantor's rating even if the obligation to take remedial action is not guaranteed.[125] In these circumstances, we generally account for the limited scope of the guarantee in accordance with note 7 above as if it constituted a substantial inconsistency with the model swap framework.

This note 13 does not apply to guaranteed swaps that are subject to automatic termination upon insolvency of the counterparty.[126]

EXHIBIT 16

Application of Step 1 to Guaranteed Swaps

By reference to the swap described in Exhibit 3, suppose:
» All the counterparty's swap obligations are unconditionally guaranteed
» The guarantor is rated A2
» The counterparty is wholly-owned by the guarantor and similarly names
The notching uplift in Exhibit 3 is three notches. Since the guarantor is rated higher than the counterparty, this uplift is applied to the rating of the guarantor, giving a probability of becoming unhedged of **Aa2**.
Now suppose the guarantee does not cover the counterparty's obligation to post collateral. Since the counterparty is wholly owned by the guarantor and similarly named, we still give value to the collateral trigger but haircut the applicable uplift by one notch, resulting in a probability of becoming unhedged of **Aa3**.
Suppose further that the counterparty is not connected to the guarantor. Given that the guarantee does not cover collateral posting, the collateral trigger now has no value. However, since the guarantor and counterparty are not connected and the counterparty is rated investment grade, we apply an additional two notch uplift to account for the benefit of joint support, resulting in a probability of becoming unhedged of **Aa2**.

Source: Moody's Investors Service

14) We generally assume that:

(i) once a counterparty is downgraded below a transfer trigger (1) it is likely to effect a transfer or guarantee to the extent it is able to do so; and (2) there is a good prospect that, within a reasonable time, it will be possible to find a replacement counterparty or guarantor that agrees to be bound by the same obligations (including any rating triggers) and does not require any material change to the issuer's obligations.

(ii) once a collateral trigger is breached, the parties will work together to promptly resolve any operational obstacles to posting collateral[127] and the counterparty will duly perform its collateral posting obligations to the extent it is able to do so.

[123] Unless the trigger tracks the rating of the counterparty only, in which case the presence of a guarantee has no effect on the corresponding uplift.

[124] Namely that (1) we are satisfied the guarantor can perform the relevant remedial actions and (2) in respect of collateral triggers, voluntary dispositions by solvent entities are not at risk of claw back in the relevant jurisdiction.

[125] On the basis that a parent may well be incentivised to support its subsidiary even if it is not obliged to do so.

[126] See note 12 of the Step 1 Detailed Notes.

[127] For example, by executing a CSA and opening a collateral account.

(iii) if a counterparty defaults, the issuer is very likely to find an investment grade-rated entity that is willing to provide a replacement swap, which (1) may or may not incorporate the same rating trigger provisions as the original swap, but otherwise replicates the material obligations of the defaulting counterparty; and (2) does not require any material change to the issuer's obligations.[128]

If any of the above assumptions is not (or ceases to be) sustainable,[129] we may reduce some or all of the notching uplifts described in notes 3, 4 and 6 above. In particular, we may reduce notching uplifts due to the application of swap margin rules or synthetic Libor, as described below.

Where the law of the issuer's home country provides that, should the swap counterparty be replaced, the replacement counterparty must collect margin from the issuer, we generally reduce each of the uplifts described in notes 3, 4 and 6 above to zero. Where the law of an issuer's home country does not require a replacement counterparty to collect margin from the issuer but the laws of multiple other countries require replacement counterparties within their jurisdiction to collect margin from that issuer, we may also reduce these uplifts, potentially to zero. If the requirement for a replacement counterparty to collect margin is dependent on the issuer, together with its affiliated group, having certain derivative exposures above a prescribed threshold, then, unless we are informed otherwise, we generally assume that (1) the threshold is not exceeded,[130] and (2) the issuer is consolidated with its sponsor.

If any swap payments are calculated by reference to synthetic Libor, we generally determine the notching uplift described in note 3 above as if the application of synthetic Libor constituted a substantial inconsistency with the transfer trigger-related provisions of the model swap framework, in accordance with note 7.

15) The linkage tables are only concerned with swaps that are relevant to the tranche of notes for which the impact of linkage is being assessed (relevant swaps).[131] In general, when assessing the effect of linkage on a particular tranche, any swap in relation to a lower ranking tranche is not a relevant swap.

In some instances, more than one relevant swap is provided by the same counterparty (or connected counterparties).[132] If these swaps are documented in separate agreements with different rating downgrade provisions, the respective probabilities of becoming unhedged may also be different. When assessing the rating impact of linkage, we adopt the most conservative of these probabilities of becoming unhedged.

If two unconnected counterparties provide relevant swaps and a default by one counterparty is not likely to result in a default by the issuer on its payment obligations to the other counterparty,[133] we determine separate probabilities of becoming unhedged in respect of each counterparty and combine

[128] The joint default probability for a counterparty and its investment grade replacement (being and independent entity) is sufficiently low so as not to materially affect the probability of becoming unhedged.

[129] For example, if a swap has features, such as providing credit support, that make it inherently less liquid.

[130] However, if the sponsor group includes financial entities, and derivative exposures of those entities are counted in the threshold calculation, we generally assume the group will exceed the threshold (subject to a consideration of the threshold level(s) that will apply during the life of the swap). By way of example, suppose a 10 year interest rate cap is provided to a US-based SPV that is consolidated with a financial entity. Under US margin rules that were implemented on 1 March 2017, a replacement cap provider would not be required to collect variation margin from the SPV but would be required to collect initial margin if the SPV, together with its affiliated group, has certain derivative exposures in excess of $8 billion. In such an example, we would generally assume that the threshold is exceeded and reduce the uplifts described in notes 3, 4 and 6 of the Step 1 Detailed Notes to zero.

[131] For the purpose of this report, a swap is relevant to a tranche only if that tranche may suffer a loss directly as a result of the transaction becoming unhedged. Indirect losses resulting from becoming unhedged (such as losses resulting from a switch to the post enforcement waterfall following a payment default on another tranche) are not addressed in this report but may be separately accounted for in our rating analysis.

[132] In some transactions, separate swaps for senior and junior tranches are provided by the same counterparty.

[133] In which case we adopt the most conservative of the relevant probabilities of becoming unhedged and apply Steps 3 and 4 as if the counterparties were connected.

them in the manner described in note 2 of the Step 4 Detailed Notes. If hedging is provided by more than two unconnected counterparties, we assess the impact of linkage on a case-by-case basis.

Step 2 Detailed Notes: Loss to Transaction If It Becomes Unhedged

1) The Step 2 Table gives the transaction loss amounts that we generally assume[134] in relation to benchmark swaps of various types and tenors.[135] It positions each of these swaps in one of nine loss categories ranging from 5% to 70% of the asset pool.[136]

2) For the purpose of the Step 2 Table, "tenor" generally means the WAL of all notes that (1) rank equal to or higher than the tranche under consideration; and (2) give rise to the exposure that is being hedged, taking account of prepayments and applicable amortization triggers (or, if different, the period over which the transaction is exposed to the relevant market risk).[137] If the tenor exceeds 20 years, the Step 2 Table does not apply and we assess the transaction loss on a case-by-case basis.

3) The Step 2 Table assumes that each benchmark swap relates to 100% of the asset pool. If a swap hedges market rate exposure in connection with a smaller portion of the asset pool, we generally reduce the transaction loss linearly.[138] For example, the transaction loss corresponding to a swap in connection with 50% of the asset pool equals 50% of the benchmark transaction loss.[139] If a relevant swap provides hedging for multiple tranches, we generally disregard any portion of the hedging that relates to tranches ranking lower than the tranche under consideration.

4) If a transaction is hedged by multiple swaps[140] provided by the same counterparty (or connected counterparties), we determine separate transaction loss amounts for each swap and add them together to obtain the aggregate transaction loss.

   If two unconnected counterparties provide relevant swaps, we determine a separate aggregate transaction loss amount for each of (1) the first counterparty's swaps; (2) the second counterparty's swaps; and (3) both counterparties' swaps.[141] If more than two unconnected counterparties provide relevant swaps, we assess the impact of linkage on a case-by-case basis.

   When summing the transaction losses for multiple swaps, we generally cap the aggregate transaction loss at 70%.

[134] Given that the Step 2 Table is calibrated to a very high confidence level, we may assume a reduced transaction loss amount for non-investment grade tranches on a case-by-case basis. Any such reduction will be effected by multiplying the applicable Step 2 Table output by approximately 50%. If we modify the Step 2 Table output in this manner, we will generally not use the Step 3 Table and shall instead determine the tranche loss amount in accordance with either note 6 or note 9 of the Step 3 Detailed Notes.

[135] For the purpose of the Step 2 Table, we generally consider that caps are equivalent to fixed floating swaps.

[136] "Asset pool" means the assets that will be applied down the applicable waterfall of payments and may benefit the relevant tranche. By way of example, if US$100 of assets is shared between two issuers in the ratio of 1:3, the asset pool in respect of each issuer is US$25 and US$75, respectively.

[137] For example, (1) if a fixed floating swap is provided in connection with fixed rate mortgage loans, the tenor of the swap will not exceed the weighted average fixed rate period (or reset period) for those loans; and (2) for revolving transactions, the 'tenor' includes the revolving period (unless counterparty default is an early amortisation trigger).

[138] By way of exception, for cross currency swaps that are not isolated loss swaps (see note 7 of the Step 3 Detailed Notes): If (1) all assets in the asset pool are denominated in the same currency; and (2) the relevant hedging (excluding any portion relating to lower ranking tranches) relates to less than all of the asset pool, we generally calculate the transaction loss as: S*L/(S*L+1-L), where L = the Step 2 Table % and S = % of asset pool to be exchanged under the swap. If the asset pool consists of assets denominated in different currencies and either (1) noteholders may be exposed to movements in multiple currency pairs; or (2) the relevant hedging (excluding any portion relating to lower ranking tranches) involves an exchange of less than all the assets in the relevant currency, we determine the transaction loss on a case-by-case basis.

[139] If a swap relates to a portion of the asset pool that is denominated in a foreign currency, we adjust the transaction loss according to the amount of such foreign currency assets (converted to the base asset currency using the swap rate) as a percentage of the total asset pool.

