

	high-grade rating, medium-grade
Aa2, Aa3	high-grade
A2, A3	upper-medium
A1, Baa2, Baa3	medium grade
Relative Grade	
Ba1, Ba2, Ba3	specula
B1, B2, B3	subje
Caa1, Caa2, Caa3	bc

# Rating Symbols and Definitions

9 November 2023

## Preface

In the spirit of promoting transparency and clarity, Moody's Standing Committee on Rating Symbols and Definitions offers this updated reference guide which defines Moody's various ratings symbols, rating scales and other ratings-related definitions. In addition to credit ratings, this document contains symbols and definitions for Other Permissible Services, Inputs to Ratings, and Research Transparency Assessments, which are symbols and scores that are not credit ratings.

Since John Moody devised the first bond ratings more than a century ago, Moody's rating systems have evolved in response to the increasing depth and breadth of the global capital markets. Much of the innovation in Moody's rating system has been in response to market needs for increased clarity around the components of credit risk or for finer distinctions in rating classifications.

I invite you to contact us with your comments.

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# Credit Rating Services

## Moody's Global Rating Scales

Ratings assigned on Moody's global long-term and short-term rating scales are forward-looking opinions of the relative credit risks of financial obligations issued by non-financial corporates, financial institutions, structured finance vehicles, project finance vehicles, and public sector entities. Moody's defines credit risk as the risk that an entity may not meet its contractual financial obligations as they come due and any estimated financial loss in the event of default or impairment. The contractual financial obligations<sup>1</sup> addressed by Moody's ratings are those that call for, without regard to enforceability, the payment of an ascertainable amount, which may vary based upon standard sources of variation (e.g., floating interest rates), by an ascertainable date. Moody's rating addresses the issuer's ability to obtain cash sufficient to service the obligation, and its willingness to pay.<sup>2</sup> Moody's ratings do not address non-standard sources of variation in the amount of the principal obligation (e.g., equity indexed), absent an express statement to the contrary in a press release accompanying an initial rating.<sup>3</sup> Long-term ratings are assigned to issuers or obligations with an original maturity of eleven months or more and reflect both on the likelihood of a default or impairment on contractual financial obligations and the expected financial loss suffered in the event of default or impairment. Short-term ratings are assigned to obligations with an original maturity of thirteen months or less and reflect both on the likelihood of a default or impairment on contractual financial obligations and the expected financial loss suffered in the event of default or impairment.<sup>4,5</sup> Moody's issues ratings at the issuer level and instrument level on both the long-term scale and the short-term scale. Typically, ratings are made publicly available although private and unpublished ratings may also be assigned.<sup>6</sup>

Moody's differentiates structured finance ratings from fundamental ratings (i.e., ratings on nonfinancial corporate, financial institution, and public sector entities) on the global long-term scale by adding (sf) to all structured finance ratings.<sup>7</sup> The addition of (sf) to structured finance ratings should eliminate any presumption that such ratings and fundamental ratings at the same letter grade level will behave the same. The (sf) indicator for structured finance security ratings indicates that otherwise similarly rated structured finance and fundamental securities may have different risk characteristics. Through its current methodologies, however, Moody's aspires to achieve broad expected equivalence in structured finance and fundamental rating performance when measured over a long period of time.

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<sup>1</sup> In the case of impairments, there can be a financial loss even when contractual obligations are met. See the definition of Impairment in this publication.

<sup>2</sup> For issuer level ratings, see the definition of Issuer Ratings in this publication. In some cases the relevant credit risk relates to a third party, in addition to, or instead of the issuer. Examples include credit-linked notes and guaranteed obligations.

<sup>3</sup> Because the number of possible features or structures is limited only by the creativity of issuers, Moody's cannot comprehensively catalogue all the types of non-standard variation affecting financial obligations, but examples include equity indexed principal values and cash flows, prepayment penalties, and an obligation to pay an amount that is not ascertainable at the inception of the transaction.

<sup>4</sup> For certain preferred stock and hybrid securities in which payment default events are either not defined or do not match investors' expectations for timely payment, long-term and short-term ratings reflect the likelihood of impairment (as defined below in this publication) and financial loss in the event of impairment.

<sup>5</sup> Debts held on the balance sheets of official sector institutions – which include supranational institutions, central banks and certain government-owned or controlled banks – may not always be treated the same as debts held by private investors and lenders. When it is known that an obligation is held by official sector institutions as well as other investors, a rating (short-term or long-term) assigned to that obligation reflects only the credit risks faced by non-official sector investors.

<sup>6</sup> For information on how to obtain a Moody's credit rating, including private and unpublished credit ratings, please see [Moody's Investors Service Products](#). Please note that Moody's always reserves the right to choose not to assign or maintain a credit rating for its own business reasons.

<sup>7</sup> Like other global scale ratings, (sf) ratings reflect both the likelihood of a default and the expected loss suffered in the event of default. Ratings are assigned based on a rating committee's assessment of a security's expected loss rate (default probability multiplied by expected loss severity), and may be subject to the constraint that the final expected loss rating assigned would not be more than a certain number of notches, typically three to five notches, above the rating that would be assigned based on an assessment of default probability alone. The magnitude of this constraint may vary with the level of the rating, the seasoning of the transaction, and the uncertainty around the assessments of expected loss and probability of default.

## Global Long-Term Rating Scale

<b>Aaa</b>	Obligations rated Aaa are judged to be of the highest quality, subject to the lowest level of credit risk.
<b>Aa</b>	Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.
<b>A</b>	Obligations rated A are judged to be upper-medium grade and are subject to low credit risk.
<b>Baa</b>	Obligations rated Baa are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics.
<b>Ba</b>	Obligations rated Ba are judged to be speculative and are subject to substantial credit risk.
<b>B</b>	Obligations rated B are considered speculative and are subject to high credit risk.
<b>Caa</b>	Obligations rated Caa are judged to be speculative of poor standing and are subject to very high credit risk.
<b>Ca</b>	Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.
<b>C</b>	Obligations rated C are the lowest rated and are typically in default, with little prospect for recovery of principal or interest.

Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category. Additionally, a "(hyb)" indicator is appended to all ratings of hybrid securities issued by banks, insurers, finance companies, and securities firms.\*

Note: For more information on long-term ratings assigned to obligations in default, please see the definition "Long-Term Credit Ratings for Defaulted or Impaired Securities" in the Other Definitions section of this publication.

*\* By their terms, hybrid securities allow for the omission of scheduled dividends, interest, or principal payments, which can potentially result in impairment if such an omission occurs. Hybrid securities may also be subject to contractually allowable write-downs of principal that could result in impairment. Together with the hybrid indicator, the long-term obligation rating assigned to a hybrid security is an expression of the relative credit risk associated with that security.*

## Global Short-Term Rating Scale

<b>P-1</b>	Ratings of Prime-1 reflect a superior ability to repay short-term obligations.
<b>P-2</b>	Ratings of Prime-2 reflect a strong ability to repay short-term obligations.
<b>P-3</b>	Ratings of Prime-3 reflect an acceptable ability to repay short-term obligations.
<b>NP</b>	Issuers (or supporting institutions) rated Not Prime do not fall within any of the Prime rating categories.

## Standard Linkage Between the Global Long-Term and Short-Term Rating Scales

The following table indicates the long-term ratings consistent with different short-term ratings when such long-term ratings exist.<sup>8</sup>

LONG-TERM RATING	SHORT-TERM RATING
Aaa Aa1 Aa2 Aa3 A1 A2 A3	Prime-1
Baa1 Baa2 Baa3	
Ba1, Ba2, Ba3 B1, B2, B3, Caa1, Caa2, Caa3 Ca, C	Not Prime

## Obligations and Issuers Rated on the Global Long-Term and Short-Term Rating Scales

### Deposit Ratings

Deposit Ratings are opinions of a deposit-taking institution's ability to repay punctually its foreign and/or domestic currency deposit obligations and also reflect the expected financial loss of the default. Deposit Ratings do not apply to deposits that are subject to a public or private insurance scheme; rather, the ratings apply to the most junior class of uninsured deposits, but they may in some cases incorporate the possibility that official support might in certain cases extend to the most junior class of uninsured as well as preferred and insured deposits. Foreign currency deposit ratings are subject to Moody's foreign currency country ceilings which may result in the assignment of a different (and typically lower) rating for the foreign currency deposits relative to the deposit-taking institution's rating for domestic currency deposits.

### Clearing Counterparty Ratings

A Clearing Counterparty Rating (CCR) reflects Moody's opinion of a Central Counterparty Clearing House's (CCP) ability to meet the timely clearing and settlement of clearing obligations by the CCP as well as the expected financial loss in the event the obligation is not fulfilled. A CCR can be assigned at a CCP legal entity or clearing service level to the extent a legal entity operates multiple clearing services.

### Counterparty Risk Ratings (CRR)

CRRs are opinions of the ability of entities to honor their non-debt financial liabilities, typically to unrelated counterparties (CRR liabilities), such as derivatives and sale and repurchase transactions. CRRs also reflect the expected financial losses not covered by collateral, in the event such liabilities are not honored. For clarity, CRRs are not applicable to funding commitments or other obligations associated with covered bonds, letters of credit, guarantees, servicer and trustee obligations, and other similar obligations that arise from a bank performing its essential operating functions.

<sup>8</sup> Structured finance short-term ratings are usually based either on the short-term rating of a support provider or on an assessment of cash flows available to retire the financial obligation.

## Corporate Family Ratings

Moody's Corporate Family Ratings (CFRs) are long-term ratings that reflect the relative likelihood of a default on a corporate family's debt and debt-like obligations and the expected financial loss suffered in the event of default. A CFR is assigned to a corporate family as if it had a single class of debt and a single consolidated legal entity structure. CFRs are generally employed for speculative grade obligors. Under certain very limited circumstances, CFRs may also be assigned to investment grade obligors. The CFR normally applies to all affiliates under the management control of the entity to which it is assigned. For financial institutions or other complex entities, CFRs may also be assigned to an association or group where the group may not exercise full management control, but where strong intra-group support and cohesion among individual group members may warrant a rating for the group or association. A CFR does not reference an obligation or class of debt and thus does not reflect priority of claim.

## Credit Default Swap Ratings

Credit Default Swap Ratings measure the risk associated with the obligations that a credit protection provider has with respect to credit events under the terms of the transaction. The ratings do not address potential losses resulting from an early termination of the transaction, nor any market risk associated with the transaction.

## Enhanced Ratings

Enhanced Ratings only pertain to US municipal securities. Enhanced ratings are assigned to obligations that benefit from third-party credit or liquidity support, including state aid intercept programs. They primarily reflect the credit quality of the support provider, and, in some cases, also reflect the credit quality of the underlying obligation. Enhanced ratings do not incorporate support based on insurance provided by financial guarantors.

## Insurance Financial Strength Ratings

Insurance Financial Strength Ratings are opinions of the ability of insurance companies to punctually pay senior policyholder claims and obligations and also reflect the expected financial loss suffered in the event of default.

