CREDIT STRATEGY AND STANDARDS

MOODY'S INVESTORS SERVICE

This methodology is no longer in effect.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

CROSS-SECTOR RATING METHODOLOGY

Table of Contents:

INTRODUCTION	1
SCOPE OF THIS METHODOLOGY	2
OUR OVERALL APPROACH FOR ASSIGNING EQUITY CREDIT TO HYBRID INSTRUMENTS, INCLUDING SHAREHOLDER LOANS	2
ASSIGNING EQUITY CREDIT: HYBRIDS ISSUED BY INVESTMENT-GRADE ENTITIES	4
ASSIGNING EQUITY CREDIT: HYBRIDS, INCLUDING SHAREHOLDER LOANS, ISSUED BY SPECULATIVE-GRADE	
ENTITIES	9
RATINGS OF HYBRID SECURITIES	13
APPENDIX	14
MOODY'S RELATED PUBLICATIONS	16

Analyst Contacts:

Margaret Kessler

Vice President - Senior Analyst

NEW YORK

margaret.kessler@moodys.com +1.212.553.0455 Mark LaMonte Managing Director – Ratings & Process Oversight mark.lamonte@moodys.com +1.212.553.7923 Daniel Gates Managing Director – Global Ratings & Process daniel.gates@moodys.com +1.212.553.4415 Kenneth Emery Senior Vice President kenneth.emery@moodys.com +1.212.553.3611 leffrey S. Berg Senior Vice President jeffrey.berg@moodys.com

+1.212.553.1653

+1.212.553.7884

LONDON +44.20.7772.5454

Michelle Chalker +44.20.7772.5410 Associate Analyst

michelle.chalker@moodys.com

Simon Ainsworth +44.20.7772.5347

Senior Vice President

simon.ainsworth@moodys.com

contacts continued on the last page

Hybrid Equity Credit

This cross-sector rating methodology replaces the *Hybrid Equity Credit* methodology published in January 2017. We have removed language on notching considerations for hybrid securities, which can be found in the relevant sector methodology or in our cross-sector methodology that discusses the notching of corporate instrument ratings. We have added a new section, "Scope of This Methodology", that clarifies the sectors to which this methodology applies and replaces descriptions of the covered universe (and excluded entities) that were in other sections of the document. We have also made some purely presentational changes.

Introduction

This methodology explains our general approach to assigning equity credit for hybrid instruments (including shareholder loans) issued by non-banks. Where hybrid instruments are material and we consider them to be relevant to our analysis of an issuer, we assign equity credit and make related financial statement adjustments.¹

We assign equity credit to hybrid securities of investment-grade and speculative-grade issuers covered under this methodology, although our approaches to assigning equity credit for these two categories differ. For investment-grade issuers, we use an equity credit classification system that considers the benefits a hybrid instrument offers going concerns, where losses are absorbed well in advance of a broad, company-wide default and gone concerns, where losses tend not to be absorbed unless a broad, company-wide default has occurred or is imminent. For speculative-grade issuers, hybrid instruments receive either full equity credit or none, based on the characteristics of the instrument. This treatment reflects the lower certainty (relative to investment-grade issuers) that hybrid coupons will be paid, particularly if debt default can be avoided.

See the methodologies that describe our financial statement adjustments for financial institutions and for non-financial corporations. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section of this report.

Scope of This Methodology

This methodology applies to convertible and non-convertible hybrids issued by insurance companies, finance companies, securities industry market makers, securities industry service providers², asset managers and non-financial corporations³ globally.

This methodology does not apply to banks⁴ nor does it apply to other sectors for which specific guidance on hybrid equity credit is found in the sector methodology.

In addition, the guidance in this methodology does not apply to project finance or to corporate infrastructure issuers with structural features that are highly similar to those found in project finance. Our approach for these issuers uses the broad principles outlined in this methodology as we analyze the credit support that hybrid equity may provide, but in these cases we adapt our approach to align with the relevant transaction-specific financial and legal structures⁵.

Our Overall Approach for Assigning Equity Credit to Hybrid Instruments, Including Shareholder Loans

Basket Classifications and Their Equity Credit Percentages

In assigning equity credit, we classify hybrids in baskets from A to E on a debt-equity spectrum, with A closest to debt and E closest to equity (see Exhibit 1). There is a specific percentage of debt and equity corresponding to each basket, which is used to adjust financial statements in line with our standard adjustments.⁶ In our credit analysis of the issuer, the hybrid is considered within the context of that issuer's overall credit fundamentals.