[140] For example, where a cross currency swap is combined with a basis or fixed floating swap.

[141] See further note 10 of the Step 3 Detailed Notes.

EXHIBIT 17

Determining the Aggregate Transaction Loss For Multiple Swaps

Supposed two swaps provided by the same company:
» Swap A: 10 year fixed-floating swap hedging 100% of the asset pool
» Swap B: 10 year cross-currency swap hedging 50% of the asset pool
First determine the transaction loss for each swap individually:
» Transaction loss Swap A: Cat 5 (i.e., 30%)
» Transaction loss Swap B: Cat 8 (i.e., 60%) * 50% = 30% (Cat 5)
Then sum the transaction losses:
» 30% + 30% = **60%**
Now suppose a third swap that contributes a transaction loss of more than 10%. In this case, we cap the aggregate transaction loss at **70%**.

Source: Moody's Investors Service

5) The Step 2 Table assumes a present MTM value close to zero. If a particular swap is or becomes materially OTM for the issuer, we may adjust the loss category downwards.

   If collateral contributes at least one notch to the uplift determined in Step 1,[142] we generally do not adjust the loss category by reason of the swap being or becoming ITM for the issuer - that exposure should be covered by collateral. Otherwise, we may adjust the loss category upwards.

6) The Step 2 Table applies to swaps involving payments denominated in the following currencies:

   – Basis swaps: British pounds, Swiss francs, US dollars, euro, Japanese yen, Mexican pesos, Norwegian krone, Swedish krona, Australian dollars and Singaporean dollars.

   – Fixed-floating swaps: British pounds, Swiss francs, US dollars, euro, Japanese yen, Australian dollars, New Zealand dollars, Korean won, Mexican pesos, Brazilian real, Norwegian krone, Swedish krona, Singaporean dollars, and Hong Kong dollars.[143]

   – Cross-currency swaps: British pounds, Swiss francs, US dollars, euro, Japanese yen, Australian dollars, Korean won, Mexican pesos, Brazilian real, New Zealand dollars, Hong Kong dollars, Norwegian krone, Swedish krona and Singaporean dollars.

   If payments are denominated in a different currency, we determine the transaction loss on a case-by-case basis.

7) For the purpose of the Step 2 Table, "basis swaps" means swaps referencing the following indices: Libor, Euribor, Nibor, Stibor, TIIE (Mexico), Sibor, Singapore Swap Offer Rate, Bank of England Base Rate, Standard Variable Rates, Fed Fund Rates, Short Term US treasury Rates, US Prime rate, JPY Short-Term Prime rate, JPY Long-Term Prime rate, BBSW, SONIA, SOFR, EONIA, €STR, AONIA, TONAR and SARON. We determine the transaction loss for other basis swaps on a case-by-case basis.

8) The Step 2 Table applies regardless of whether a swap is balance guaranteed. However, it does not apply to swaps with embedded optionality (other than caps),[144] for which we assess the related transaction loss on a case-by-case basis.

[142] After accounting for any relevant adjustments to the collateral uplift in accordance with the Step 1 Detailed Notes (other than any adjustment under note 7 and any adjustment under note 14 in connection with margining requirements).

[143] The Step 2 Table covers fixed-floating swaps that reference generally accepted interest rate benchmarks in these currencies, including so-called risk-free rates.

[144] For the purpose of the Step 2 Table, we generally consider that caps are equivalent to fixed floating swaps.

EXHIBIT 18

Using the Step 3 Table

Suppose:
» Total credit enhancement is 25%, comprising 15% subordination and 10% cash reserves
» The amount of enhancement required to maintain the tranche rating is 15%
» Cash reserves are not available to reduce losses resulting from becoming unhedged
» Transaction loss from Step 2 is Cat 5 (30%)
Available surplus enhancement equals 10%, being the lesser of (1) total enhancement less required enhancement (10%); and (2) the amount of total enhancement that is available to reduce losses resulting from becoming unhedged (15%).
Applicable column in Step 3 Table is Cat 4 (20%), calculated as the transaction loss from Step 2 (30%) less available surplus enhancement (10%).
Available credit enhancement is 5%, calculated as total enhancement (25%) less unavailable enhancement (10%) less available surplus enhancement (10%).
Hence, the tranche loss given by the Step 3 Table is **TL8**.

Source: Moody's Investors Service

Step 3 Detailed Notes: Loss to Tranche If Transaction Becomes Unhedged

1) The Step 3 Table gives the tranche-specific loss resulting from becoming unhedged (the tranche loss) for various combinations of transaction loss (from Step 2) and available credit enhancement.

2) The Step 3 Table tranche loss amounts (as percentages of the tranche) are: TL1 - 0.005%; TL2 - 0.02%; TL3 - 0.075%; TL4 - 0.175%; TL5 - 0.4%; TL6 - 1.5%; TL7 - 4%; TL8 - 8%; TL9 - 12%; TL10 - 16%; TL11 - 20%; TL12 - 32%; TL13 - 50%.

   The table is calibrated for tranche sizes that are around 80% of the asset pool. If the size of the relevant tranche (taken together with any *pro rata* ranking notes[145]) is smaller than 80%, we scale-up the tranche loss accordingly.[146]

3) For the purpose of the Step 3 Table, "available credit enhancement" means (1) the aggregate amount of over-collateralization, subordination and reserves[147] benefitting the relevant tranche (the total credit enhancement);[148] less (2) any amount of the total credit enhancement that is not available to reduce losses to that tranche resulting from becoming unhedged;[149] less (3) any available surplus enhancement that serves to reduce the transaction loss in accordance with note 4 below, all expressed as a percentage of the asset pool. If the available credit enhancement is ≤1%, the Step 3 Table cannot be used and the tranche loss is determined in accordance with note 6 below.

4) The applicable column in the Step 3 Table is generally obtained by matching the transaction loss from Step 2 minus any available surplus enhancement (the net transaction loss) to the nearest transaction loss category (if necessary, rounding up to the next highest loss category).[150]

[145] If there is a trigger to switch from *pro rata* to sequential payment or *vice versa*, we determine whether notes rank *pro rata* on a case-by-case basis. This includes an assessment of when the switch will take place.

[146] The scaled-up tranche loss is given by 80%/S * Step 3 Table tranche loss, where S is the relevant tranche size expressed as a percentage of the asset pool.

[147] For any reserve account that is held with the swap counterparty, we generally assume that the issuer will recover 45% of the account balance following swap counterparty default; however, if there is an effective account transfer trigger set at A3 or above, we may give value to the full account balance as "available credit enhancement" (we categorize an account transfer trigger as "effective" if we believe that, upon the loss by a bank of a predetermined rating, replacement of the bank will take place in a timely manner).

[148] In some structures, there may be other forms of credit enhancement that are available to offset swap related losses. We will evaluate these on a case-by-case basis.

[149] If there is a trigger to switch from *pro rata* to sequential payment or *vice versa*, we determine the available subordination on a case-by-case basis. This includes an assessment of when the switch will take place.

[150] The Step 3 Table is not used for isolated loss swaps - see note 7 of the Step 3 Detailed Notes. If any isolated loss swaps are provided together with one or more other relevant swaps then, for the purpose of determining the net transaction loss, we deduct the total transaction loss for the isolated loss swaps from the aggregate transaction loss determined in accordance with note 4 of the Step 2 Detailed Notes. We then deduct any available surplus enhancement.

The "available surplus enhancement" is the lesser of (1) the amount by which the total credit enhancement benefitting the relevant tranche exceeds the aggregate amount of overcollateralization, subordination and reserves that would result in the tranche having an expected loss (without accounting for swap linkage) that is equal to the Idealized Expected Loss[151] associated with its rating (without accounting for swap linkage);[152] and (2) the amount of the total credit enhancement that is available to reduce losses to that tranche resulting from becoming unhedged.

If, as a result of this note 4, the linkage-adjusted rating for any tranche would be negatively affected by the existence of available surplus enhancement, we determine the tranche loss as if the available surplus enhancement were zero.

Alternatively, we may account for the presence of available surplus enhancement by determining the tranche loss in accordance with note 9 below.

5) Excess spread is generally not counted as available credit enhancement for the Step 3 Table. However, if the cumulative excess spread[153] is less than 3% and the available credit enhancement is >5% and ≤10%, the >1% and ≤5% row is deemed to apply. If the cumulative excess spread is less than 3% and the available credit enhancement is ≤5%, the Step 3 Table is not applicable and we determine the tranche loss in accordance with note 6 below.

6) If the Step 3 Table cannot be used, for example due to insufficient available credit enhancement or excess spread, then, subject to note 7 below, the tranche loss equals the net transaction loss (see note 4 above), converted to a percentage of the relevant tranche (taken together with any *pro rata* ranking notes[154]). Alternatively, we may determine the tranche loss in accordance with note 9 below.

7) The Step 3 Table is not used for isolated loss swaps. An "isolated loss swap" is a swap in respect of which the corresponding transaction loss resulting from becoming unhedged will be fully borne by the relevant tranche, regardless of any credit enhancement that may be available to the tranche in connection with other losses.

   If there are any isolated loss swaps and no other relevant swaps, the tranche loss equals the total transaction loss for the isolated loss swap(s), converted to a percentage of the relevant tranche.[155]

   If there are any isolated loss swaps in addition to one or more other relevant swaps for which the Step 3 Table is used, the total tranche loss equals (1) the total transaction loss for the isolated loss swaps, converted to a percentage of the relevant tranche;[156] plus (2) the tranche loss given by the Step 3 Table (see note 2 above).

   If there are any isolated loss swaps in addition to one or more other relevant swaps for which the Step 3 Table cannot be used due to insufficient available credit enhancement or excess spread, the total tranche loss equals (1) the total transaction loss for the isolated loss swaps, converted to a

[151] Please see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report for more details.

[152] The term "without accounting for swap linkage" means after accounting for all other factors (including any applicable loss benchmarks for the underlying asset class) that may impact the expected loss or rating of the relevant tranche, but before the application of any rating caps contemplated by our rating methodologies.

[153] Calculated as the annual excess spread (excluding any excess spread provided by the swap) multiplied by the WAL of the asset pool. For this purpose, we use the relevant forward curves to estimate future floating rates.