## Insured Ratings

An insured or wrapped rating is Moody's assessment of a particular obligation's credit quality given the credit enhancement provided by a financial guarantor. Moody's insured ratings apply a credit substitution methodology, whereby the debt rating matches the higher of (i) the guarantor's financial strength rating and (ii) any published underlying or enhanced rating on the security.

## Issuer Ratings

Issuer Ratings are opinions of the ability of entities to honor senior unsecured debt and debt like obligations.<sup>9,10</sup> As such, Issuer Ratings incorporate any external support that is expected to apply to all current and future issuance of senior unsecured financial obligations and contracts, such as explicit support stemming from a guarantee of all senior unsecured financial obligations and contracts, and/or implicit support for issuers subject to joint default analysis (e.g. banks and government-related issuers). Issuer Ratings do not incorporate support arrangements, such as guarantees, that apply only to specific (but not to all) senior unsecured financial obligations and contracts.

While Issuer Ratings reflect the risk that debt and debt-like claims are not serviced on a timely basis, they do not reflect the risk that a contract or other non-debt obligation will be subjected to commercial disputes. Additionally, while an issuer may have senior unsecured obligations held by both supranational institutions and central banks (e.g., IMF, European Central Bank), as well as other investors, Issuer Ratings reflect only the risks faced by other investors.

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<sup>9</sup> Issuer Ratings as applied to US local government special purpose districts typically reflect an unlimited general obligation pledge which may have security and structural features in some states that improve credit quality for general obligation bondholders but not necessarily for other counterparties holding obligations that may lack such features. An Issuer Rating as applied to a US state, territory, K-12 public school district, city or county reflects its ability to repay debt and debt-like obligations without consideration of any pledge, security or structural features.

<sup>10</sup> These opinions exclude debt known to be held by official sector investors because in practice such debt could effectively be treated as either senior or junior to senior unsecured debt held by private sector investors.



## Long-Term and Short-Term Obligation Ratings

Moody's assigns ratings to long-term and short-term financial obligations. Long-term ratings are assigned to issuers or obligations with an original maturity of eleven months or more and reflect both on the likelihood of a default or impairment on contractual financial obligations and the expected financial loss suffered in the event of default or impairment. Short-term ratings are assigned to obligations with an original maturity of thirteen months or less and reflect both on the likelihood of a default or impairment on contractual financial obligations and the expected financial loss suffered in the event of default or impairment.

## Medium-Term Note Program Ratings

Moody's assigns provisional ratings to medium-term note (MTN) or similar programs and definitive ratings to the individual debt securities issued from them (referred to as drawdowns or notes).

MTN program ratings are intended to reflect the ratings likely to be assigned to drawdowns issued from the program with the specified priority of claim (e.g. senior or subordinated). To capture the contingent nature of a program rating, Moody's assigns provisional ratings to MTN programs. A provisional rating is denoted by a (P) in front of the rating and is defined elsewhere in this document.

The rating assigned to a drawdown from a rated MTN or bank/deposit note program is definitive in nature, and may differ from the program rating if the drawdown is exposed to additional credit risks besides the issuer's default, such as links to the defaults of other issuers, or has other structural features that warrant a different rating. In some circumstances, no rating may be assigned to a drawdown.

Moody's encourages market participants to contact Moody's Ratings Desks or visit [moodys.com](http://moodys.com) directly if they have questions regarding ratings for specific notes issued under a medium-term note program. Unrated notes issued under an MTN program may be assigned an NR (not rated) symbol.

## Pledge-Specific Ratings

Pledge-specific ratings are opinions of the ability of a US state, local government, related entity, or nonprofit issuer to honor debt and debt-like obligations based upon specific security payment pledges or structural features.

## Structured Finance Counterparty Instrument Ratings

Structured Finance Counterparty Instrument Ratings are assigned to a financial contract and measure the risk posed to a counterparty arising from a special purpose entity's (SPE's) default with respect to its obligations under the referenced financial contract.

## Structured Finance Counterparty Ratings

Structured Finance Counterparty Ratings are assigned to structured financial operating companies and are founded upon an assessment of their ability and willingness to honor their obligations under financial contracts.

## Structured Finance Interest Only Security (IO) Ratings

A structured finance IO is a stream of cash flows that is a fraction of the interest flows from one or multiple referenced securities or assets in a structured finance transaction. IO ratings address the likelihood and degree to which payments made to the IO noteholders will be impacted by credit losses to the security, securities or assets referenced by the IO. Such IO securities generally do not have a principal balance. Other non-credit risks, such as a prepayment of the referenced securities or assets, are not addressed by the rating, although they may impact payments made to the noteholders.

## Underlying Ratings

An underlying rating is Moody's assessment of a particular obligation's credit quality absent any insurance or wrap from a financial guarantor or other credit enhancement.

For US municipal securities, the underlying rating will reflect the underlying issue's standalone credit quality absent any credit support provided by a state credit enhancement program.

## US Municipal Short-Term Debt and Demand Obligation Ratings

We use the global short-term Prime rating scale for commercial paper issued by US municipalities and nonprofits. These commercial paper programs may be backed by external letters of credit or liquidity facilities, or by an issuer's self-liquidity.

For other short-term municipal obligations, we use one of two other short-term rating scales, the Municipal Investment Grade (MIG) and Variable Municipal Investment Grade (VMIG) scales discussed below.

### MIG Ratings

We use the MIG scale for US municipal cash flow notes, bond anticipation notes and certain other short-term obligations, which typically mature in three years or less.

MIG Scale	
<b>MIG 1</b>	This designation denotes superior credit quality. Excellent protection is afforded by established cash flows, highly reliable liquidity support, or demonstrated broad-based access to the market for refinancing.
<b>MIG 2</b>	This designation denotes strong credit quality. Margins of protection are ample, although not as large as in the preceding group.
<b>MIG 3</b>	This designation denotes acceptable credit quality. Liquidity and cash-flow protection may be narrow, and market access for refinancing is likely to be less well-established.
<b>SG</b>	This designation denotes speculative-grade credit quality. Debt instruments in this category may lack sufficient margins of protection.

### VMIG Ratings

For variable rate demand obligations (VRDOs), Moody's assigns both a long-term rating and a short-term payment obligation rating. The long-term rating addresses the issuer's ability to meet scheduled principal and interest payments. The short-term payment obligation rating addresses the ability of the issuer or the liquidity provider to meet any purchase price payment obligation resulting from optional tenders ("on demand") and/or mandatory tenders of the VRDO. The short-term payment obligation rating uses the VMIG scale. Transitions of VMIG ratings with conditional liquidity support differ from transitions of Prime ratings reflecting the risk that external liquidity support will terminate if the issuer's long-term rating drops below investment grade. Please see our methodology that discusses obligations with conditional liquidity support.

For VRDOs, we typically assign a VMIG rating if the frequency of the payment obligation is less than every three years. If the frequency of the payment obligation is less than three years, but the obligation is payable only with remarketing proceeds, the VMIG short-term rating is not assigned and it is denoted as "NR".

Industrial development bonds in the US where the obligor is a corporate may carry a VMIG rating that reflects Moody's view of the relative likelihood of default and loss. In these cases, liquidity assessment is based on the liquidity of the corporate obligor.

VMIG Scale	
<b>VMIG 1</b>	This designation denotes superior credit quality. Excellent protection is afforded by the superior short-term credit strength of the liquidity provider and structural and legal protections.
<b>VMIG 2</b>	This designation denotes strong credit quality. Good protection is afforded by the strong short-term credit strength of the liquidity provider and structural and legal protections.
<b>VMIG 3</b>	This designation denotes acceptable credit quality. Adequate protection is afforded by the satisfactory short-term credit strength of the liquidity provider and structural and legal protections.
<b>SG</b>	This designation denotes speculative-grade credit quality. Demand features rated in this category may be supported by a liquidity provider that does not have a sufficiently strong short-term rating or may lack the structural or legal protections.

### Standard Linkages Between the Long-Term and MIG and VMIG Short-Term Rating Scales

The following table indicates the municipal long-term ratings consistent with the highest potential MIG and VMIG short-term ratings. The rating may be lower than indicated by this table when there are higher risks for investors.

LONG-TERM RATING	SHORT-TERM MIG AND VMIG RATINGS
Aaa Aa1 Aa2 Aa3 A1 A2 A3	MIG 1 / VMIG 1
Baa1	MIG 2 / VMIG 2
Baa2 Baa3	MIG 3 / VMIG 3
Ba1, Ba2, Ba3 B1, B2, B3, Caa1, Caa2, Caa3 Ca, C	SG

## National Scale Long-Term Ratings

Moody's long-term National Scale Ratings (NSRs) are opinions of the relative creditworthiness of issuers and financial obligations within a particular country. NSRs are not designed to be compared among countries; rather, they address relative credit risk within a given country. Moody's assigns national scale ratings in certain local capital markets in which investors have found the global rating scale provides inadequate differentiation among credits or is inconsistent with a rating scale already in common use in the country.

In each specific country, the last two characters of the rating indicate the country in which the issuer is located or the financial obligation was issued (e.g., Aaa.ke for Kenya).

Long-Term NSR Scale	
<b>Aaa.n</b>	Issuers or issues rated Aaa.n demonstrate the strongest creditworthiness relative to other domestic issuers and issuances.
<b>Aa.n</b>	Issuers or issues rated Aa.n demonstrate very strong creditworthiness relative to other domestic issuers and issuances.
<b>A.n</b>	Issuers or issues rated A.n present above-average creditworthiness relative to other domestic issuers and issuances.
<b>Baa.n</b>	Issuers or issues rated Baa.n represent average creditworthiness relative to other domestic issuers and issuances.
<b>Ba.n</b>	Issuers or issues rated Ba.n demonstrate below-average creditworthiness relative to other domestic issuers and issuances.
<b>B.n</b>	Issuers or issues rated B.n demonstrate weak creditworthiness relative to other domestic issuers and issuances.
<b>Caa.n</b>	Issuers or issues rated Caa.n demonstrate very weak creditworthiness relative to other domestic issuers and issuances.
<b>Ca.n</b>	Issuers or issues rated Ca.n demonstrate extremely weak creditworthiness relative to other domestic issuers and issuances.
<b>C.n</b>	Issuers or issues rated C.n demonstrate the weakest creditworthiness relative to other domestic issuers and issuances.

Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category.

## National Scale Short-Term Ratings

Moody's short-term NSRs are opinions of the ability of issuers or issuances in a given country, relative to other domestic issuers or issuances, to repay debt obligations that have an original maturity not exceeding thirteen months. Short-term NSRs in one country should not be compared with short-term NSRs in another country, or with Moody's global ratings.

There are four categories of short-term national scale ratings, generically denoted N-1 through N-4 as defined below.

In each specific country, the first two letters indicate the country in which the issuer is located (e.g., KE-1 through KE-4 for Kenya).