For clarity, we use the entire basket spectrum shown in Exhibit 1 for hybrids of investment grade entities, whereas for speculative grade entities, we typically assess either no equity credit (basket A) or full equity credit (basket E).

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

EXHIBIT 1 Level of Equity Credit











While preferred stock and other equity instruments issued by speculative-grade issuers receive full equity credit because they have no debt claim in bankruptcy and missed coupons do not trigger a default, we

² For clarity, this approach does not apply to those securities industry market makers rated under our methodology for banks.

This methodology applies to commercial real estate operating companies other than real estate investment trusts. Please see our sector methodology for REITS and other commercial real estate firms. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section of this report.

⁴ Our approach to assigning equity credit to hybrids issued by banks can be found in our methodology for banks. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section of this report.

⁵ A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section of this report.

For an explanation of our standard adjustments, please see the cross-sector methodologies that describe our financial statement adjustments in the analysis of non-financial corporations and financial institutions. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section of this report.

assign partial equity credit when these instruments are issued by investment-grade issuers, depending on security features. Since investment-grade issuers have very rarely missed coupon payments on these types of securities, we consider the cash flow stream associated with them to be similar in nature to the cash outflows associated with servicing debt. As a result, giving only partial equity credit to preferred stock and other equity instruments usually enables us to differentiate financial flexibility and creditworthiness across investment-grade issuers.

Answers to Three Questions Underpin Our Assessment of a Hybrid's Equity Credit

Among investment-grade issuers, we make a distinction between going concerns and gone concerns for classification purposes. Hybrids that absorb losses for a going concern are generally eligible for more equity credit while those that absorb losses only for a gone concern, depending on their features, generally receive less credit.

In assessing the amount of equity credit to be assigned to hybrids, we ask the following three questions:

- » Does the hybrid absorb losses or provide financial protection for a 'going' concern?
- » Does the hybrid absorb losses for a 'gone' concern?
- » Will the loss-absorbing hybrid be there when needed?

Does the hybrid absorb losses or provide financial protection for a going concern?

All things being equal, more equity credit is assigned to hybrids that would absorb losses or provide financial flexibility to the issuer before a broad, company-wide default. In some cases, an issuer's use of a hybrid's loss-absorbing features may forestall a default on more senior debt. For example, a hybrid may help an issuer to conserve liquidity as a going concern through coupon-skip mechanisms, particularly on a non-cumulative basis, or it may protect more senior creditors through principal write-downs or equity conversion before there is a more general default, which could include a distressed exchange.

Does the hybrid absorb losses for a gone concern?

In contrast, less equity credit is assigned to a hybrid that generally does not absorb losses until the company is close to a broad default and provides only modest and temporary payment flexibility. This means that the loss-absorbing cushion for more senior creditors is not much greater than the cushion that subordination otherwise provides. Gone-concern hybrids include those that are cumulative or ACSM-settled⁷, with coupon suspension at the issuer's option or tied to the breach of weak triggers. Also included in this category are hybrids with restricted options to skip coupons.

Will the loss-absorbing hybrid be there when needed?

We also consider whether the hybrid will be available to absorb losses when needed, which relates to its maturity. Rather than factor into our basket assessment any call dates applying to the hybrid and potential replacement funding for the instrument if it's called, these considerations are factored into the issuer's overall credit analysis. This analysis would typically consider the timing of the hybrid's redemption, the replacement security's features, and the expected evolution of the issuer's capital position over time.

In the next section, we describe our approach for assessing the equity characteristics of hybrids issued by investment-grade entities, followed by a section that describes our approach for speculative-grade issuers.

An alternative coupon settlement mechanism (ACSM) is a type of coupon payment settlement mechanism should payments be deferred. An ACSM requires the issuer to subsequently settle any accumulated coupons through the issuance of common stock or certain types of preferred securities. As such, we consider deferrable hybrids with an ACSM to be cumulative in nature.

Assigning Equity Credit: Hybrids Issued by Investment-Grade Entities

Investment-grade entities issue convertible and non-convertible hybrids. Both convertible and non-convertible hybrids that absorb losses or provide financial protection for a going concern (for example, non-cumulative preferred securities) typically receive more equity credit than hybrids that absorb losses for a gone concern (for example, cumulative junior subordinated debt). Since there is a reasonable expectation that hybrid coupons will be paid by investment-grade entities, we give only partial equity credit to preferred securities where coupons can be suspended on a cumulative or non-cumulative basis. In contrast, we give 100% equity credit to the same securities issued by speculative-grade entities. In assigning equity credit to non-convertible hybrids, we typically consider several features of the security, principally coupon skip or deferral provisions, coupon settlement, the security's priority of claim, and its maturity. For a convertible hybrid, we also consider its conversion characteristics (principally, timing to conversion, the ranking of the underlying security upon conversion and the conversion ratio) and the terms of any principal write-down.