[154] If there is a trigger to switch from *pro rata* to sequential payment or *vice versa*, we determine whether notes rank *pro rata* on a case-by-case basis. This includes an assessment of when the switch will take place.

[155] For this purpose, the tranche size equals the aggregate of the swap sizes for the isolated loss swaps, as referenced in note 3 of the Step 2 Detailed Notes.

[156] For this purpose, the tranche size equals the aggregate of the swap sizes for the isolated loss swaps, as referenced in note 3 of the Step 2 Detailed Notes.

percentage of the relevant tranche;[157] plus (2) the net transaction loss (see note 4 above) converted to a percentage of the relevant tranche (taken together with any *pro rata* ranking notes[158]).

Alternatively, the tranche loss may be determined in accordance with note 9 below.

8) The Step 3 Table contemplates available credit enhancement of up to 40%. Where the available credit enhancement for a particular tranche exceeds 40% and the rating of that tranche would be sensitive to linkage if the tranche loss were determined assuming available credit enhancement of 40%, we may model the tranche loss in accordance with note 9 below.

9) In some situations, such as those described in notes 4-8 above, we may model the tranche loss for a specific tranche of notes.[159] First we model the "hedged expected loss" assuming the counterparty makes all scheduled swap payments. We then model the "unhedged expected loss" by assuming an additional senior-ranking expense equal to the transaction loss (from Step 2), which we distribute within the WAL of the tranche.[160] The tranche loss is given as the difference between the hedged expected loss and the unhedged expected loss and is used to determine the linkage-adjusted rating in accordance with the formula described in note 1 of the Step 4 Detailed Notes below.

10) If two unconnected counterparties provide relevant swaps, we determine a separate tranche loss amount for each of (1) the first counterparty's swaps; (2) the second counterparty's swaps; and (3) both counterparties' swaps. We combine these tranche loss amounts in the manner described in note 2 of the Step 4 Detailed Notes. If hedging is provided by more than two unconnected counterparties, we assess the impact of linkage on a case-by-case basis.

Step 4 Detailed Notes: Linkage-Adjusted Ratings

1) The expected loss to a tranche resulting from swap linkage is given by multiplying (1) the probability of becoming unhedged;[161] and (2) the tranche loss (from Step 3). We add this incremental expected loss to the Idealized Expected Loss[162] associated with the rating the tranche would otherwise have (that is, without accounting for swap linkage[163]) to derive a composite expected loss incorporating the effect of swap linkage.[164] We then translate the composite expected loss to a rating (the linkage-adjusted rating) using our Idealized Expected Loss rates.

2) If two unconnected counterparties provide relevant swaps, the incremental expected loss resulting from swap linkage is given by the sum of:

   a) the product of (1) the joint probability of becoming unhedged[165] in respect of both counterparties and (2) the tranche loss for both counterparties;

[157] For this purpose, the tranche size equals the aggregate of the swap sizes for the isolated loss swaps, as referenced in note 3 of the Step 2 Detailed Notes.

[158] If there is a trigger to switch from *pro rata* to sequential payment or *vice versa*, we determine whether notes rank *pro rata* on a case-by-case basis. This includes an assessment of when the switch will take place.

[159] Please see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report for more details.

[160] Alternatively, if a simple waterfall model is used, we may deduct the transaction loss directly from the credit enhancement.

[161] For this purpose, we convert the rating from Step 1 to a probability using our idealized default rates with a horizon equal to the WAL of the tranche.

[162] Please see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions* in the Moody's Related Publications section at the end of this report for more details.

[163] The term "without accounting for swap linkage" means after accounting for all other factors (including any applicable loss benchmarks for the underlying asset class) that may impact the expected loss or rating of the relevant tranche, but before the application of any rating caps contemplated by our rating methodologies.

[164] If there is a material difference between the expected loss of the tranche and the Idealized Expected Loss associated with its rating (in each case, determined without accounting for swap linkage), we may adjust the composite expected loss to account for this difference (unless "available surplus enhancement" is netted against the transaction loss in accordance with note 4 of the Step 3 Detailed Notes). The term "without accounting for swap linkage" means after accounting for all other factors (including any applicable loss benchmarks for the underlying asset class) that may impact the expected loss or rating of the relevant tranche, but before the application of any rating caps contemplated by our rating methodologies

[165] Computed using a bivariate normal method with an assumed correlation of 50%.

b) the product of (1) the probability of becoming unhedged in respect of the first counterparty minus the joint probability of becoming unhedged and (2) the tranche loss for the first counterparty; and

c) the product of (1) the probability of becoming unhedged in respect of the second counterparty minus the joint probability of becoming unhedged and (2) the tranche loss for the second counterparty.

We then determine the linkage-adjusted rating in accordance with note 1 above.

3) The actual rating of a tranche may be influenced not only by the expected losses to noteholders but also by the likelihood of timely payment. Swap linkage can materially increase the default probability of the notes – that is, the likelihood of an issuer failing to make timely payment to noteholders – and therefore affect the rating of the notes to a greater extent than may be indicated by the linkage-adjusted rating.

Loss Benchmarks

In determining the linkage-adjusted rating under Step 4, we use the Symmetric Range in which the lower-bound of loss consistent with a rating category is the midpoint (strictly, the geometric mean) between the Idealized Expected Loss[166] of the rating category and the Idealized Expected Loss of the next higher rating category. The upper-bound of loss is analogously determined as the geometric mean between the Idealized Expected Loss of the rating category and the Idealized Expected Loss of the next lower rating category. Mathematically, the benchmark boundary is computed as an equal 50/50 weighting on a logarithmic scale. That is, the benchmark boundaries of loss appropriate for evaluating rating category R are given by:

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

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

Where:

» $Rating\ Lower\ Bound_R$ means the lowest Idealized Expected Loss associated with rating R and the expected loss range of rating R is inclusive of the $Rating\ Lower\ Bound_R$;

» $Rating\ Upper\ Bound_R$ means the highest Idealized Expected Loss associated with rating R and the expected loss range of rating R is exclusive of the $Rating\ Upper\ Bound_R$;

» $R\text{-}1$ 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.

[166] For details, see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions* under the Moody's Related Publications section.

Appendix 3: Swap - Collateral Provisions

(See section 3, Swap Counterparty Exposures for background)

Collateral Provisions can be found here.

Appendix 4: Model Swap Framework

(See section 3, Swap Counterparty Exposures for background)

ISDA Schedule and CSA Provisions

The ISDA Schedule and CSA provisions in this appendix are an example of how the model swap framework may be incorporated in hedge agreements executed under the 1992[167] ISDA master agreement, where Party A is the counterparty and Party B is the SPV.

The model swap framework primarily relates to the probability of a transaction becoming unhedged following counterparty default. However, certain provisions in this appendix (including Footnote 169, Part 2, Part 5(c), Part 5(d), Footnote 178, Part 5(g), and Part 5(h)) address other matters such as tax risks and the risk of termination with the issuer as the defaulting party.

This Appendix is not intended to be legal or tax advice or advice on how to draft transaction documentation to any person (including any counterparty or SPV) and does not take into account the specific requirements of any person. Such persons should take their own legal and tax advice when structuring, negotiating and documenting such transactions.

Schedule

Part 1. Termination Provisions

(a) ***Payments on Early Termination.*** For the purposes of Section 6(e) of this Agreement, Market Quotation and The Second Method will apply.

(b) **"Termination Currency"** means [*For currency swap or combined interest rate/currency swap, insert the currency of the Notes. For single-currency swap, insert the currency of the swap.*]

Part 2. Tax Representations[168]

Part 3. Agreement to Deliver Documents[169]

Part 4. Miscellaneous

(a) ***Calculation Agent.*** The Calculation Agent is Party A, provided that if Party A is a Defaulting Party, Party B may, by giving written notice to Party A, appoint a substitute Calculation Agent.

(b) "**Credit Support Provider**" means in relation to Party A, [Party A and][170] the guarantor under any Eligible Guarantee, and in relation to Party B, none.

(c) "**Credit Support Document**" means the Credit Support Annex[171] and any Eligible Guarantee.

[167] This pro forma is also applicable to the 2002 ISDA Master, save for (1) any necessary cross-reference and terminology changes, (2) modification of Section 5(a)(i) (so far as it applies in respect of Party B) so as to replace each reference to "first" with "third", (3) disapplication of Section 5(a)(ii)(2) (so far as it applies in respect of Party B) and (4) modification of Section 5(b)(ii) (Force Majeure Event) so as to remove the words "or impracticable" and "or impracticability" wherever they appear in that Section.

[168] Any Tax Representations given by Party B that are of a legal nature to be supported by a satisfactory legal opinion.

[169] To be completed as appropriate.

[170] Insert words in square brackets only if the Credit Support Annex is specified as a Credit Support Document.

[171] It is not necessary to specify an English law Credit Support Annex as a Credit Support Document.

(d) *Local Business Day.* The definition of "Local Business Day" in Section 14 of this Agreement shall be amended by the addition of the words "or any Credit Support Document" after "Section 2(a)(i)" and the addition of the words "or Credit Support Document" after "Confirmation." [172]

Part 5. Other Provisions

(a) *No Set-Off.*

(i) All payments under this Agreement shall be made without set-off or counterclaim, except as expressly provided for in Section 2(c) or Section 6.

(ii) The last sentence of the first paragraph in Section 6(e) shall be deleted and replaced with the words "Notwithstanding any other provision of this Section, if a Party (the "Paying Party") would, but for this sentence, be required to pay an amount pursuant to this Section, it may, by giving written notice to the other Party, cause the amount so payable to be reduced by the lesser of (i) such amount and (ii) the aggregate amount payable to the Paying Party pursuant to any demands made under Section 11 on or before the Early Termination Date."

(b) *Security Interest.* [173]

(c) *Events of Default.*

Section 5 shall be amended as follows:

(i) Section 5(a)(ii) will not apply in respect of Party B.

(ii) Section 5(a)(iii) will not apply in respect of Party B [except that Section 5(a)(iii)(1) will apply in respect of Party B's obligations under Paragraph [2(b)/3(b)] of the Credit Support Annex]. [174]

(iii) Section 5(a)(iv) will not apply in respect of Party B. [175]

(iv) Section 5(a)(v) will not apply in respect of Party B.