Short-Term NSR Scale	
<b>N-1</b>	N-1 issuers or issuances represent the strongest likelihood of repayment of short-term debt obligations relative to other domestic issuers or issuances.
<b>N-2</b>	N-2 issuers or issuances represent an above average likelihood of repayment of short-term debt obligations relative to other domestic issuers or issuances.
<b>N-3</b>	N-3 issuers or issuances represent an average likelihood of repayment of short-term debt obligations relative to other domestic issuers or issuances.
<b>N-4</b>	N-4 issuers or issuances represent a below average likelihood of repayment of short-term debt obligations relative to other domestic issuers or issuances.

Note: The short-term rating symbols P-1.za, P-2.za, P-3.za and NP.za are used in South Africa.

The symbols for the long-term and short-term NSRs are:

- » Czech Republic (.cz)
- » Kazakhstan (.kz)
- » Kenya (.ke)
- » Lebanon (.lb)
- » Morocco (.ma)
- » Nigeria (.ng)
- » Saudi Arabia (.sa)
- » Slovakia (.sk)
- » South Africa (.za)
- » Tunisia (.tn)
- » Turkiye (.tr)
- » Ukraine (.ua)

## Probability of Default Ratings

A probability of default rating (PDR) is a corporate family- level opinion of the relative likelihood that any entity within a corporate family will default on one or more of its long-term debt obligations. For families in default on all of their long-term debt obligations (such as might be the case in bankruptcy), a PDR of D-PD is assigned. For families in default on a limited set of their debt obligations, the PDR is appended by the indicator “/LD”, for example, Caa1-PD/LD.

A D-PD probability of default rating is not assigned (or /LD indicator appended) until a failure to pay interest or principal extends beyond any grace period specified by the terms of the debt obligation.

A D-PD probability of default rating is not assigned (or /LD indicator appended) for distressed exchanges until they have been completed, as opposed to simply announced.

Adding or removing the “/LD” indicator to an existing PDR is not a credit rating action.

PDR Scale	
<b>Aaa-PD</b>	Corporate families rated Aaa-PD are judged to be of the highest quality, subject to the lowest level of default risk.
<b>Aa-PD</b>	Corporate families rated Aa-PD are judged to be of high quality and are subject to very low default risk.
<b>A-PD</b>	Corporate families rated A-PD are judged to be upper-medium grade and are subject to low default risk.
<b>Baa-PD</b>	Corporate families rated Baa-PD are judged to be medium-grade and subject to moderate default risk and as such may possess certain speculative characteristics.
<b>Ba-PD</b>	Corporate families rated Ba-PD are judged to be speculative and are subject to substantial default risk.
<b>B-PD</b>	Corporate families rated B-PD are considered speculative and are subject to high default risk.
<b>Caa-PD</b>	Corporate families rated Caa-PD are judged to be speculative of poor standing, subject to very high default risk, and may be in default on some but not all of their long-term debt obligations.
<b>Ca-PD</b>	Corporate families rated Ca-PD are highly speculative and are likely in, or very near, default on some but not all of their long-term debt obligations.
<b>C-PD</b>	Corporate families rated C-PD are the lowest rated and are typically in default on some but not all of their long-term debt obligations.
<b>D-PD</b>	Corporate families rated D are in default on all of their long-term debt obligations.

Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa-PD through Caa-PD (e.g., Aa1-PD). The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category.

## Other Permissible Services

### Bond Fund Ratings

Bond Fund Ratings are opinions of the maturity-adjusted credit quality of investments within mutual funds and similar investment vehicles that principally invest in fixed income obligations. As such, these ratings primarily reflect Moody's assessment of the creditworthiness of the assets held by the fund, adjusted for maturity. Other risks, such as liquidity, operational, interest rate, currency and any other market risk, are excluded from the rating. Bond fund ratings specifically do not consider the historic, current, or prospective performance of a fund with respect to appreciation, volatility of net asset value, or yield.

Bond Fund Rating Scale	
<b>Aaa-bf</b>	Bond Funds rated Aaa-bf generally hold assets judged to be of the highest credit quality.
<b>Aa-bf</b>	Bond Funds rated Aa-bf generally hold assets judged to be of high credit quality.
<b>A-bf</b>	Bond Funds rated A-bf generally hold assets considered upper-medium credit quality.
<b>Baa-bf</b>	Bond Funds rated Baa-bf generally hold assets considered medium credit quality.
<b>Ba-bf</b>	Bond Funds rated Ba-bf generally hold assets judged to have speculative elements.
<b>B-bf</b>	Bond Funds rated B-bf generally hold assets considered to be speculative.
<b>Caa-bf</b>	Bond Funds rated Caa-bf generally hold assets judged to be of poor standing.
<b>Ca-bf</b>	Bond Funds rated Ca-bf generally hold assets that are highly speculative and that are likely in, or very near, default, with some prospect of recovery of principal and interest.
<b>C-bf</b>	Bond Funds rated C-bf generally hold assets that are in default, with little prospect for recovery of principal or interest.

## Equity Fund Assessments

Moody's equity fund assessments are opinions of the relative investment quality of investment funds which principally invest in common stock or in a combination of common stock and fixed-income securities. Investment quality is typically judged based on the fund's historical performance relative to funds employing a similar investment strategy, as well as on the quality of the fund manager. The assessments are not opinions on prospective performance of a fund with respect to asset appreciation, volatility of net asset value or yield. They are not intended to be used to compare funds in different countries or even funds in the same country that are pursuing different investment strategies (e.g. balanced funds vs. equity funds).

Equity Fund Assessment Scale	
EF-1	Equity funds assessed at EF-1 have the highest investment quality relative to funds with a similar investment strategy.
EF-2	Equity funds assessed at EF-2 have high investment quality relative to funds with a similar investment strategy.
EF-3	Equity funds assessed at EF-3 have moderate investment quality relative to funds with a similar investment strategy.
EF-4	Equity funds assessed at EF-4 have low investment quality relative to funds with a similar investment strategy.
EF-5	Equity funds assessed at EF-5 have the lowest investment quality relative to funds with a similar investment strategy.

## Indicative Ratings

An Indicative Rating is a confidential, unpublished, unmonitored, point-in-time opinion of the potential Credit Rating(s) of an issuer or a proposed debt issuance by an issuer contemplating such a debt issuance at some future date. Indicative Ratings are not equivalent to and do not represent traditional MIS Credit Ratings. However, Indicative Ratings are expressed on MIS's traditional rating scale.

## Investment Manager Quality Assessments

Moody's Investment Manager Quality assessments are forward- looking opinions of the relative investment expertise and service quality of asset managers. An MQ assessment provides an additional tool for investors to aid in their investment decision- making process. Moody's MQ assessments provide general insights into the quality of an asset manager, including how it manages its investment offerings and serves its clientele.

MQ assessments do not indicate an asset manager's ability to repay a fixed financial obligation or satisfy contractual financial obligations, neither those entered by the firm nor any that may have been entered into through actively managed portfolios.

The assessments are also not intended to evaluate the performance of a portfolio, mutual fund, or other investment vehicle with respect to appreciation, volatility of net asset value, or yield. Instead, MQ assessments are opinions about the quality of an asset manager's management and client service characteristics as expressed through the symbols below.



Investment Manager Quality assessment definitions are as follows:

Manager Quality Assessment Scale	
<b>MQ1</b>	Investment managers assessed at MQ1 exhibit excellent management characteristics.
<b>MQ2</b>	Investment managers assessed at MQ2 exhibit very good management characteristics.
<b>MQ3</b>	Investment managers assessed at MQ3 exhibit good management characteristics.
<b>MQ4</b>	Investment managers assessed at MQ4 exhibit adequate management characteristics.
<b>MQ5</b>	Investment managers assessed at MQ5 exhibit poor management characteristics.

## Money Market Fund Ratings

Moody's Money Market Fund Ratings are opinions of the investment quality of shares in mutual funds and similar investment vehicles which principally invest in short-term fixed income obligations. As such, these ratings incorporate Moody's assessment of a fund's published investment objectives and policies, the creditworthiness of the assets held by the fund, the liquidity profile of the fund's assets relative to the fund's investor base, the assets' susceptibility to market risk, as well as the management characteristics of the fund. The ratings are not intended to consider the prospective performance of a fund with respect to appreciation, volatility of net asset value, or yield.

Money Market Fund Rating Scale	
<b>Aaa-mf</b>	Money market funds rated Aaa-mf have very strong ability to meet the dual objectives of providing liquidity and preserving capital.
<b>Aa-mf</b>	Money market funds rated Aa-mf have strong ability to meet the dual objectives of providing liquidity and preserving capital.
<b>A-mf</b>	Money market funds rated Aa-mf have moderate ability to meet the dual objectives of providing liquidity and preserving capital.
<b>Baa-mf</b>	Money market funds rated Baa-mf have marginal ability to meet the dual objectives of providing liquidity and preserving capital.
<b>B-mf</b>	Money market funds rated B-mf are unable to meet the objective of providing liquidity and have marginal ability to meet the objective of preserving capital.
<b>C-mf</b>	Money market funds rated C-mf are unable to meet either objective of providing liquidity or preserving capital.

## Net Zero Assessments

A Net Zero Assessment (NZA) represents our opinion of the strength of an entity's emissions reduction profile relative to a global net zero pathway consistent with the most ambitious goals of the 2015 Paris Agreement on climate change of limiting temperature increases to 1.5°C, with global net zero achieved in 2050. The assessment has three components: Ambition, Implementation, and Greenhouse Gases (GHG) Governance. Net Zero Assessments are expressed on a five-point scale that represents gradations of meaningful carbon transition profiles. Net Zero Assessments are point-in-time opinions.

Net Zero Assessment Scale	
Score	Definition
NZ-1	The entity has a leading emissions reduction profile. Its emissions reduction targets are consistent with an ambition to limit temperature increases to at most 1.5 degrees Celsius. Implementation and governance oversights are supportive of reaching the ambitious targets.
NZ-2	The entity has an advanced emissions reduction profile. Its emissions reduction targets are consistent with an ambition to limit temperature increases to at most well below 2 degrees Celsius. Where targets are more ambitious, the score is constrained by implementation or governance risks.
NZ-3	The entity has a significant emissions reduction profile. Its emissions reduction targets are consistent with an ambition to limit temperature increases to at most 2 degrees Celsius. Where targets are more ambitious, the score is constrained by implementation or governance risks that are more material than for an NZ-2.
NZ-4	The entity has a constructive emissions reduction profile. Its emissions reduction targets are consistent with an ambition to limit temperature increases to at most 2.3 degrees Celsius. Where targets are more ambitious, the score is constrained by implementation or governance risks that are more material than for an NZ-3.
NZ-5 <sup>[1]</sup>	The entity has a limited emissions reduction profile. Its emissions reduction targets are consistent with an ambition to limit temperature increases to at most 2.5 degrees Celsius. Some entities in this category may have more ambitious targets, but the score is constrained by implementation or governance risks that are more material than for an NZ-4.

[1] We do not provide Net Zero Assessments to entities whose carbon transition profiles do not imply a meaningful contribution towards climate goals, which we define as an implied temperature rise of 2.5 degrees Celsius or below relative to pre-industrial levels.