(v) Section 5(a)(vii)(2), (7) and (9) will not apply in respect of Party B.

(vi) Section 5(a)(vii)(3) will not apply in respect of Party B to the extent it refers to any assignment, arrangement or composition that is effected by or pursuant to the [Transaction Documents].

(vii) Section 5(a)(vii)(4) will not apply in respect of Party B to the extent that it refers to proceedings or petitions instituted or presented by Party A or any of its Affiliates.

[172] Not required for English law Credit Support Annex.

[173] Party A to acknowledge that Party B has created a security interest in respect of its rights under this Agreement (if applicable).

[174] May insert wording in square brackets if the Credit Support Annex is specified as a Credit Support Document.

[175] Section 5(a)(iv) may apply in relation to representations of fact by Party B that are demonstrably true.

(viii) Section 5(a)(vii)(6) will not apply in respect of Party B to the extent that it refers to (i) any appointment that is effected by or pursuant to the [Transaction Documents] or (ii) any appointment that Party B has not become subject to.

(ix) Section 5(a)(vii)(8) will apply to Party B only to the extent that it applies to Section 5(a)(vii)(1), (3), (4), (5) and (6), as amended above.

(d) *Tax Event and Tax Event upon Merger.*

(i) Section 5(b)(ii) will apply, provided that the words "(x) any action taken by a taxing authority, or brought in a court of competent jurisdiction, on or after the date on which a Transaction is entered into (regardless of whether such action is taken or brought with respect to a party to this Agreement) or (y)" shall be deleted.[176]

(ii) Section 5(b)(iii) will apply to Party A and Party B, provided that Party A shall not be entitled to designate an Early Termination Date or effect a transfer pursuant to Section 6(b)(ii) by reason of a Tax Event Upon Merger in respect of which it is the Affected Party.

(e) *Additional Termination Events.*[177]

An Additional Termination Event shall occur with Party A as Affected Party if (A) the Transfer Trigger Requirements apply and 30 or more Local Business Days have elapsed since the last time the Transfer Trigger Requirements did not apply and (B) at least one Eligible Replacement has made a Firm Offer that would, assuming the occurrence of an Early Termination Date, qualify as a Market Quotation (on the basis that paragraphs (i) and (ii) in Part 5(i) below (Close-Out Calculations) apply) and which remains capable of becoming legally binding upon acceptance.

(f) *Transfer Trigger.*

So long as the Transfer Trigger Requirements apply, Party A will, at its own cost, use commercially reasonable efforts to, as soon as reasonably practicable, either (A) procure an Eligible Guarantee in respect of all of its present and future obligations under this Agreement from a guarantor with a Qualifying Transfer Trigger Rating or (B) without prejudice to the need for Party B's consent in accordance with Part 5(j)(i) (which Party A shall use commercially reasonable efforts to obtain), transfer its rights and obligations under this Agreement to an Eligible Replacement.

(g) *Tax.*

Notwithstanding the definition of "**Indemnifiable Tax**" in Section 14 of this Agreement, in relation to payments by Party A, any Tax shall be an Indemnifiable Tax and, in relation to payments by Party B, no Tax shall be an Indemnifiable Tax.[178]

[176] This deletion is only required in the absence of satisfactory legal opinions confirming that none of Party A or Party B's payments under this Agreement are subject to deduction or withholding for Tax.

[177] We assess the rating impact of Additional Termination Events with Party B as Affected Party according to (i) the likelihood that they will occur and result in termination (ii) the potential impact of swap termination.

[178] This provision may be deleted or modified if suitable tax opinions are provided.

(h) *Non-Petition and Limited Recourse.*[179]

(i) *Close-Out Calculations.*

If an Early Termination Date is designated at a time when Party A is (A) the Affected Party in respect of an Additional Termination Event or a Tax Event Upon Merger or (B) the Defaulting Party in respect of any Event of Default, paragraphs (i) to (vi) below shall apply:

(i) The definition of **"Market Quotation"** shall be deleted in its entirety and replaced with the following:

"Market Quotation" means, with respect to one or more Terminated Transactions, a Firm Offer which is:

(1) made by an Eligible Replacement;

(2) for an amount that would be paid to Party B (expressed as a negative number) or by Party B (expressed as a positive number) in consideration of an agreement between Party B and such Eligible Replacement to enter into a transaction (the **"Replacement Transaction"**) that would have the effect of preserving for Party B the economic equivalent of any payment or delivery (whether the underlying obligation was absolute or contingent and assuming the satisfaction of each applicable condition precedent) by the parties under this Agreement in respect of such Terminated Transactions or group of Terminated Transactions that would, but for the occurrence of the relevant Early Termination Date, have been required after that date;

(3) made on the basis that Unpaid Amounts in respect of the Terminated Transaction or group of Transactions are to be excluded but, without limitation, any payment or delivery that would, but for the relevant Early Termination Date, have been required (assuming satisfaction of each applicable condition precedent) after that Early Termination Date is to be included; and

(4) made in respect of a Replacement Transaction with terms that are, in all material respects, no less beneficial for Party B than those of this Agreement (save for the exclusion of provisions relating to Transactions that are not Terminated Transactions), as determined by Party B."

(ii) If Party B elects to determine whether or not a Firm Offer satisfies the condition in sub-paragraph (4) of Market Quotation, it shall do so in a commercially reasonable manner.

(iii) The definition of **"Settlement Amount"** shall be deleted in its entirety and replaced with the following:

"Settlement Amount" means, with respect to any Early Termination Date:

(1) if, on or prior to such Early Termination Date, a Market Quotation for the relevant Terminated Transaction or group of Terminated Transactions is accepted by Party B

[179] This provision to include non-petition and limited recourse language in favor of Party B.

so as to become legally binding, the Termination Currency Equivalent of the amount (whether positive or negative) of such Market Quotation;

(2) if, on such Early Termination Date, no Market Quotation for the relevant Terminated Transaction or group of Terminated Transactions has been accepted by Party B so as to become legally binding and one or more Market Quotations have been communicated to Party B and remain capable of becoming legally binding upon acceptance by Party B, the Termination Currency Equivalent of the amount (whether positive or negative) of the lowest of such Market Quotations (for the avoidance of doubt, (i) a Market Quotation expressed as a negative number is lower than a Market Quotation expressed as a positive number and (ii) the lower of two Market Quotations expressed as negative numbers is the one with the largest absolute value); or

(3) if, on such Early Termination Date, no Market Quotation for the relevant Terminated Transaction or group of Terminated Transactions has been accepted by Party B so as to become legally binding and no Market Quotations have been communicated to Party B and remain capable of becoming legally binding upon acceptance by Party B, Party B's Loss (whether positive or negative and without reference to any Unpaid Amounts) for the relevant Terminated Transaction or group of Terminated Transactions."

(iv) At any time on or before the Early Termination Date at which two or more Market Quotations have been communicated to Party B and remain capable of becoming legally binding upon acceptance by Party B, Party B shall be entitled to accept only the lowest of such Market Quotations (for the avoidance of doubt, (i) a Market Quotation expressed as a negative number is lower than a Market Quotation expressed as a positive number and (ii) the lower of two Market Quotations expressed as negative numbers is the one with the largest absolute value).

(v) If Party B requests Party A in writing to obtain Market Quotations, Party A shall use reasonable efforts to do so before the Early Termination Date.

(vi) For the purpose of determining Unpaid Amounts, any payment or delivery obligation which was (or would have been but for Section 2(a)(iii)) required to be performed pursuant to paragraph 2 of the Credit Support Annex shall be disregarded.[180]

(j) *Transfers.*

(i) Subject to Part 5(j)(ii), neither party may transfer (whether by way of security or otherwise) any interest or obligation in or under this Agreement without the prior written consent of the other party.

(ii) Party B may transfer (whether by way of security or otherwise) any interest or obligation in or under this Agreement pursuant to the Transaction Documents.

(k) *Expenses*

Section 11 shall be deleted in its entirety and replaced by the following: "A Defaulting Party or an Affected Party (if such Affected Party is Party A) will, on demand, indemnify and hold harmless the other party for and against the Termination Currency Equivalent of all reasonable

[180] Only for English law Credit Support Annex.

out-of-pocket expenses, including legal fees and Stamp Tax, incurred by such other party by reason of the enforcement and protection of its rights under this Agreement or any Credit Support Document to which such Defaulting Party or Affected Party is a party or by reason of the early termination of any Transaction, including, but not limited to, costs of collection and costs incurred in connection with procuring a replacement for this Agreement (other than any amount paid or payable to a replacement counterparty). If, following the making of one or more demands under this Section 11, a reduction is effected pursuant to the last sentence of the first paragraph in Section 6(e), the aggregate amount payable in respect of such demands shall be deemed to be discharged to the extent of the amount of such reduction."

(l) *Definitions.*

For the purpose of this Agreement:

The **"Collateral Trigger Requirements"** shall apply so long as no Relevant Entity has a Qualifying Collateral Trigger Rating.

"Eligible Guarantee" means an unconditional and irrevocable guarantee that is provided by a guarantor as principal debtor rather than surety and is directly enforceable by Party B, where (I) such guarantee provides that if a guaranteed obligation cannot be performed without an action being taken by Party A, the guarantor shall use its best endeavors to procure that Party A takes such action, (II)(A) the guarantor and Party B are resident for tax purposes in the same jurisdiction, (B) a law firm has given a legal opinion confirming that none of the guarantor's payments to Party B under such guarantee will be subject to deduction or withholding for tax, (C) such guarantee provides that, in the event that any of such guarantor's payments to Party B are subject to deduction or withholding for tax, such guarantor is required to pay such additional amount as is necessary to ensure that the net amount actually received by Party B (free and clear of any tax) will equal the full amount Party B would have received had no such deduction or withholding been required or (D) in the event that any payment (the "Primary Payment") under such guarantee is made net of deduction or withholding for tax, Party A is required, under this Agreement, to make such additional payment (the "Additional Payment") as is necessary to ensure that the net amount actually received by Party B from the guarantor (free and clear of any tax) in respect of the Primary Payment and the Additional Payment will equal the full amount Party B would have received had no such deduction or withholding been required (assuming that the guarantor will be required to make a payment under such guarantee in respect of the Additional Payment) and (III) the guarantor waives any right of set-off in respect of payments under such guarantee.