Source: Moody's Investors Service

## Originator Assessments

Moody's Originator Assessments (OAs) provide general insights into the operational quality of originators' loan origination practices, relative to other originators of the same type of loans within a given country.

Moody's assigns originators one of the following five assessment levels: Strong, Above Average, Average, Below Average, Weak.

## Rating Assessment Services

The Rating Assessment Service or RAS is a confidential, unpublished, unmonitored, point-in-time opinion relating to potential Credit Rating(s), or the potential impact on the current Credit Rating(s), given one or more hypothetical Scenario(s) (defined below) communicated to MIS in writing by a Rated Entity or other applicant. Rating Assessments are not equivalent to and do not represent traditional MIS Credit Ratings. However, Rating Assessments are expressed on or referenced to MIS's traditional rating scale.

A Scenario is (1) a proposed credit transforming transaction, project and/or debt issuance which materially alters the issuer's current state (including acquisitions, disposals, share buybacks, listings, initial public offerings and material restructurings) or (2) a proposed initial transaction, project and/or debt issuance; or materially different variation on any such transaction, project and/or debt issuance, including a material change in the overall size of the debt being contemplated.

## Second Party Opinions - Sustainability Quality Scores

Moody's Second Party Opinions provide an assessment of how financial instruments or financing frameworks align to relevant sustainability principles and the extent to which they are expected to contribute to the issuer's advancement of long-term sustainable development. Moody's Second Party Opinions consider alignment with principles and contribution to sustainability. We express the overall assessment through the Sustainability Quality Score. Second Party Opinions are point-in-time opinions.

### Second Party Opinion - Sustainability Quality Scores Scale

<b>SQS1</b>	The financial instrument or financing framework is overall considered to be of excellent sustainability quality. Documentation and information are aligned with relevant principles and exhibit a high level of transparency and issuer accountability consistent with best practices, and the instrument or framework is expected to make a high contribution to the issuer's advancement of long-term sustainable development.
<b>SQS2</b>	The financial instrument or financing framework is overall considered to be of very good sustainability quality. Documentation and information are at least aligned with relevant principles and the instrument or framework is expected to make at least a significant contribution to the issuer's advancement of long-term sustainable development.
<b>SQS3</b>	The financial instrument or financing framework is overall considered to be of good sustainability quality. Documentation and information are typically at least aligned with relevant principles and the instrument or framework is expected to make at least a moderate contribution to the issuer's advancement of long-term sustainable development, or the documentation or information is partially aligned with relevant principles and is balanced by an expected high contribution.
<b>SQS4</b>	The financial instrument or financing framework is overall considered to be of intermediate sustainability quality. There are some weaknesses identified in the alignment of the documentation and information with relevant principles or in the contribution the financial instrument or financing framework is expected to make to the issuer's advancement of long-term sustainable development, with limited offsetting strengths.
<b>SQS5</b>	The financial instrument or financing framework is overall considered to be of weak sustainability quality. There are material weaknesses identified in the alignment of the documentation and information or in the contribution the financial instrument or financing framework is expected to make to the issuer's advancement of long-term sustainable development, with no or very limited offsetting strengths.

## Servicer Quality Assessments

Moody's Servicer Quality Assessments (SQAs) provide general insights into the operational quality of servicers' loan servicing practices, relative to other servicers performing the same servicing role within a given country. SQAs are provided for servicers who act as the Primary Servicer (servicing the assets from beginning to end), Special Servicer (servicing only the more delinquent assets), or Master Servicer (overseeing the performance and reporting from underlying servicers). Each SQA is assigned for a specific servicing role by reference to the servicing activity and product type.

Servicer Quality Assessment Scale	
SQ1	Strong.
SQ2	Above average.
SQ3	Average.
SQ4	Below average.
SQ5	Weak.

Note: Where appropriate, a "+" or "-" modifier will be appended to the SQ2, SQ3, and SQ4 rating categories, a "-" modifier will be appended to the SQ1 assessment category and a "+" modifier will be appended to the SQ5 assessment category. A "+" modifier indicates the servicer ranks in the higher end of the designated assessment category. A "-" modifier indicates the servicer ranks in the lower end of the designated assessment category.

## Other Rating Symbols

### Provisional Ratings - (P)

Moody's will often assign a provisional rating to an issuer or an instrument when the change to a definitive rating is subject to the fulfillment of contingencies that could affect the rating. Examples of such contingencies are the finalization of transaction documents/terms where a rating is sensitive to changes at closing. When such contingencies are not present, a definitive rating may be assigned based upon documentation that is not yet in final form. Moody's will also often assign provisional ratings to program ratings, such as shelf registrations and medium term note programs. A provisional rating is denoted by placing a (P) in front of the rating. The (P) notation provides additional information about the rating, but does not indicate a different rating. For example, a provisional rating of (P)Aa1 is the same rating as Aa1.

For provisional ratings assigned to an issuer or instrument, the (P) notation is removed when the applicable contingencies have been fulfilled. A Credit Rating Action to remove the (P) notation indicates that the rating is no longer subject to contingencies, and changes the provisional rating to a definitive rating.<sup>11</sup> Program ratings for shelf registrations and other issuance programs remain provisional, while the subsequent ratings of issuances under these programs are assigned as definitive ratings.

### Refundeds - #

Issues that are secured by escrowed funds held in trust, reinvested in direct, non-callable US government obligations or non-callable obligations unconditionally guaranteed by the US Government or Resolution Funding Corporation are identified with a # (hash mark) symbol, e.g., #Aaa.

### Withdrawn - WR

When Moody's no longer rates an obligation on which it previously maintained a rating, the symbol WR is employed. Please see Moody's Guidelines for the Withdrawal of Ratings, available on [www.moody.com](http://www.moody.com).

### Not Rated - NR

NR is assigned to an unrated issuer, obligation and/or program.

### Not Available - NAV

An issue that Moody's has not yet rated is denoted by the NAV symbol.

### Terminated Without Rating - TWR

The symbol TWR applies primarily to issues that mature or are redeemed without having been rated.

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<sup>11</sup> Provisional ratings may also be assigned to unexecuted credit default swap contracts or other debt-like obligations that define specific credit risk exposures facing individual financial institutions. In such cases, the drafter of the swap or other debt-like obligation may have no intention of executing the agreement, and, therefore, the provisional notation is unlikely to ever be removed.

# Research Transparency Assessments

## **Covenant Quality Assessments**

Moody's covenant quality assessments measure the investor protections provided by key bond covenants within an indenture. The assessments are unmonitored, point-in-time scores, but may be updated as circumstances dictate. Key covenants assessed include provisions for restricted payments, change of control, limitations on debt incurrence, negative pledges, and merger restrictions, among others.

# Inputs to Rating Services

Inputs to Rating Services are not Credit Ratings and they are expressed using differentiated symbols to distinguish them from Credit Ratings. Their use in helping to assign Credit Ratings is described in the respective Credit Rating Methodologies where they are used.

## Baseline Credit Assessments

Baseline credit assessments (BCAs) are opinions of issuers' standalone intrinsic strength, absent any extraordinary support from an affiliate<sup>12</sup> or a government. BCAs are essentially an opinion on the likelihood of an issuer requiring extraordinary support to avoid a default on one or more of its debt obligations or actually defaulting on one or more of its debt obligations in the absence of such extraordinary support.

As probability measures, BCAs do not provide an opinion on the severity of a default that would occur in the absence of extraordinary support.

Contractual relationships between a government or an affiliate and a supported issuer and any expected ongoing annual subsidies from the government or an affiliate are incorporated in BCAs and, therefore, are considered intrinsic to an issuer's standalone financial strength. Extraordinary support is typically idiosyncratic in nature and is extended to prevent an issuer from becoming nonviable.

BCAs are expressed on a lower-case alpha-numeric scale that corresponds to the alpha-numeric ratings of the global long-term rating scale.

BCA Scale	
aaa	Issuers assessed aaa are judged to have the highest intrinsic, or standalone, financial strength, and thus subject to the lowest level of credit risk absent any possibility of extraordinary support from an affiliate or a government.
aa	Issuers assessed aa are judged to have high intrinsic, or standalone, financial strength, and thus subject to very low credit risk absent any possibility of extraordinary support from an affiliate or a government.
a	Issuers assessed a are judged to have upper-medium-grade intrinsic, or standalone, financial strength, and thus subject to low credit risk absent any possibility of extraordinary support from an affiliate or a government.
baa	Issuers assessed baa are judged to have medium-grade intrinsic, or standalone, financial strength, and thus subject to moderate credit risk and, as such, may possess certain speculative credit elements absent any possibility of extraordinary support from an affiliate or a government.
ba	Issuers assessed ba are judged to have speculative intrinsic, or standalone, financial strength, and are subject to substantial credit risk absent any possibility of extraordinary support from an affiliate or a government.
b	Issuers assessed b are judged to have speculative intrinsic, or standalone, financial strength, and are subject to high credit risk absent any possibility of extraordinary support from an affiliate or a government.
caa	Issuers assessed caa are judged to have speculative intrinsic, or standalone, financial strength, and are subject to very high credit risk absent any possibility of extraordinary support from an affiliate or a government.
ca	Issuers assessed ca have highly speculative intrinsic, or standalone, financial strength, and are likely to be either in, or very near, default, with some prospect for recovery of principal and interest; or, these issuers have avoided default or are expected to avoid default through the provision of extraordinary support from an affiliate or a government.
c	Issuers assessed c are typically in default, with little prospect for recovery of principal or interest; or, these issuers are benefiting from a government or affiliate support but are likely to be liquidated over time; without support there would be little prospect for recovery of principal or interest.
Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic assessment classification from aa through caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic assessment category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic assessment category.	

<sup>12</sup> Affiliate includes a parent, cooperative groups and significant investors (typically with a greater than 20 percent voting interest). Government includes local, regional and national governments.

## Carbon Transition Indicators

Carbon transition indicators (CTIs) are assigned to companies in certain sectors. CTIs are scorecard-generated and use quantitative data and other indicators from issuers and third parties to provide a transparent and objective starting point for our assessment of the credit risk a company faces from carbon transition risk. CTIs inform the assignment of carbon transition issuer category scores under our Environmental Issuer Profile Scores (E-IPSS).

Carbon Transition Indicator Scale	
CT-1 Advanced	Issuers typically have a business model that benefits from the transition to a low-carbon economy.
CT-2-3 Strong	Issuers typically have a business model that is not expected to be materially affected by the carbon transition, or they have strategies and plans in place that substantially mitigate their carbon transition exposure.
CT-4-5 Moderate	Issuers typically have a business model that is subject to some exposure to carbon transition risks and their relative positioning within this category is determined by variations in the extent of their exposure to carbon risks, medium-term management actions and long-term resilience.
CT-6-7-8 Challenged	Issuers typically have a business model that is challenged, over the longer term, by the transition to a low-carbon economy.
CT-9-10 Highly Challenged	Issuers typically have a business model that is fundamentally inconsistent, over the longer term, with the transition to a low-carbon economy.