"Eligible Replacement" means an entity that can lawfully perform the obligations owing to Party B under this Agreement or its replacement (as applicable) and (A) has a Qualifying Transfer Trigger Rating or (B) whose present and future obligations owing to Party B under this Agreement or its replacement (as applicable) are guaranteed pursuant to an Eligible Guarantee provided by a guarantor with a Qualifying Transfer Trigger Rating.[181]

[181] If any tax opinions are required in relation to the original hedge and the Eligible Replacement is located in a different tax jurisdiction to Party A, there should be an additional requirement incorporated in the definition of "Eligible Replacement" to the effect that either (i) the relevant opinions are delivered to Moody's in relation to the hedge provided by the Eligible Replacement, or (ii) the terms of the new hedge are amended so as to avoid the need for opinions, or (iii) the Eligible Replacement is located in the same tax jurisdiction as Party A.

"Firm Offer" means an offer which, when made, was capable of becoming legally binding upon acceptance.

An entity has a **"Qualifying Collateral Trigger Rating"** if its [senior unsecured debt rating from Moody's is [*insert collateral trigger level*] or above / counterparty risk assessment from Moody's is [*insert collateral trigger level*](cr) or above].

An entity has a **"Qualifying Transfer Trigger Rating"** if its [senior unsecured debt rating from Moody's is [*insert transfer trigger level*] or above / counterparty risk assessment from Moody's is [*insert transfer trigger level*](cr) or above].

"Relevant Entities" means Party A and any guarantor under an Eligible Guarantee in respect of all of Party A's present and future obligations under this Agreement and "**Relevant Entity**" means any one of them.

The **"Transfer Trigger Requirements"** apply so long as no Relevant Entity has a Qualifying Transfer Trigger Rating.

Paragraph 11 of the ISDA Credit Support Annex (English law)[182]

[Note: The model swap framework contemplates that a collateral account in the name of the issuer will be opened at closing with a highly rated third party account provider.]

(a) *Base Currency and Eligible Currency.*

(i) **"Base Currency"** means [For currency swap or combined interest rate/currency swap, insert the currency of the Notes. For single-currency swap, insert the currency of the swap.]

(ii) **"Eligible Currency"** *means* the Base Currency.[183]

(b) *Credit Support Obligations.*

(i) *Delivery Amount and Return Amount.*

(A) Paragraph 2(a) (Delivery Amount) shall apply, except that:

(i) the words "upon a demand made by the Transferee on or promptly following a Valuation Date" shall be deleted and the word "that" on the second line of Paragraph 2(a) shall be replaced with the word "a";

(ii) the sentence beginning "Unless otherwise specified in Paragraph 11(b)" shall be deleted in its entirety and replaced with the following:

"The **"Delivery Amount"** applicable to the Transferor for any Valuation Date will equal the greatest of:

(1) the amount by which the Moody's Credit Support Amount exceeds the Value (determined using the Moody's Valuation Percentages) of the Transferor's Credit

[182] The pro forma provisions also apply to the ISDA Credit Support Annex (New York law), subject to making the necessary modifications.

[183] Also specify any other currencies in which cash may be posted.

Support Balance (adjusted to include any prior Delivery Amount and to exclude any prior Return Amount, the transfer of which, in each case, has not yet been completed and for which the relevant Settlement Day falls on or after such Valuation Date);

(2) the amount by which the [*ABC Rating Agency*] Credit Support Amount exceeds the Value (determined using the [*ABC Rating Agency*] Valuation Percentages) of the Transferor's Credit Support Balance (adjusted to include any prior Delivery Amount and to exclude any prior Return Amount, the transfer of which, in each case, has not yet been completed and for which the relevant Settlement Day falls on or after such Valuation Date); and

(3) the amount by which the [*XYZ Rating Agency*] Credit Support Amount exceeds the Value (determined using the [*XYZ Rating Agency*] Valuation Percentages) of the Transferor's Credit Support Balance (adjusted to include any prior Delivery Amount and to exclude any prior Return Amount, the transfer of which, in each case, has not yet been completed and for which the relevant Settlement Day falls on or after such Valuation Date)."; and

(iii) if, on any Valuation Date, the Delivery Amount equals or exceeds the Transferor's Minimum Transfer Amount, the Transferor will transfer to the Transferee sufficient Eligible Credit Support to ensure that, immediately following such transfer, the Delivery Amount shall be zero.

(B) Paragraph 2(b) (Return Amount) shall apply, except that:

(i) the sentence beginning "Unless otherwise specified in Paragraph 11(b)" shall be deleted in its entirety and replaced by the following:

"The **"Return Amount"** applicable to the Transferee for any Valuation Date will equal the least of:

(1) the amount by which the Value (determined using the Moody's Valuation Percentages) of the Transferor's Credit Support Balance (adjusted to include any prior Delivery Amount and to exclude any prior Return Amount, the transfer of which, in each case, has not yet been completed and for which the relevant Settlement Day falls on or after such Valuation Date) exceeds the Moody's Credit Support Amount;

(2) the amount by which (a) the Value (determined using the [ABC Rating Agency] Valuation Percentages) of the Transferor's Credit Support Balance (adjusted to include any prior Delivery Amount and to exclude any prior Return Amount, the transfer of which, in each case, has not yet been completed and for which the relevant Settlement Day falls on or after such Valuation Date) exceeds (b) the [ABC Rating Agency] Credit Support Amount; and

(3) the amount by which (a) the Value (determined using the [XYZ Rating Agency] Valuation Percentages) of the Transferor's Credit Support Balance (adjusted to include any prior Delivery Amount and to exclude any prior Return Amount, the transfer of which, in each case, has not yet been completed and for which the relevant Settlement Day falls on or after such Valuation Date) exceeds (b) the [XYZ Rating Agency] Credit Support Amount."; and

(ii) in no event shall the Transferee be required to transfer any Equivalent Credit Support under Paragraph 2(b) if, immediately following such transfer, the Delivery Amount would be greater than zero.

(ii) *Eligible Credit Support.*

[*Insert applicable table from Appendix 3*]

(iii) *Thresholds.*

(A) **"Independent Amount"** means with respect to Party A and Party B: zero

(B) **"Moody's Threshold"** means, (A) so long as the Collateral Trigger Requirements apply and either (i) the Collateral Trigger Requirements have applied continuously since this Annex was executed or (ii) at least 30 Local Business days have elapsed since the last time the Collateral Trigger Requirements did not apply, zero and (B) at any other time, infinity.

(A) **"Minimum Transfer Amount"** means with respect to Party A and Party B: [*Base Currency*] 100,000.

(B) *Rounding*. The Delivery Amount will be rounded up to the nearest integral multiple of [*Base Currency*] 10,000 and the Return Amount will be rounded down to the nearest integral multiple of [*Base Currency*] 10,000.

(iv) **"Exposure"** has the meaning specified in Paragraph 10, except that (1) after the word "Agreement" the words "(assuming, for this purpose only, that Part 5(i) (Close-Out Calculations) of the Schedule is deleted)" shall be inserted and (2) at the end of the definition of "Exposure", the words "without assuming that the terms of such Replacement Transactions are materially less beneficial for the Transferee than the terms of this Agreement" shall be added.

(c) *Valuation and Timing.*

(i) **"Valuation Agent"** means Party A.

(1) **"Valuation Date"** means [the first Local Business Day in each week / each Local Business Day].

(2) **"Valuation Time"** means the close of business on the Local Business Day immediately preceding the Valuation Date or date of calculation, as applicable, Provided that the calculations of Value and Exposure will, as far as practicable, be made as of approximately the same time on the same date.

(ii) **"Notification Time"** means 11:00 a.m., [London / New York] time, on a Local Business Day.

(iii) *Calculations.* Paragraph 3(b) shall be amended by inserting the words ", Moody's Credit Support Amount" after the word "Value."

(iv) *Value.* Paragraph (i)(B) of the definition of "Value" shall be deleted in its entirely and replaced with the following: "(i)(B) a security, the Base Currency Equivalent of the bid price obtained by the Valuation Agent (or, if the Valuation Agent is a Defaulting Party and the Transferee has, by way of written notice to the Valuation Agent, nominated another entity to calculate the Value of securities, such entity) multiplied by the applicable Valuation Percentage, if any; and."

(d) *Exchange Date.*

"**Exchange Date**" has the meaning specified in Paragraph 3(c)(ii).

(e) *Dispute Resolution.*

(i) **"Resolution Time"** means 1:00 p.m., [London / New York[3]] time on the Local Business Day following the date on which the notice is given that gives rise to a dispute under Paragraph 4.

(ii) *Value*. For the purpose of Paragraphs 4(a)(4)(i)(C) and 4(a)(4)(ii), on any date the Value of the outstanding Credit Support Balance or of any transfer of Eligible Credit Support or Equivalent Credit Support, as the case may be, will be calculated as follows:

(1) with respect to any Eligible Credit Support or Equivalent Credit Support comprising securities (**"Securities"**) the Base Currency Equivalent of the sum of (a)(x) the last bid price on such date for such Securities on the principal national securities exchange on which such Securities are listed, multiplied by the applicable Valuation Percentage; or (y) where any Securities are not listed on a national securities exchange, the bid price for such Securities quoted as at the close of business on such date by any principal market maker (which shall not be and shall be independent from the Valuation Agent) for such Securities chosen by the Valuation Agent, multiplied by the applicable Valuation Percentage; or (z) if no such bid price is listed or quoted for such date, the last bid price listed or quoted (as the case may be), as of the day next preceding such date on which such prices were available, multiplied by the applicable Valuation Percentage; and (b) the accrued interest where applicable on such Securities (except to the extent that such interest shall have been paid to the Transferor pursuant to Paragraph 5(c)(ii) or included in the applicable price referred to in subparagraph (a) above) as of such date, multiplied by the Valuation Percentage with respect to such Securities; and

(2) with respect to any cash, the Base Currency Equivalent of the amount thereof multiplied by the applicable Valuation Percentage.

(iii) *Alternative*. The provisions of Paragraph 4 will apply.

(f) *Distributions and Interest Amount.*

(i) [Reserved].