## Counterparty Risk Assessments

Counterparty risk assessments (CR assessments) are opinions on the likelihood of a default by an issuer on certain senior operating obligations and other contractual commitments. CR assessments are assigned to legal entities in banking groups and, in some instances, other regulated institutions with similar bank-like senior obligations. CR assessments address the likelihood of default and do not take into consideration the expected severity of loss in the event of default.

Obligations and commitments typically covered by CR assessments include payment obligations associated with covered bonds (and certain other secured transactions), derivatives, letters of credit, third party guarantees, servicing and trustee obligations and other similar operational obligations that arise from a bank in performing its essential client-facing operating functions.

Long-term CR assessments reference obligations with an original maturity of eleven months or more. Short-term CR assessments reference obligations with an original maturity of thirteen months or less. CR assessments are expressed on alpha-numeric scales that correspond to the alpha-numeric ratings of the global long-term and short-term rating scales, with a "(cr)" modifier appended to the CR assessment symbols to differentiate them from our credit ratings.



## CR Assessment Long-Term Scale

<b>Aaa(cr)</b>	Issuers assessed Aaa(cr) are judged to be of the highest quality, subject to the lowest level of risk of defaulting on certain senior operating obligations and other contractual commitments.
<b>Aa(cr)</b>	Issuers assessed Aa(cr) are judged to be of high quality and are subject to very low risk of defaulting on certain senior operating obligations and other contractual commitments.
<b>A(cr)</b>	Issuers assessed A(cr) are judged to be upper-medium grade and are subject to low risk of defaulting on certain senior operating obligations and other contractual commitments.
<b>Baa(cr)</b>	Issuers assessed Baa(cr) are judged to be medium-grade and subject to moderate risk of defaulting on certain senior operating obligations and other contractual commitments and as such may possess certain speculative characteristics.
<b>Ba(cr)</b>	Issuers assessed Ba(cr) are judged to be speculative and are subject to substantial risk of defaulting on certain senior operating obligations and other contractual commitments.
<b>B(cr)</b>	Issuers assessed B(cr) are considered speculative and are subject to high risk of defaulting on certain senior operating obligations and other contractual commitments.
<b>Caa(cr)</b>	Issuers assessed Caa(cr) are judged to be speculative of poor standing and are subject to very high risk of defaulting on certain senior operating obligations and other contractual commitments.
<b>Ca(cr)</b>	Issuers assessed Ca(cr) are highly speculative and are likely in, or very near, default on certain senior operating obligations and other contractual commitments.
<b>C(cr)</b>	Issuers assessed C(cr) are the lowest rated and are typically in default on certain senior operating obligations and other contractual commitments.

Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic assessment classification from Aa(cr) through Caa(cr). The modifier 1 indicates that the issuer ranks in the higher end of its generic assessment category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic assessment category.

## CR Assessment Short-Term Scale

<b>P-1(cr)</b>	Issuers assessed Prime-1(cr) have a superior ability to honor short-term operating obligations.
<b>P-2(cr)</b>	Issuers assessed Prime-2(cr) have a strong ability to honor short-term operating obligations.
<b>P-3(cr)</b>	Issuers assessed Prime-3(cr) have an acceptable ability to honor short-term operating obligations.
<b>NP(cr)</b>	Issuers assessed Not Prime(cr) do not fall within any of the Prime rating categories.

## Country Ceilings

Moody's assigns long-term foreign and local currency ceilings to countries, expressed on the alphanumeric global long-term rating scale. Ceilings apply to the ratings of non-sovereign issuers, debt obligations, transactions and deposits in a country and facilitate the assignment of local and foreign currency ratings for bonds, other debt and debt-like obligations and deposits of locally domiciled issuers and obligors, including locally originated structured finance transactions.

Country ceilings reflect the non-diversifiable risk incurred by investors in any sovereign credit environment. For depositors, these risks affect the likelihood of being able to access deposits at any time and in their full amount. A local currency country ceiling reflects the general country-level risks that affect all local currency issues of locally domiciled obligors or structured finance transactions whose cash flows are primarily generated from domestic assets or residents. A foreign currency country ceiling builds in the transfer and convertibility risks that are incremental to the general country-level risks reflected in local currency country ceilings. Local currency country ceilings are relevant to obligations denominated in the currency of the country of domicile or origination. Foreign currency country ceilings are relevant to obligations denominated in a different currency than the currency of the country of domicile or origination.

Country ceilings indicate the highest rating level that Moody's generally assigns to the financially strongest issuers domiciled in a country, including the strongest structured finance transactions whose cash flows are generated predominantly from domestic assets or residents. In other words, ceilings generally act as a cap on ratings for locally domiciled issuers and locally originated structured finance transactions. Notwithstanding the foregoing, obligations benefiting from meaningful support mechanisms, assets or cash flows based outside the country may on occasion be rated higher than the country ceiling. Applied to deposits, local and foreign ceilings indicate the highest rating level that Moody's generally assigns to deposit obligations of domestic and foreign branches of banks headquartered in that domicile (including local subsidiaries of foreign banks), while foreign currency ceilings also apply to the branches of foreign banks operating in that domicile.

Ceilings apply to long-term and short-term obligations. The short-term ceiling equivalent can be inferred from the alphanumeric level of the country ceiling. The mapping of short-term ceiling equivalents is the same as the mapping of short-term ratings from long-term ratings.<sup>13</sup> While the mapping includes some overlap in the short-term equivalent that can be inferred from a given country ceiling, countries with ceilings between A3 and Baa2 typically map to a short-term equivalent of P-2.

## Credit Estimates

A Credit Estimate (CE) is an unpublished point-in-time opinion of the approximate credit quality of individual securities, financial contracts, issuers, corporate families or loans. CEs are not Moody's Credit Ratings and are not assigned by rating committees. Had Moody's conducted an analysis commensurate with a full Moody's Credit Rating, the result may have been significantly different. Additionally, CEs are not monitored but are often updated from time to time.

CEs are widely used in the process of assessing elements of credit risk in transactions for which a traditional Moody's Credit Rating is to be determined. CEs are provided in the context of granular pools (where no one obligor represents an exposure of more than 3% of the total pool), chunky pools (where individual exposures represent 3% or more of the total pool) or single-name exposures.

CEs are typically assigned based on an analysis that uses public information (which at times may be limited) or information supplied by various third parties and usually does not involve any participation from the underlying obligor.

CEs are not expressed through the use of Moody's traditional 21-point, Aaa-C alphanumeric long-term rating scale; rather, they are expressed on a simple numerical 1-21 scale. They are calibrated, however, to be broadly comparable to Moody's alphanumeric rating scale and Moody's Rating Factors, which are used in CDO analysis.

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<sup>13</sup> Please see the table showing standard linkage between the global long-term and short-term rating scales in this document.

## ESG Issuer Profile Scores

Environmental (E), Social (S) and Governance (G) Issuer Profile Scores (E, S and G IPS) are opinions of an issuer or transaction's exposure to E, S and G considerations. The IPS incorporate meaningful mitigating or strengthening actions related to those specific exposures.

E, S and G Issuer Profile Scoring Scale	
<b>E-1 S-1 G-1</b>	Issuers or transactions with an issuer profile score of 1 typically have exposures to E or S issues that carry material credit benefits. For G, issuers or transactions typically have exposure to G considerations that, in the context of their sector, positions them strongly, with material credit benefits.
<b>E-2 S-2 G-2</b>	Issuers or transactions with an issuer profile score of 2 typically have exposures to E or S issues that are not material in differentiating credit quality. In other words, they could be overall slightly credit-positive, credit neutral, or slightly credit-negative. An issuer or transaction may have a IPS score of 2 because the exposure is not material or because there are mitigants specifically related to any E or S risks that are sufficient to offset those risks. Issuers or transactions with an issuer profile score of 2 typically have exposure to G considerations that, in the context of their sector, positions them as average, and the exposure is overall neither credit-positive nor negative.
<b>E-3 S-3 G-3</b>	Issuers or transactions with an issuer profile score of 3 typically have moderate credit exposures to E or S risks. These issuers may demonstrate some mitigants specifically related to the identified E or S risks, but they are not sufficiently material to fully offset the risks. Issuers or transactions with an issuer profile score of 3 typically have moderate credit exposure to G risks that, in the context of the sector, positions them below average.
<b>E-4 S-4 G-4</b>	Issuers or transactions with an issuer profile score of 4 typically have high credit exposures to E or S risks. These issuers may demonstrate some mitigants specifically tied to the E or S risks identified, but they generally have limited effect on the risks. Issuers or transactions with an issuer profile score of 4 typically have high credit exposure to G risks that, in the context of their sector, positions them more weakly than issuers with an issuer profile score of 3.
<b>E-5 S-5 G-5</b>	Issuers or transactions with an issuer profile score of 5 typically have very high credit exposures to E or S risks. While these issuers or transactions may demonstrate some mitigants specifically related to the identified E or S risks, they are not meaningful relative to the magnitude of the risks. Issuers or transactions with an issuer profile score of 5 typically have very high credit exposure to G risks that in the context of their sector, positions them more weakly than issuers with an issuer profile score of 4.

## Loss Given Default Assessments

Moody's Loss Given Default (LGD) assessments are point-in-time opinions about expected loss given default expressed as a percent of principal and accrued interest at the resolution of the default.<sup>14</sup> LGD assessments are assigned to individual loan, bond, and preferred stock issues. The firm-wide or enterprise expected LGD rate generally approximates a weighted average of the expected LGD rates on the firm's liabilities (excluding preferred stock), where the weights equal each obligation's expected share of the total liabilities at default. LGD assessments are typically updated when there are material changes to a company's capital structure or at the time of a Credit Rating Action.

LGD Assessment Scale	
Assessments	Loss range
LGD1	≥ 0% and < 10%
LGD2	≥ 10% and < 30%
LGD3	≥ 30% and < 50%
LGD4	≥ 50% and < 70%
LGD5	≥ 70% and < 90%
LGD6	≥ 90% and ≤ 100%

## Q-scores

Q-scores are assessments that are scorecard generated, unpublished, point-in-time estimates of the approximate credit quality of sub-sovereign entities globally (such as states, regions, provinces, territories, counties, cities and closely related entities). Depending on circumstances, these can be for an individual sub-sovereign entity or sector-wide assessments. Q-scores assist in the analysis of mean portfolio credit risk and represent the distribution of credit risk from the underlying exposures in a large pool.<sup>15</sup> Q-scores are not equivalent to and do not represent traditional Moody's Credit Ratings and are not assigned by a rating committee. Q-scores are not expressed through the use of Moody's traditional 21-point, Aaa-C alphanumeric long-term rating scale; rather, they are expressed on a numerical 1.q-21.q scale.

<sup>14</sup> The expected LGD rate is 100% minus the expected value that will be received at default resolution, discounted by the coupon rate back to the date the last debt service payment was made, and divided by the principal outstanding at the date of the last debt service payment.

<sup>15</sup> There may be instances in which the pool is not large but the Q-score represents a small portion of the transaction.

## Speculative Grade Liquidity Ratings

Moody's Speculative Grade Liquidity Ratings are opinions of an issuer's relative ability to generate cash from internal resources and the availability of external sources of committed financing, in relation to its cash obligations over the coming 12 months. Speculative Grade Liquidity Ratings will consider the likelihood that committed sources of financing will remain available. Other forms of liquidity support will be evaluated and consideration will be given to the likelihood that these sources will be available during the coming 12 months. Speculative Grade Liquidity Ratings are assigned to speculative grade issuers that are by definition Not Prime issuers.

SGL Rating Scale	
<b>SGL-1</b>	Issuers rated SGL-1 possess very good liquidity. They are most likely to have the capacity to meet their obligations over the coming 12 months through internal resources without relying on external sources of committed financing.
<b>SGL-2</b>	Issuers rated SGL-2 possess good liquidity. They are likely to meet their obligations over the coming 12 months through internal resources but may rely on external sources of committed financing. The issuer's ability to access committed sources of financing is highly likely based on Moody's evaluation of near-term covenant compliance.
<b>SGL-3</b>	Issuers rated SGL-3 possess adequate liquidity. They are expected to rely on external sources of committed financing. Based on its evaluation of near-term covenant compliance, Moody's believes there is only a modest cushion, and the issuer may require covenant relief in order to maintain orderly access to funding lines.
<b>SGL-4</b>	Issuers rated SGL-4 possess weak liquidity. They rely on external sources of financing and the availability of that financing is, in Moody's opinion, highly uncertain.

## Structured Credit Assessments (SCAs)

Structured Credit Assessments (SCAs) are opinions of the relative credit quality of financial obligations that are collateral assets within securitizations. SCAs incorporate the credit implications of structural features of the securitization that are not intrinsic to the obligation, such as servicing, liquidity arrangements and tail periods.<sup>16</sup> In contrast, credit ratings on these same instruments do not reflect these structural features, as they would not be available to investors that invest in these assets directly outside of the securitization's structure.

Structured Credit Assessments are opinions of the expected loss associated with the financial obligation in the context of the corresponding securitization transaction and are expressed, with the sca indicator, on a lower-case alpha-numeric scale that corresponds to the alpha-numeric ratings of the global long-term rating scale.

SCA Scale	
<b>aaa (sca)</b>	Financial obligations assessed aaa (sca) are judged to have the highest credit quality and thus subject to the lowest credit risk, when used as inputs in determining a structured finance transaction's rating.
<b>aa (sca)</b>	Financial obligations assessed aa (sca) are judged to have high credit quality and thus subject to very low credit risk, when used as inputs in determining a structured finance transaction's rating.
<b>a (sca)</b>	Financial obligations assessed a (sca) are judged to have upper-medium credit quality and thus subject to low credit risk, when used as inputs in determining a structured finance transaction's rating.
<b>baa (sca)</b>	Financial obligations assessed baa (sca) are judged to have medium-grade credit quality and thus subject to moderate credit risk, and as such, may possess certain speculative credit elements, when used as inputs in determining a structured finance transaction's rating.
<b>ba (sca)</b>	Financial obligations assessed ba (sca) are judged to have speculative credit quality and subject to substantial credit risk, when used as inputs in determining a structured finance transaction's rating.
<b>b (sca)</b>	Financial obligations assessed b (sca) are judged to have speculative credit quality and subject to high credit risk, when used as inputs in determining a structured finance transaction's rating.
<b>caa (sca)</b>	Financial obligations assessed caa (sca) are judged to have speculative credit quality and subject to very high credit risk, when used as inputs in determining a structured finance transaction's rating.
<b>ca (sca)</b>	Financial obligations assessed ca (sca) are judged to be highly speculative and are likely to be either in, or very near, default, with some prospect for recovery of principal or interest, when used as inputs in determining a structured finance transaction's rating.
<b>c (sca)</b>	Financial obligations assessed c (sca) are typically in default with little prospect for recovery of principal or interest, when used as inputs in determining a structured finance transaction's rating.
Notes:	
1. Moody's appends numerical modifiers 1, 2, and 3 to each generic assessment classification from aa (sca) through caa (sca). The modifier 1 indicates that the obligation ranks in the higher end of its generic assessment category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic assessment category.	
2. The modifier pd indicates a probability of default structured credit assessment (for example aaa (sca.pd)). A probability of default structured credit assessment is an opinion of the relative likelihood that the financial instrument will default.	

<sup>16</sup> Structural features of securitisations often include: servicing of the loans by third party experts, liquidity arrangements to mitigate specific risks or the risk of short term cash flow interruptions, and tail periods between the loan maturity date and the loss calculation date to allow for an orderly sale of the assets upon default.

## Timely Payment Indicator (TPI)

A Timely Payment Indicator is an assessment of the likelihood of timely payment of interest and principal to covered bondholders following a covered bond anchor event. TPIs are assessed as Very High, High, Probable-High, Probable, Improbable or Very Improbable.

## Other Definitions

### ESG Credit Impact Scores

ESG credit impact scores (CISs) communicate the impact of ESG considerations on the rating of an issuer or transaction. The CIS is based on Moody's qualitative assessment of the impact of ESG considerations in the context of the issuer's or transaction's other credit drivers that are material to a given rating.

ESG Credit Impact Score Scale	
CIS-1	ESG considerations have a positive impact on the current rating which is higher than it would have been in the absence of ESG considerations.
CIS-2	ESG considerations do not have a material impact on the current rating.
CIS-3	ESG considerations have a limited impact on the current rating, with potential for greater negative impact over time.
CIS-4	ESG considerations have a discernible impact on the current rating, which is lower than it would have been if ESG risks did not exist. The negative impact of ESG considerations on the rating is higher than for an issuer scored CIS-3.
CIS-5	ESG considerations have a pronounced impact on the current rating, which is lower than it would have been if ESG risks did not exist. The negative impact of ESG considerations on the rating is higher than for an issuer scored CIS-4.

### Rating Outlooks

A Moody's rating outlook is an opinion regarding the likely rating direction over the medium term. Rating outlooks fall into four categories: Positive (POS), Negative (NEG), Stable (STA), and Developing (DEV). Outlooks may be assigned at the issuer level or at the rating level. Where there is an outlook at the issuer level and the issuer has multiple ratings with differing outlooks, an "(m)" modifier to indicate multiple will be displayed and Moody's press releases will describe and provide the rationale for these differences. A designation of RUR (Rating(s) Under Review) is typically used when an issuer has one or more ratings under review, which overrides the outlook designation. A designation of RWR (Rating(s) Withdrawn) indicates that an issuer has no active ratings to which an outlook is applicable. Rating outlooks are not assigned to all rated entities. In some cases, this will be indicated by the display NOO (No Outlook).

A stable outlook indicates a low likelihood of a rating change over the medium term. A negative, positive or developing outlook indicates a higher likelihood of a rating change over the medium term. A rating committee that assigns an outlook of stable, negative, positive, or developing to an issuer's rating is also indicating its belief that the issuer's credit profile is consistent with the relevant rating level at that point in time.

The time between the assignment of a new rating outlook and a subsequent rating action has historically varied widely, depending upon the pace of new credit developments which materially affect the issuer's credit profile. On average, after the initial assignment of a positive or negative rating outlook, the next rating action – either a change in outlook, a rating review, or a change in rating – has followed within about a year, but outlooks have also remained in place for much shorter and much longer periods of time. Historically, approximately one-third of issuers have been downgraded (upgraded) within 18 months of the assignment of a negative (positive) rating outlook. After the initial assignment of a stable outlook, about 90% of ratings experience no change in rating during the following year.

## Rating Reviews

A review indicates that a rating is under consideration for a change in the near term.<sup>17</sup> A rating can be placed on review for upgrade (UPG), downgrade (DNG), or more rarely with direction uncertain (UNC). A review may end with a rating being upgraded, downgraded, or confirmed without a change to the rating. Ratings on review are said to be on Moody's "Watchlist" or "On Watch". Ratings are placed on review when a rating action may be warranted in the near term but further information or analysis is needed to reach a decision on the need for a rating change or the magnitude of the potential change.

The time between the origination of a rating review and its conclusion varies widely depending on the reason for the review and the amount of time needed to obtain and analyze the information relevant to make a rating determination. In some cases, the ability to conclude a review is dependent on whether a specific event occurs, such as the completion of a corporate merger or the execution of an amendment to a structured finance security. In these event-dependent cases and other unique situations, reviews can sometimes last 90 to 180 days or even longer. For the majority of reviews, however, where the conclusion of the review is not dependent on an event whose timing Moody's cannot control, reviews are typically concluded within 30 to 90 days.

Ratings on review for possible downgrade (upgrade) have historically concluded with a downgrade (upgrade) over half of the time.

## Confirmation of a Rating

A Confirmation is a public statement that a previously announced review of a rating has been completed without a change to the rating.

## Affirmation of a Rating

An Affirmation is a public statement that the current Credit Rating assigned to an issuer or debt obligation, which is not currently under review, continues to be appropriately positioned. An Affirmation is generally issued to communicate Moody's opinion that a publicly visible credit development does not have a direct impact on an outstanding rating.

## Anticipated Ratings Process

The process by which a provisional notation may be removed from a Credit Rating assigned to an instrument or issuer, when the applicable contingencies which were the basis for affixing the (P) notation are deemed to have been fulfilled. For example, when a rating of (P)Baa1 is assigned to a debt instrument, it is anticipated that the (P) notation will be removed from the Baa1 rating when it is determined that the contingencies indicated by the (P) notation have been fulfilled.

## Subsequent Ratings Process

The process of assigning Credit Ratings (together with the associated outlook or review status, if applicable) that are derived exclusively by reference to an existing Credit Rating of a program, series, category/class of debt or primary Rated Entity. This includes:

- » Assignment of a Credit Rating to issuance of debt within or under an existing rated program where the transaction structure and terms have not changed in a manner that would affect the Credit Rating indicated by the program rating (examples include covered bond programs, shelf registrations, and medium term note programs);
- » Credit Ratings assigned based on the pass-through of a primary Rated Entity's Credit Rating, including monoline or guarantee linked ratings;

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<sup>17</sup> Baseline Credit Assessments and Counterparty Risk Assessments may also be placed on review.



- » Assignment of Credit Ratings to debt instruments of the same seniority as previously rated debt when such issuance of debt is contemplated in the existing Credit Ratings. Examples include ratings on debt issued by frequent corporate and government issuers. This also includes Credit Ratings assigned to new debts, new programs, or amended and extended credit facilities by reference to an existing rating of the same debt class, at the same rating level, whether or not the new debts or programs replace similarly structured debts, programs or credit facilities.