(ii) *Transfer of Interest Amount*. The transfer of any Interest Amount will be made on the [*first*] Local Business Day following the end of each calendar month in which it is received or, if that date is not a Valuation Date, the next following Valuation Date, Provided that the Transferee shall only be obliged to transfer an Interest Amount to the extent that the Valuation Agent has confirmed in writing that no Delivery Amount will be created or increased by the transfer.[184]

(iii) *Alternative to Interest Amount*. Paragraph 5(c)(ii) will apply.

(iv) **"Interest Amount"** means, with respect to an Interest Period, any amount of interest received (net of any deduction or withholding for or on account of any tax) by the Transferee during such Interest Period on the principal amount of the portion of the Credit Support Balance comprised of cash.

(v) **"Distributions"** means, with respect to any Eligible Credit Support comprised in the Credit Support Balance consisting of securities, all principal, interest and other payments and

[184] As an alternative to this proviso, the last sentence of "Credit Support Balance" may be deleted.

distributions of cash or other property received (net of any deduction or withholding for or on account of any tax) by the Transferee from time to time.

(vi) **"Distribution Date"** means, with respect to any Eligible Credit Support comprised in the Credit Support Balance other than cash, each date on which the Transferee receives Distributions or, if that date is not a Valuation Date, the next following Valuation Date.

(vii) *Transfer of Distributions* The Transferee shall only be obliged to transfer Equivalent Distributions under Paragraph 5(c)(i) if the Valuation Agent has confirmed in writing that no Delivery Amount would be created or increased by the transfer (and the date of calculation will be deemed a Valuation Date for this purpose).[185]

(g) *Other Provisions.*

(i) *Transfer Timing.* The following words shall be inserted at the end of the final paragraph of Paragraph 3(a):

"Provided that any transfer of Eligible Credit Support by the Transferor pursuant to Paragraph 2(a) shall be made in accordance with sub-paragraph (i), (ii) or (iii) (as applicable) of this Paragraph 3(a) not later than the close of business on the relevant Valuation Date, regardless of whether any demand for transfer is received."

(ii) *Early Termination.* The heading for Paragraph 6 shall be deleted and replaced with "Early Termination" and the following shall be added after the word "Default" in the first line of Paragraph 6, "in relation to all Transactions or a Termination Event in relation to all Transactions."

(iii) *Expenses.* Notwithstanding Paragraph 8, the Transferor will be responsible for, and will reimburse the Transferee for, all transfer and other taxes and other costs involved in the transfer of Eligible Credit Support and/or Equivalent Credit Support either from the Transferor to the Transferee or from the Transferee to the Transferor pursuant to this Annex.

(iv) *Single Transferor and Single Transferee.* Party A shall always be the Transferor and Party B shall always be the Transferee.

(v) *Exchange.* The Transferee shall only be obliged to transfer Equivalent Credit Support under Paragraph 3(c)(ii) if the Valuation Agent has confirmed in writing that no Delivery Amount would be created or increased by the transfer (and the date of calculation will be deemed a Valuation Date for this purpose).

(vi) *Moody's Criteria.*

"Moody's Credit Support Amount" means, for any Valuation Date:

(A) if the Moody's Threshold is infinity, zero;

(B) if the Moody's Threshold is zero, the greater of:

(i) zero; and

(ii) the sum of (x) the Transferee's Exposure and (y) the aggregate of the Moody's Additional Amounts in respect of such Valuation Date for all Transactions (other than the Transaction constituted by this Annex).

[185] This sub-paragraph is not needed if the last sentence of "Credit Support Balance" is deleted.

"Moody's Additional Amount"[186] means, for any Valuation Date:

(A) in respect of any Transaction that is both a cross-currency hedge and an Optionality Hedge, the lesser of (x) the sum of (1) the product of Transaction Notional Amount for such Transaction for the Calculation Period which includes such Valuation Date and the Moody's Cross Currency Notional Amount Lower Multiplier and (2) the product of the Moody's Cross Currency DV01 Multiplier (Optionality) and the Transaction Cross Currency DV01 for such Transaction and (y) the product of the Moody's Cross Currency Notional Amount Higher Multiplier (Optionality) and the Transaction Notional Amount for such Transaction for the Calculation Period which includes such Valuation Date;

(B) in respect of any Transaction that is a cross-currency hedge and is not an Optionality Hedge, the lesser of (x) the sum of (1) the product of Transaction Notional Amount for such Transaction for the Calculation Period which includes such Valuation Date and the Moody's Cross Currency Notional Amount Lower Multiplier and (2) the product of the Moody's Cross Currency DV01 Multiplier and the Transaction Cross Currency DV01 for such Transaction and (y) the product of the Moody's Cross Currency Notional Amount Higher Multiplier and the Transaction Notional Amount for such Transaction for the Calculation Period which includes such Valuation Date;

(C) in respect of any Transaction that is not a cross-currency hedge and is an Optionality Hedge, the lesser of (x) the product of the Moody's Single Currency DV01 Multiplier (Optionality) and the Transaction Single Currency DV01 for such Transaction and (y) the product of the Moody's Single Currency Notional Amount Multiplier (Optionality) and the Transaction Notional Amount for such Transaction for the Calculation Period which includes such Valuation Date; and

(D) in respect of any Transaction that is neither a cross-currency hedge nor an Optionality Hedge, the lesser of (x) the product of the Moody's Single Currency DV01 Multiplier and the Transaction Single Currency DV01 for such Transaction and (y) the product of the Moody's Single Currency Notional Amount Multiplier and the Transaction Notional Amount for such Transaction for the Calculation Period which includes such Valuation Date.

[186] This definition assumes DV01 is to be used. It may be replaced with alternative language based on the tables in Appendix 3.

[Insert following definitions if the Original Collateral Formulas are selected:

"Moody's Cross Currency DV01 Multiplier" means 15.

"Moody's Cross Currency DV01 Multiplier (Optionality)" means 30.

"Moody's Cross Currency Notional Amount Higher Multiplier" means 0.09.

"Moody's Cross Currency Notional Amount Higher Multiplier (Optionality)" means 0.11.

"Moody's Cross Currency Notional Amount Lower Multiplier" means 0.06.

"Moody's Single Currency DV01 Multiplier" means 50.

"Moody's Single Currency DV01 Multiplier (Optionality)" means 65.

"Moody's Single Currency Notional Amount Multiplier" means 0.08.

"Moody's Single Currency Notional Amount Multiplier (Optionality)" means 0.10.]

[Insert following definitions if the Enhanced Collateral Formulas are selected:

"Moody's Cross Currency DV01 Multiplier" means 120.

"Moody's Cross Currency DV01 Multiplier (Optionality)" means 190.

"Moody's Cross Currency Notional Amount Higher Multiplier" means 0.3.

"Moody's Cross Currency Notional Amount Higher Multiplier (Optionality)" means 0.36.

"Moody's Cross Currency Notional Amount Lower Multiplier" means 0.14.

"Moody's Single Currency DV01 Multiplier" means 140.

"Moody's Single Currency DV01 Multiplier (Optionality)" means 210.

"Moody's Single Currency Notional Amount Multiplier" means 0.22.

"Moody's Single Currency Notional Amount Multiplier (Optionality)" means 0.27.]

[Insert following definitions if the Enhanced Collateral Formulas (Assisted Replacement) are selected:

"Moody's Cross Currency DV01 Multiplier" means 100.

"Moody's Cross Currency DV01 Multiplier (Optionality)" means 145.

"Moody's Cross Currency Notional Amount Higher Multiplier" means 0.21.

"Moody's Cross Currency Notional Amount Higher Multiplier (Optionality)" means 0.25.

"Moody's Cross Currency Notional Amount Lower Multiplier" means 0.11.

"Moody's Single Currency DV01 Multiplier" means 110.

"Moody's Single Currency DV01 Multiplier (Optionality)" means 155.

"Moody's Single Currency Notional Amount Multiplier" means 0.15.

"Moody's Single Currency Notional Amount Multiplier (Optionality)" means 0.18.]

"Optionality Hedge" means any Transaction that is a cap, floor or swaption.

"Transaction Cross Currency DV01" means, with respect to a Transaction and any date of determination, the greater of (i) the estimated absolute change in the Base Currency Equivalent of the mid-market value with respect to such Transaction that would result from a one basis point change in the relevant swap curve (denominated in the currency of Party A's payment obligations under such Transaction) on such date and (ii) the estimated absolute change in the Base Currency Equivalent of the mid-market value with respect to such Transaction that would result from a one basis point change in the relevant swap curve (denominated in the currency of Party B's payment obligations under such Transaction) on such date, in each case as determined by the Valuation Agent in good faith and in a commercially reasonable manner in accordance with the relevant methodology customarily used by the Valuation Agent.

"Transaction Notional Amount" means (A) in respect of any Transaction that is a cross currency hedge, the Base Currency Equivalent of the Currency Amount applicable to Party A's payment obligations and (B) in respect of any other Transaction, the Base Currency Equivalent of the Notional Amount.

"Transaction Single Currency DV01" means, with respect to a Transaction and any date of determination, the estimated absolute change in the Base Currency Equivalent of the mid-market value with respect to such Transaction that would result from a one basis point change in the relevant swap curve on such date, as determined by the Valuation Agent in good faith and in a commercially reasonable manner in accordance with the relevant methodology customarily used by the Valuation Agent.

Appendix 5: Operational Risk - Characteristics and Duties of Parties Responsible for Payment Continuity

(See section 4, Operational Risk)

The specifics of our analysis of financial disruption risk depend on the roles that transaction parties play, which vary across regions and asset types. Generally, we focus on servicers, cash managers, calculation agents and trustees.[187] Exhibit 19 shows characteristics of these parties, as well as whether a trustee typically serves as the "servicer of last resort," meaning that the trustee is generally responsible for servicing the collateral, or for finding a replacement servicer if the original servicer is terminated.

EXHIBIT 19

Typical Characteristics of the Servicer, Cash Manager/Calculation Agent and Trustee by Region and Asset Class

	Servicer	Cash Manager/Calculation Agent	Trustee as "Servicer Of Last Resort" or Explicitly Responsible For Finding A Successor?
US/Canada ABS	Generally sponsor-servicer; characteristics vary greatly, from large, highly rated sponsors to smaller, non-investment grade specialty lenders	Sponsor	Yes for US; in Canada, trustees generally responsible for appointing successor servicer
EMEA ABS	Generally sponsor-servicer; characteristics vary greatly, from large highly rated financial institutions to smaller, non-investment grade specialty lenders	Sponsor or third party (e.g., Gestoras in Spain, Management Company in France, or third-party banks)	Usually no, but in Spain and France, for example, Gestoras/Management companies generally have responsibility for finding a successor
Asia-Pacific ABS/ RMBS	Generally sponsor-servicer; characteristics vary from highly rated financial institutions to smaller, non-investment grade specialty lenders	Sponsor in Australia; third party (either highly rated banks or their affiliates) in Asia ex-Japan; generally trustee in Japan	Yes for Australia and Japan; No for Asia ex-Japan
US/Canada RMBS	Generally sponsor-servicer; characteristics vary greatly, from large, highly-rated financial institutions to smaller, non-investment grade specialty lenders; sometimes master servicer provides oversight	Sponsor	Yes for US; in Canada, trustees generally responsible for appointing successor servicer
EMEA RMBS	Generally sponsor-servicer, although independent third-party servicers present in some markets; characteristics vary greatly from large, highly rated financial institutions to smaller, non-investment grade specialty lenders	Sponsor or third party (e.g., Gestoras in Spain, Management Company in France, third-party banks)	Usually no, but in Spain and France, for example, Gestoras/Management companies generally have responsibility for finding a successor
US/Canada CMBS	Master servicer, generally a highly rated bank (or owned by a bank or other highly rated entity); Special servicer for problem loans	Master servicer	Yes for US; in Canada, trustees generally responsible for appointing successor servicer
EMEA CMBS	Primary servicer, generally a large entity or a specialized servicing company, some owned by banks; some not rated; Special servicer for problem loans	Third party, generally highly rated banks	Usually no, but in Spain and France, for example, Gestoras/Management companies generally have responsibility for finding a successor
Asia-Pacific CMBS	Master servicer, generally a large entity or a specialized servicing company; Special servicer for problem loans	Third party, generally highly rated banks	Yes for Australia and Japan; No for Asia ex-Japan
Structured Credit	Servicer/collateral manager, generally not responsible for making or effecting cash payments. In some regions/sectors, such as EMEA and Japan SME CLOs and cash balance sheet CLOs, servicer has similar responsibilities as for ABS or RMBS.	Third party, generally highly rated banks (trustee)	Not relevant in circumstances where servicer is not responsible for making or effecting cash payments
ABCP	Program administrator	Program administrator	Not relevant
Latin America	Generally the sponsor is the servicer; characteristics vary greatly, from large, highly rated sponsors, to smaller non-investment grade specialty lenders; some unrated	Third party, generally trustee (in Argentina), Common Representative (Mexico) and Agente Fiduciario or Administrador (Brazil)	Yes for Argentina and Mexico. The Custodiante (master servicer) acts as servicer of last resort in Brazil.

Source: Moody's Investors Service

[187] This report does, for example, not cover parties that provide payments under guarantee or liquidity agreements.

Servicer

The primary role of a servicer is to provide customer service, collect payments due, manage the underlying assets and collateral (where applicable), secure and dispose of the collateral if necessary and administer collections for the benefit of investors. For some asset types and in some regions, servicers have additional responsibilities that are also important to payment continuity, such as performing transaction-related calculations to determine periodic distribution amounts. The financial distress of a servicer can jeopardize the servicer's ability to perform its role, leading to missed payments to investors.

The characteristics of a servicer's role differ among broad asset classes and markets. When assessing financial disruption risk, we do not specifically focus on servicer quality with regards to managing the portfolio and related assets, or the collateral backing the transaction, such as loans or leases.[188] Rather, we focus our analysis on the servicer's role with regards to processing collections, calculating payments and administrating disbursements to various transaction parties and, ultimately, to the investors.

Calculation Agent/Cash Manager

Calculation agents are responsible for determining the periodic distribution amounts on payment dates, while cash managers also assume responsibility for cash investments and management. Often, a single entity performs both roles in a securitization. The naming convention and scope of the roles vary between asset classes and regions.

Generally, these roles are primarily administrative. Nevertheless, failure to perform these roles owing to the financial distress of the service provider can disrupt payments owed to bondholders.

Trustee

The roles that trustees take in securitizations globally vary significantly when reviewed in the context of financial disruption risk.

In US and Canadian transactions, the trustee holds the transaction's cash in segregated accounts; monitors and notifies investors as well as rating agencies of covenant breaches and events of default; and either acts as the successor servicer, or manages servicing transfers if the original servicer is no longer able to function as servicer. In most US asset-backed securities (ABS), except for some student loan transactions, residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), the trustee is designated to act as a servicer of last resort, i.e., as the successor servicer if the servicer is terminated. However, if the trustee is unwilling or unable to act in this capacity, it may appoint a successor servicer or petition a court to appoint a successor.

In Japan, Australia, Argentina, and in certain Canadian transactions, the trustee is the owner of the receivables and delegates servicing operations to the servicer, which is usually the seller or the sponsor.

In Europe, the Middle East and Africa (EMEA), trustees also have several functions. However, in contrast with the US, Japan and Australia, trustees in EMEA are typically not explicitly responsible for servicing or for finding a replacement. However, in certain circumstances (particularly following an enforcement event), they are likely to initiate the replacement of a defaulting servicer.

The role of the trustees in asset-backed commercial paper (ABCP) programs is primarily relevant when collateral has to be managed and disposed of in case the program defaults.

[188] We take into account servicer quality with regards to administering portfolios and related security in our asset performance and quality analysis.

Additional Specialized Transaction Parties

ABCP Program Administrator

An ABCP program administrator has overall responsibility for the management and operation of an ABCP program. Administration functions are broad in nature and include several functions that affect payment continuity:

» checking that the necessary conditions are satisfied before the purchase of assets and issuance of ABCP

» determining and applying specified priorities in making payments

» issuing and repaying commercial paper

» liquidity and credit enhancement draws

The duties of the administrator vary in complexity depending on the type of ABCP program, the structure of liquidity and credit support, as well as the capital structure and nature of debt issued.

Generally, the administrator's functions are important to ensure timely payments to commercial paper (CP) investors. As such, we focus our analysis on the durability of the entities in these roles. In general, an ABCP administrator is a highly rated entity, or it outsources key functions to highly rated entities.

Administrators in US Student Loan ABS

In some US transactions backed by student loans, administrative duties (including preparing servicing reports and directing the trustee to make cash distributions) are often performed by an administrator who is a separate party from the servicer. The primary servicer, who provides billing and collection services for the loans, is typically a third-party servicer.

Appendix 6: Operational Risk - Illustrative Examples of Application

(See section 4, Operational Risk)

The following examples of application of this methodology are illustrative in nature. These examples do not reflect a representative nor an exhaustive sampling of SFG transactions; rather they reflect examples where additional clarification can be most helpful. Rating committees for particular transactions will review incremental quantitative and qualitative factors not described in the exhibits set forth below and will assess financial disruption risk factors to determine whether mitigants are sufficient for any given rating. Other possible mitigants can include additional credit enhancement. While we describe examples for illustration by region, some examples described in Exhibit 20 and Exhibit 21 can also apply to other regions and markets.

EXHIBIT 20

Illustrative Examples: The Americas

	1	2	3	4	5	6	7
Sample transaction description	US standard ABS	US standard ABS with small and new sponsor-servicer[189]	US ABS sponsored by finance arm of major manufacturer	US CMBS	Brazilian ABS or RMBS	Mexican RMBS	Argentine Consumer ABS with payments in store
1. Durability Assessment	LOW Servicer is rated B1 or lower, or unrated, not new and/or small	LOW Sponsor-servicer is unrated, and is a new and small company	HIGH Servicer is part of a wholly-owned finance arm of major Ba-rated manufacturer whose with large size and scale and strong market position	HIGH Servicer is unrated, but has a very large and established operation as a third-party servicer, and key stakeholders in the servicer include a very high durability institution	LOW Servicer is medium to large size / scale of operations	HIGH Servicer is a Government-related entity rated Baa	LOW Servicer is unrated or B-rated entity
2. Transferability Assessment	HIGH	HIGH	HIGH	HIGH	HIGH	LOW Obligor payments collected through payroll deduction	MEDIUM/LOW Obligors make loan payments in retail stores; however, centralized system tracks loan payments and there have been servicing transfers in the past
3. Rating Caps, if no or limited Mitigants	Single-A category	Single-A rating cap not likely to be achieved	Aaa	Aaa	A category	Rating dependent on durability of service provider, case-by-case	Case-by-case
4a. Key Mitigants	Various combinations of mitigants possible, including elements such as: Master servicer and/or back-up servicer; liquidity; US Trustee language (indenture trustee is obligated to replace servicer or act as the servicer of last resort)	Various combinations of mitigants possible, including elements such as: Master servicer and/or back-up servicer; liquidity; US Trustee language	US Trustee language, liquidity	US Trustee language, liquidity	Master servicer, liquidity		Back-up servicer combined with liquidity, trustee is obligated to replace servicer or act as the servicer of last resort
4b. Rating Caps Including Mitigants	Aaa	Case-by-case; Aaa may be achievable with strong mitigants	Aaa	Aaa	Aaa/Aa (subject to– local currency country ceiling)	Rating dependent on durability of service provider, case-by-case	Case-by-case

Source: Moody's Investors Service

[189] See section 4.4.7 for details.