## Rating Agency Conditions (RACs)

Parties to a transaction sometimes choose to include clauses in the transaction documents that require a party thereto to obtain an opinion from a rating agency that certain specified actions, events, changes to the structure of, or amendments to the documentation of, the transaction will not result in a reduction or withdrawal of the current rating maintained by that rating agency. Such an opinion is referred to by Moody's as a "RAC" and consists of a letter or other written communication, such as a press release, from Moody's issued after consideration of a request that Moody's provide a RAC. The decision to issue a RAC remains entirely within Moody's discretion, and Moody's may choose not to provide a RAC even if the transaction documents require it. When Moody's chooses to issue a RAC, the RAC reflects Moody's opinion solely that the specified action, event, change in structure or amendment, in and of itself and as of that point in time, will not result in a reduction, placement on review for possible downgrade or withdrawal of Moody's current rating on the debt. A RAC is not a "confirmation" or "affirmation" of the rating, as those terms are defined elsewhere in this Rating Symbols and Definitions publication, nor should it be interpreted as Moody's "approval of" or "consent to" the RAC subject matter.

## Definition of Default

Moody's definition of default is applicable only to debt or debt-like obligations (e.g., swap agreements). Four events constitute a debt default under Moody's definition:

- a. a missed or delayed disbursement of a contractually-obligated interest or principal payment (excluding missed payments cured within a contractually allowed grace period<sup>18</sup>), as defined in credit agreements and indentures;
- b. a bankruptcy filing or legal receivership by the debt issuer or obligor that will likely cause a miss or delay in future contractually-obligated debt service payments;
- c. a distressed exchange whereby 1) an issuer offers creditors a new or restructured debt, or a new package of securities, cash or assets, that amount to a diminished value relative to the debt obligation's original promise and 2) the exchange has the effect of allowing the issuer to avoid a likely eventual default;
- d. a change in the payment terms of a credit agreement or indenture imposed by the sovereign that results in a diminished financial obligation, such as a forced currency re-denomination (imposed by the debtor, or the debtor's sovereign) or a forced change in some other aspect of the original promise, such as indexation or maturity.<sup>19</sup>

We include distressed exchanges in our definition of default in order to capture credit events whereby issuers effectively fail to meet their debt service obligations but do not actually file for bankruptcy or miss an interest or principal payment. Moody's employs fundamental analysis in assessing the likelihood of future default and considers various indicators in assessing loss relative to the original promise, which may include the yield to maturity of the debt being exchanged.

Moody's definition of default does not include so-called "technical defaults," such as maximum leverage or minimum debt coverage violations, unless the obligor fails to cure the violation and fails to honor the resulting debt acceleration which may be required. For structured finance securities, technical defaults (such as breach of an overcollateralization test or certain other events of default as per the legal documentation of the issuer), or a temporary (i.e., less than twelve months) missed interest payment on a security

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<sup>18</sup> Among some structured finance asset classes, missed scheduled payments impose meaningful investor losses even though such payments are not contractually obligated. Therefore, for structured finance securities, Moody's practice is to recognize that a default has occurred if a material interest payment has been missed (this excludes allowable deferrals not driven by credit stress) for 12 months or longer or if there has been a material principal loss (or writedown) to the security. If such an interest or principal shortfall is subsequently reduced below the materiality threshold of 50 basis points of the original balance of the security, then the default is cured. Note that when a structured finance default is completely cured, we consider retrospectively that no default has taken place for the purposes of our studies on ratings performance.

<sup>19</sup> Moreover, unlike a general tax on financial wealth, the imposition of a tax by a sovereign on the coupon or principal payment on a specific class of government debt instruments (even if retroactive) would represent a default. Targeted taxation on government securities would represent a default even if the government's action were motivated by fairness or other considerations, rather than inability or unwillingness to pay.

whose terms allow for the deferral of such payments together with corresponding interest (such as PIKable securities) prior to its legal final maturity date do not constitute defaults.

Also excluded are payments owed on long-term debt obligations which are missed due to purely technical or administrative reasons which are 1) not related to the ability or willingness to make the payments and 2) are cured in very short order (typically, 1-2 business days after the technical/administrative issue is recognized).<sup>20</sup> Finally, in select instances based on the facts and circumstances, missed payments on financial contracts or claims may be excluded if they are the result of legal disputes regarding the validity of those claims.

## Definition of Impairment

A security is impaired when investors receive — or expect to receive with near certainty — less value than would be expected if the obligor were not experiencing financial distress or otherwise prevented from making payments by a third party, even if the indenture or contractual agreement does not provide the investor with a natural remedy for such events, such as the right to press for bankruptcy.

Moody's definition of impairment is applicable to debt or debt-like obligations (e.g., swap agreements), as well as preferred stock and other hybrid securities. A security is deemed to be impaired upon the occurrence of:

- a. any event that meets the definition of default (above);
- b. contractually-allowable payment omissions of scheduled dividends, interest or principal payments on preferred stock or other hybrid instruments;<sup>21</sup>
- c. write-downs or "impairment distressed exchanges"<sup>22</sup> of preferred stock or other hybrid instruments due to financial distress whereby (1) the principal promise to an investor is reduced according to the terms of the indenture or other governing agreement,<sup>23</sup> or (2) an obligor offers investors a new or restructured security, or a new package of securities, cash or assets and the exchange has the effect of allowing the obligor to avoid a contractually-allowable payment omission as described in b) above; or<sup>24</sup>
- d. rating actions leading to an assignment of a rating of Ca or C, signaling the near certain expectation of a significant level of future losses.

The impairment status of a security may change over time as it migrates from impaired to cured (e.g., if initially deferred cumulative preferred dividends are ultimately paid in full) and possibly back again to impaired. If a security is upgraded above a Ca rating then the impairment based on clause d above will be cured. Also, if a security having a Ca or C rating has its rating withdrawn and the security has been paid in full without a loss, its impairment is cured. Note that when a structured finance impairment is completely cured, we consider retrospectively that no impairment has taken place for the purposes of our studies on ratings performance.

## Definition of Loss-Given-Default

The loss-given-default rate for a security is 100% minus the value that is received at default resolution (which may occur at a single point in time or accrue over an interval of time), discounted by the coupon rate back to the date the last debt service payment was made, divided by the principal outstanding at the date of the last debt service payment.

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<sup>20</sup> See "Assessing the Rating Impact of Debt Payments That Are Missed for Operational or Technical Reasons", Moody's Special Comment, April 2013. For the avoidance of doubt, payments missed due to reasons that are not purely technical or administrative, such as payments missed due to potential failures of distributed ledger technology or as the result of sovereign political sanctions, for example, do constitute defaults.

<sup>21</sup> In this context, the exercise of a payment-in-kind option embedded in a fundamental debt security is an impairment event. Similar to default events, excluded from impairment events are 1) missed payments due to purely technical or administrative reasons which are not related to the ability or willingness to make the payments and 2) are remedied in very short order (typically, 1-2 business days after the technical/administrative issue is recognized).

<sup>22</sup> Impairment distressed exchanges are similar to default distressed exchanges except that they have the effect of avoiding an impairment event, rather than a default event.

<sup>23</sup> Once written down, complete cures, in which securities are written back up to their original balances are extraordinarily rare; moreover, in most cases, a write-down of principal leads to an immediate and permanent loss of interest for investors, since the balance against which interest is calculated has been reduced.

<sup>24</sup> Examples of such impairments include mandatory conversions of contingent capital securities to common equity and mandatory write-downs of other hybrid securities that are the direct result of obligor distress.

In the special case of a distressed exchange default, when an investor is given new or modified securities in exchange, the LGD rate is 100% minus the trading value of the new securities received in exchange at the exchange date divided by the par value plus accrued interest of the original securities as of the exchange date.

## Long-Term Credit Ratings for Defaulted or Impaired Securities

When a debt instrument becomes impaired or defaults or is very likely to become impaired or to default, Moody's rating on that instrument will reflect our expectations for recovery of principal and interest, as well as the uncertainty around that expectation, as summarized in the table below.<sup>25</sup> Given the usual high level of uncertainty around recovery rate expectations, the table uses approximate expected recovery rates and is intended to present rough guidance rather than a rigid mapping.

### Approximate Expected Recoveries Associated with Ratings for Defaulted or Impaired Securities

Expected Recovery Rate	Fundamental	Structured Finance
99 to 100%*	B1*	B1 (sf)*
97 to 99%*	B2*	B2 (sf)*
95 to 97%*	B3*	B3 (sf)*
90 to 95%	Caa1	Caa1 (sf)
80 to 90%	Caa2	Caa2 (sf)
65 to 80%	Caa3	Caa3 (sf)
35 to 65%	Ca	Ca (sf)
Less than 35%	C	C (sf)

\* For instruments rated B1, B2, or B3, the uncertainty around expected recovery rates should also be low. For example, if a defaulted security has a higher than a 10% chance of recovering less than 90%, it would generally be rated lower than B3.

Additionally, the table may not apply directly in a variety of unusual circumstances. For example, a security in default where the default is likely to be fully cured over the short-term but remain very risky over a longer horizon might be rated much lower than suggested by this table. At the other end of the rating scale, very strong credits that experience temporary default events that have no impact on expected credit losses might be rated much higher than B1 but no higher than Baa1. Under very rare circumstances a structured finance debt security may incur a one-time principal write-down that is very small (considerably less than 1% of par) and is not expected to recur.<sup>26</sup> In such cases, Moody's will add this small loss amount to its calculations of the expected loss associated with the security and may rate it higher than B1.

Securities in default where recovery rates are expected to be greater than 95% can be rated in the B category as outlined in the table above. In order to be assigned a rating in the B category, the confidence level regarding the expected recovery rates should also be high. Or in other words, uncertainty should be low. As stated in the footnote to the table, if a security has a higher than a 10% chance of recovering less than 90%, then it would generally be rated lower than B3.

<sup>25</sup> The approach to impairment is consistent with the approach to default. When an instrument is impaired or very likely to become impaired, the rating will reflect the expected loss relative to the value that was originally expected absent financial distress.

<sup>26</sup> For example, some master servicers of US RMBS implemented a new loan modification program and divided the cost of its administration across all their transactions, resulting in a loss of a few hundred dollars per security. In other examples some rated synthetic transactions have seen a very small loss attributable to the non payment of a very small CDS premium.

## Credit Rating Methodologies

Our credit rating methodologies describe the analytical framework rating committees use to assign ratings. As set forth in the methodologies, they are not intended to present an exhaustive treatment of all factors reflected in our ratings. Rather, they describe the key qualitative and quantitative considerations that are usually most important for assessing credit risk in a given sector. Each rating committee applies its own judgment in determining how to emphasize rating factors.

Most of our credit rating methodologies focus on a particular industry sector or class of issuer or transaction. These primary methodologies may incorporate similar industries, sectors or classes that are not specifically cited. Primary methodologies have sufficient analytical flexibility that collectively provide an analytical framework that can be used to assign ratings to almost any debt instrument or debt issuer. Other methodologies describe our approach to analytical considerations that aren't specific to any single sector or class of issuer. These methodologies are referred to as cross-sector methodologies, and they cover general credit-related topics and are typically used in conjunction with primary methodologies to assign credit ratings.

Methodologies governing fundamental credits (e.g., non-financial corporates, financial institutions and governments) generally (though not always) incorporate a scorecard. A scorecard is a reference tool explaining the factors that are generally most important in assigning ratings. It is a summary, and does not contain every rating consideration. The weights shown for each factor and sub-factor in the scorecard represent an approximation of their typical importance for rating decisions, but the actual importance of each factor may vary significantly depending on the circumstances of the issuer and the environment in which it is operating. In addition, quantitative factor and sub-factor variables generally use historical data, but our rating analyses are based on forward-looking expectations. Each rating committee will apply its own judgment in determining whether and how to emphasize rating factors which it considers to be of particular significance given, for example, the prevailing operating environment. As a consequence, assigned ratings may fall outside the range or level indicated by the scorecard.

Methodologies governing structured finance credits often mention one or more rating models. A structured finance ratings model is a reference tool that explains how certain rating factors are considered in estimating a loss distribution for the collateral assets, or how the interplay between collateral cash flows, capital structure and credit enhancement jointly influence the credit risk of different tranches of securities. While methodologies may contain fixed values for key model parameters to be applied to transactions across an entire sector, individual rating committees are expected to employ judgment in determining model inputs, and rating committee deliberations may fall outside model-indicated outputs.

While most methodologies relate to a particular industry, sector or class of issuers or transactions, a small number — cross-sector methodologies, many originally issued as 'Rating Implementation Guidance' — have implications for a number of (and in some cases all) sectors. Examples include the methodologies which govern:

- » the assignment of short-term ratings across the Fundamental Group;
- » the use of credit estimates in the analysis of structured finance transactions;
- » the linkage between sovereign ratings and related ratings in other Fundamental Groups;
- » the 'notching' guidelines used to assign ratings to different classes of corporate debt;
- » and the determination of country ceilings.

Typically, these are broad commentaries, the output of which may be general guidance to committees on ranges or caps on ratings rather than a specific rating assignment and which, to a greater extent than sector-specific methodologies, set out broad principles and relationships rather than detailed risk factors which can be summarized in a scorecard. However, in other respects cross-sector methodologies are no different from any sector-specific methodology, in providing an analytical framework to promote consistency rather than a set of rules which must be applied rigidly in all circumstances.

## Key Rating Assumptions

Methodologies may (but need not) contain separately identifiable key rating assumptions (“KRAs”). KRAs are the fixed inputs (sometimes expressed as a possible range of values) described in Credit Rating Methodologies such as mathematical or correlation assumptions which are common to broad classes of ratings, may be common to multiple Credit Rating Methodologies, and which inform rating committee judgments in assigning ratings across each class. KRAs are considered methodological and are subject to the same governance process as the methodology to which they relate, including the need for any changes to be approved by the relevant Policy Committee within MIS.

KRAs are, by their nature, relatively stable inputs to the analytical process, and because they seek to bring a degree of stability, consistency and transparency to something that may in practice be uncertain, they are intended to be reasonably resilient to change. They may change over time in response to long-term structural changes or as more is learned about long-run relationships between risk factors, but they would be very unlikely to change as a result of a short-run change in economic or financial market conditions.

By contrast, credit judgments reached in rating committees regarding the impact of prevailing credit conditions on ratings within a particular sector, country or region are not KRAs, even where those judgments affect a large number of Credit Ratings (for example because they alter a country ceiling, systemic support indicator or a Timely Payment Indicator). Moreover, rating committees will, from time to time, reach credit judgments in relation to the application of KRAs in the assignment of credit ratings for a particular deal or set of deals which are the subject of that rating committee, to reflect prevailing credit conditions in the relevant region or sub-sector (for example to apply higher or lower correlation assumptions while a given set of credit conditions persist). Such judgments would not be deemed to have amended a KRA, since they were not intended to be applied consistently and systematically across most if not all debt instruments covered by the relevant methodology, and in a manner which was largely insensitive to further changes in credit conditions. Macro-economic or financial market projections which are by definition specific to a particular point in time are not KRAs.

**For Structured Finance Credit Rating Methodologies**, KRAs are generally assumptions that underlie the overall methodological construct — values assigned to parameters which influence the analysis of a prototypical transaction broadly across the relevant sector. Examples would include:

- » sector correlation assumptions;
- » loss severity assumptions for particular sectors;
- » and idealized default rates when used as a proxy for collateral performance.

Inputs to the rating of structured finance transactions that result from credit judgments reached by rating committees or which reflect analytic deliberations and that are not KRAs include, for example:

- » the credit risk considerations (as reflected in credit ratings or other credit assessments) introduced by third parties, such as guarantors and other support providers, servicers, trust banks, swap providers, etc.;
- » the credit risk introduced by the issuer's operating environment, as reflected, for example, by country ceilings;
- » changes in collateral asset risk expectations brought on by changes in the economic environment; and
- » the maximum extent to which a bank's legal and operating environment would enable overcollateralization to provide lift for a covered bond's rating over the bank's own rating, as expressed in the Timely Payment Indicator.

**For Fundamental Credit Rating Methodologies**, KRAs are intrinsically less common (in part reflecting the less quantitative nature of Fundamental credit analysis), and where they do exist they may be embedded within the underlying Credit Rating Methodology. Generally, they are so deeply embedded in the overlying analytical structure that it would be meaningless and misleading to identify them as distinct from the Credit Rating Methodology itself: a KRA change would almost inevitably involve a corresponding change to the Credit Rating Methodology itself. Examples of deeply embedded KRAs in Fundamental that cannot be viewed distinctly from a Credit Rating Methodology include:

- » the assumption that leverage and access to liquidity are strong drivers of credit risk and appropriate factors to include in Credit Rating Methodologies;
- » the assumptions that there is very strong interdependence between bank and sovereign credit strength (from which MIS concludes that a lower-rated sovereign cannot generally provide ratings lift through support to a higher rated bank);

- » the assumption that legal priority of claim affects average recovery on different classes of debt sufficiently to warrant higher or lower ratings for different classes of debt;
- » and the assumption that sovereign credit risk is strongly correlated with that of other domestic issuers.

Examples of assumptions in Fundamental Credit Rating Methodologies that would be considered KRAs distinct from (though perhaps stated in) the Credit Rating Methodology to which each relates would include:

- » loss severity assumptions for different sectors;
- » and idealized loss rates when used as a proxy for the ability of a sovereign to support its banking system;

Inputs to the fundamental ratings process that result from credit judgments reached by rating committees or which reflect analytic deliberations which are not KRAs include:

- » the credit risk considerations (as reflected in credit ratings or other credit assessments) introduced by third parties, such as guarantors and other support providers or affiliates;
- » the credit risk introduced by the issuer's operating environment, as reflected, for example, by country ceilings; and
- » the ability a sovereign to provide support to, for example, banks, as expressed in a systemic support indicator.
- » Such inputs may incorporate underlying assumptions which may be KRAs.

## Benchmark Parameters Used in Rating Models

As indicated in our rating definitions, Moody's credit ratings are opinions of ordinal, horizon-free credit risk and, as such, do not target specific default rates or expected loss rates. Moody's believes the needs of market participants are best served by ratings that are assessments of relative credit risk rather than cardinal risk measures. If ratings targeted specific default and loss rates, this would likely require frequent wide-spread rating actions in anticipation of economic and market changes that might broadly push default and loss rates sharply higher or lower for a brief period of time. Due to the inherent volatility of general credit and market conditions, most such rating changes would likely soon need to be reversed. Therefore, the use of cardinal targets would result in much higher rating volatility and disruption for investors without meaningfully improving the cardinal predictive power of ratings over medium and long-term horizons.

To rate some obligations in some asset classes, however, Moody's uses models and tools that require ratings to be associated with cardinal default rates, expected loss rates, and internal rates of return in order for those models and tools to generate outputs that can be considered in the rating process. For these purposes, Moody's has established a fixed common set of default rates, expected loss rates, and internal rates of return that vary by rating category and/or investment horizon (Moody's Idealized Default and Expected Loss Rates;<sup>27</sup> hereafter called "Moody's Idealized Rates"). By using a common fixed set of benchmark parameters, rating models are more likely to provide consistency with respect to the estimation of relative risk across rating levels and investment horizons and can be more easily compared to one another. Moody's Idealized Rates are used with other tools and assumptions that have a combined effect on model outcomes. While cardinal measures are used as inputs to models, the performance of ratings is benchmarked against other metrics.<sup>28</sup> Although Moody's Idealized Rates bore some degree of relationship to corporate default and loss experience at the time they were created, that relationship has varied over time, and Moody's continuing use of the Idealized Rates for modeling purposes does not depend on the strength of that relationship over any particular time horizon. When we perceive changes in risk that necessitate changes in our credit analysis, we make revisions to key assumptions and other aspects of models and tools rather than changing this fixed common set of benchmark parameters. This approach enables us to make adjustments that only affect the particular sectors and asset classes we expect will experience significant changes in risk at a given time.

<sup>27</sup> These tables are highly stylized and are not intended to match historical or future ratings performance. The tables were constructed in 1989 with reference to corporate default and loss experience over four historical data points. In particular, the 10-year idealized default rates for A2, Baa2, Ba2, and B2 were set equal to the 10-year historical default rates for corporate issuers with single A, Baa, Ba, and single B ratings, as observed between 1970 and 1989. In contrast, the 10-year idealized default rates for Aaa and Aa2 were set lower than their historical default rates. All the other idealized default rates – for different alphanumeric ratings and at different rating horizons – were derived through interpolation rather than being matched to historical data. The idealized expected loss table was then derived by multiplying each element of the idealized default table by an average loss severity assumption, set equal to the approximate historical recovery rate of senior unsecured debt observed between 1970 and 1989. Moody's has not published a revised version of these tables since the 1989 version, and has no plans to revise them at the time of this writing.

<sup>28</sup> Moody's approach to measuring ratings performance is discussed in "Measuring The Performance Of Credit Ratings" (Moody's Special Comment, November 2011).

## Idealized Probabilities of Default and Expected Losses

For some obligations and asset classes we may use benchmark default probabilities and expected loss rates in our rating models and tools. These rates are shown in the Idealized Cumulative Expected Default Rates table and the Idealized Cumulative Expected Loss Rates table, which can be found here: [Moody's Idealized Default and Loss Rates](#).

The tables can be used into two ways: (1) to suggest benchmark expected default and loss rates for modelling the credit risk of a securitization's collateral assets or the risk that a rated- counterparty will fail to perform a role, and (2) to associate different modelled expected loss rates with different benchmark ratings. Please consult Moody's published credit rating methodologies for details.

## Internal Rate of Return (IRR) Reduction

For some obligations and asset classes we may use benchmark reductions of the internal rate of return (IRR) to associate different modelled internal rates of return reductions with different benchmark ratings. Please consult Moody's published credit rating methodologies for details.

The table of these benchmarks can be found here: [Moody's IRR Reduction Rates](#). This table was derived from Moody's Idealized Rates, which can be found here: [Moody's Idealized Cumulative Expected Default and Loss Rates](#).

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