EXHIBIT 21

Illustrative Examples: Europe and Asia[190]

	1	2	3	4	5	6	7	8
Sample transaction description	European standard ABS and RMBS	European, Japanese or Australian standard ABS or RMBS	European standard ABS or RMBS with multiple servicers[191]	European standard ABS or RMBS with depleted liquidity	Certain non-standard European ABS	European CMBS	Indian ABS with decentralized servicing	China ABS or RMBS
1. Durability Assessment	HIGH Servicer rated at least Baa and servicing platforms of substantial size and scale	LOW Servicer(s) unrated or rated B1 or lower, neither new nor small			LOW Servicer is rated B1 or lower, or unrated, but is not new and/or small	MEDIUM Servicer is unrated, but has a large and established servicing operation as a third-party servicer	MED/LOW Servicer is rated B1 or above	HIGH for Auto ABS, Servicer is part of the finance arm of major manufacturer rated Baa or above. Their size and scale, together with its market position, reduce the risk of servicing disruptions. For RMBS, Servicers are mainly banks with large servicing operations
2. Transferability Assessment	HIGH	HIGH			MEDIUM	HIGH	LOW Assets are subject to decentralized servicing.	MEDIUM
3. Rating Caps, if no or Limited Mitigants	Aaa	Single-A category			Baa category–case-by-case	Aa category	Case by case	Aa category
4a. Key Mitigants	Liquidity	Back-up servicer facilitator combined with liquidity; Back-up servicer combined with liquidity.	Multiple servicers that are related to the same organization able to step in for each other, combined with liquidity	Back-up servicer facilitator, no FX swap-related termination payments	Warm back up servicer, liquidity	Sufficient liquidity coverage, cash manager can draw without instruction	None	Back-up servicer, availability of liquidity
4b. Rating Caps Including Mitigants	Aaa	Aaa	Aa category	Aa category	Aaa/Aa case-by-case	Aaa	Case by case; one such case achieved Baa3 (a back-up servicer with similar geographical coverage as existing servicer could help achieve higher ratings)	Aaa (however, rating would be subject to lower local currency ceiling)

Source: Moody's Investors Service

[190] Example 2 shown in Exhibit 20 is an illustration that could, for example, also be applicable to European or Asian transactions.

[191] See section 4.4.3.4 for details; example could also be applied to master servicer in combination with sponsor-servicer.

Appendix 7: Commingling Risk - Mitigants

(See section 5, Commingling Risk)

The examples below reference structured finance issuers, but similar mitigants may also be available in covered bond programs.

Full Mitigants to Commingling Risk

The following examples describe mitigants which typically fully mitigate commingling risk.

Issuer has ownership of, or an effective first-ranking security over, a collection account held in the name of the servicer with a third party bank

In some jurisdictions, it is possible to exclude the servicer's collection account from its insolvency estate. This may be achieved by law or pursuant to the transaction documents. For example, under English law, a servicer can declare a trust over its collection account in favor of the issuer such that, even if the servicer enters insolvency proceedings, the account is treated as belonging to the issuer and is not available to the general creditors of the servicer.

Alternatively, the servicer may grant the issuer an effective first ranking security over its collection account. We consider a security to be effective if it is duly perfected and the issuer's right to the collection account is not subject to any material deductions or claims from other creditors of the servicer.

In each case, it is important that a third party provides the collection account rather than the servicer itself; otherwise the issuer merely has an interest in an unsecured obligation of the servicer, which does not alleviate the possibility of a commingling loss. It is also important that collections from securitized assets are paid directly into the collection account and that the servicer cannot use these collections as part of its general funds. We view these structural protection as effective if they are activated either from closing or upon the breach of suitable trigger events.[192]

Issuer has priority over general creditors of the servicer

If an issuer's claim with regard to securitized collections has priority over the general creditors of the servicer, by way of securitization-specific legislation or otherwise, we generally assume the issuer will be paid in full from the servicer's insolvency estate.

Additional Mitigants to Commingling Risk

Frequency of Sweeps

A frequent sweep of collections from the servicer's collection account to the issuer's bank account often reduces the commingling exposure. Typically, cash sweeps are less frequent (e.g., monthly) when the servicer's credit quality is equivalent to A2 or P-1 (or better). If the servicer is rated lower or unrated, cash is swept as frequently as daily or every other day. In our analysis, we review the transactions with regards to the sweep frequency to determine the exposure at risk. Sweep frequency is an important structural element that we examine in determining whether the one-month exposure assumption is appropriate for e.g., a European granular RMBS transaction. If we conclude in our analysis that the servicer can commingle cash without any mitigants, we will typically assume a longer exposure period.

[192] We typically consider, for example, Dutch collection foundation accounts or French dedicated accounts governed by article L.214-46-1 of the French code monétaire et financier as comparable mitigants.

Payment Redirection

In some structured finance markets, the transaction documentation provides that when a servicer's rating or, more broadly, other indicators speaking to a servicer's credit quality or servicing performance, deteriorate to or below a certain level, borrowers are notified. The notifications instruct borrowers to redirect their payments, typically directly to the issuer's bank account. As transaction structures and markets differ, we assess these types of triggers on a case-by-case basis. In the event that these triggers are loosely defined or in instances in which the effectiveness is unclear, we may reflect this by assuming a higher commingling exposure.

A Servicer's insolvency official will remit collections to the issuer in accordance with the transaction documents

For certain servicers, the insolvency official will continue to remit collections to the issuer in accordance with the transaction documents. For example, in the US, the Federal Deposit Insurance Corporation has adopted a "safe harbor" rule[193] to this effect and applies the rule in practice in relation to insolvent securitization servicers for which it acts as receiver or conservator.

Additional Credit Enhancement

Commingling risk is also mitigated, in part or in full, through incremental credit enhancement. An issuer's reserve fund may, for example, be increased to cover incremental commingling losses when a servicer is downgraded below a certain rating threshold. For European ABS or RMBS transactions, we account for these types of triggers when the trigger threshold is in the Baa-rating category.

[193] For details on the FDIC securitization safe harbor see "Treatment of financial assets transferred in connection with a securitization or participation," codified at C.F.R. § 360.6.

Appendix 8: Account Banks and Investments – Illustrative Examples

(See section 6.1, Account Banks and Investments: Rating Uplift Benefit, Exposure Category and Rating Caps)

The following examples illustrate how we apply Exhibit 10 and Exhibit 11 to our analysis. These examples are neither representative nor exhaustive; rather they reflect examples with which may be helpful. Rating committees for particular transactions will review incremental quantitative and qualitative factors not described in this Appendix.

» **Example 1:** The account bank is rated A3 and it benefits from a transfer provision set at loss of Baa3 translating into a one notch uplift benefit (see Exhibit 10). At the same time, the investment criteria is set at A2. In this case, the account bank rating and its transfer provision indicate a rating of Aaa ("standard" category) or a rating cap at Aa2 ("strong" category) for the notes (see Exhibit 11), while the investment criteria of A2 fully mitigates the default risk associated with temporary investments. As the account bank risk is not fully mitigated, we proceed with Step 2 and 3 and determine the exposure as well as the rating cap category. Assuming we conclude that the senior notes fall into the "strong" category, the rating cap will be at Aa2. The account bank conditions are "weaker" than the conditions for investments.

The following two examples illustrate Step 2 and 3 of our analysis and Exhibit 22 shows sample outcomes.

» **Example 2:** For a UK RMBS transaction, the account bank is rated A3 with a transfer trigger at loss of Baa3, which results in an "adjusted" account bank rating equivalent to A2. As the rating for the senior notes (Class A) could be either Aaa or capped at Aa2, we proceed with Step 2 and 3 of our analysis.

» **Example 3:** For a UK RMBS transaction, the account bank is rated Baa1 and does not benefit from any transfer provision. As the maximum achievable rating for the senior notes (Class A) could be either Aa2 or A1, we proceed with Step 2 and 3 of our analysis.

EXHIBIT 22

Illustrative Examples 2 and 3

		Example 2				Example 3		
		Class A	Class B	Class C		Class A	Class B	Class C
(Adj.) Account Bank Rating	A2				Baa1			
Rating Before Account Bank Cap	[A]	Aaa	Aa2	A1	[A]	Aaa	Aa2	A1
Subordination	[B]	10%	6%	0%	[B]	10%	6%	0%
Reserve Fund	[C]	2%	2%	2%	[C]	2%	2%	2%
Credit Enhancement	[D] = B + C	12%	8%	2%	[D] = B + C	12%	8%	2%
Lost Collections [a]	[E]	1.50%			[E]	1.50%		
Loss severity [b]	[F]	55%			[F]	55%		
Exposure Ratio	[G]	40%			[G]	40%		
(Formula)	*[H]*	*= (C x F + E) / D*			*[H]*	*= (C x F + E) / D*		
Exposure at risk	[H]	= 22%			[H]	= 22%		
Category	[H]	Standard	Strong	Strong	[H]	Standard	Strong	Strong
Rating Cap (Exhibit 11)	[I]	Aaa	Aa2	Aa2	[I]	Aa2	A1	A1
Rating of Notes incl. Account Bank Cap	[J]	Aaa	Aa2	A1	[J]	Aa2	A1	A1
Difference in number of notches	[A] vs [J]	0 notches	0 notches	0 notches	[A] vs [J]	-2 notches	-2 notches	0 notches

[a] Lost collections typically include interest and principal taking into account possible recoveries, but without specific consideration of payment frequencies on the rated bonds. For other asset classes, such as shorter term consumer loans we would typically use a higher lost collection assumption.

[b] Assumes a recovery rate of 45%.

Source: Moody's Investors Service

Appendix 9: Insurance-Related Set-off Risk in Dutch RMBS and Covered Bonds

(See section 7, Set-off Risk)

Life insurance-related mortgage loans are loans in which a borrower does not repay principal directly to the mortgage lender over the life of the loan, but instead pays insurance premiums to an insurance provider that builds up an amount to be used as principal repayment at loan maturity. If the insurance provider defaults, the borrower may invoke the right of set-off for the amount of the insurance premiums paid into the insurance policy against the mortgage loan, exposing a Dutch RMBS transaction or covered bonds to insurance related set-off risk.

We analyze insurance-related set-off risk in Dutch RMBS when the exposure exceeds 20% of the current pool balance at the end of the contract period or when there are no structural mitigants.[194] In such cases, we review the exposure from and the credit quality of the largest life insurance companies in the portfolio at closing and periodically thereafter when the information is available. To derive the incremental loss, we analyze the default probability of the insurance companies, the exposure together with the portfolio losses. For modeling purposes, we typically consider a simplified benchmark pool of insurance companies to derive default assumptions.

For Dutch residential mortgage covered bond programs with set-off risk related to insurance, we apply a similar approach as for Dutch RMBS.

[194] For example no "Dutch swap."

Moody's Related Publications

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

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

For further information, please refer to *Rating Symbols and Definitions*, which includes a discussion of Moody's Idealized Probabilities of Default and Expected Losses, and which is available here.

» contacts continued from page 1

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