Non-convertible Hybrids Issued by Investment-Grade Entities

For common types of non-convertible hybrids, the minimum features for each basket are shown in Exhibit 2.

For each category — Coupon Skip, Settlement, Ranking and Maturity — the features are listed from the most debt-like to the most equity-like. If a more debt-like feature is used for each category, the hybrid would be assigned to a basket with a lower level of equity credit; if a more loss-absorbing feature is used, the hybrid could be eligible for a more equity-like basket.

To illustrate, 30-year cumulative subordinated debt with optional deferral is placed in Basket B. However, if the maturity is less than 30 years, the hybrid would instead be placed in Basket A. Perpetual or 60-year preferred stock with cumulative optional deferral would be placed in Basket C, but would be eligible for Basket D if the security were non-cumulative and had mandatory coupon suspension upon a strong trigger breach.

In assessing the amount of equity credit to be assigned, we consider whether the hybrid is i) a preferred security or subordinated debt; ii) cumulative or non-cumulative; and iii) long-dated. We then position the hybrid in a basket based on the absence or presence of other equity-like features, including coupon stepups, dividend pushers (see description below) or the types and strength of various triggers. In the following section, we explain other features that may add or detract from the equity-like classification of the hybrid.

Exhibit 2

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
ے Mandatory Weak¹		Х										
Mandatory Weak ¹ Restricted Optional ² Optional Optional and Mandatory Strong ³			Х							Х		
Optional	Χ			Х	Х		Χ	Χ			Χ	
Optional and Mandatory Strong ³						Х			Х			X ⁴
غِ ب Cumulative	Χ	Х	Х	Х	Х	Х	Χ		Х			
Non-commulative Commulative								Х		Х	Х	Х
* Subordinated	Χ	Х	Х	Х	Х	Х						
Subordinated Preferred Fauity Fauity							Χ	Х	Х	Х	Х	Х
Equity												
< 30 years	Χ											
30 – 59 years				Х				Х				
>= 60 years = 60 years		Х	Х		X	X	Х		Х	Х	X	Х
Irredeemable												
Basket s	Α	В	В	В	В	В	С	С	С	С	С	D

- † This table is illustrative of common types of non-convertible hybrids but is not an exhaustive compendium.
- * Ranking refers to Moody's classification of the security for purposes of assessing equity credit. Please see the discussion below, Defining Preferred Securities and Subordinated Debt.
- 1 Mandatory weak triggers include minimum regulatory capital ratios set at low levels.
- 2 With restricted optional coupon skips, the issuer has to stop payment on parity or junior securities for more than six months before being able to skip hybrid coupon payments.
- 3 Optional and mandatory strong triggers include optional coupon-skip mechanisms and mandatory coupon suspension tied to the breach of strong or "meaningful" triggers, such as triggers that would be breached well in advance of a company-wide default.
- 4 The mandatory coupon suspension is non-cumulative; the optional coupon suspension can either be cumulative or non-cumulative.

Timing of Coupon Suspension

We expect that issuers generally will not opt to skip coupon payments unless they are close to a broad, company-wide default. Additionally, we think that the timing of coupon suspension will not be materially different between a non-cumulative and cumulative hybrid, nor is there much difference in terms of each security's ability to absorb losses and preserve liquidity. However, the addition of mandatory coupon suspension tied to the breach of strong or "meaningful" triggers, i.e., triggers that would be breached well in advance of a company-wide default, would generally result in more equity credit being given to a non-cumulative hybrid.

Depending on Their Strength, Triggers May Accelerate Coupon Suspension

We attribute more or less equity credit depending on the strength or weakness of mandatory coupon-skip triggers. Meaningful triggers are those that, if breached, result in the suspension of hybrid coupons and provide cash flow relief for issuers in a deteriorating financial condition. In these cases the triggers are typically set so that they would be breached just below the crossover point of the issuer/corporate family rating from investment-grade to speculative grade (typically at an issuer/corporate family rating of Ba1 or Ba2). In contrast, weak triggers would typically only be breached close to bankruptcy, resulting in minimal, if any, benefit for a going concern. Exhibit 3 shows a list of trigger types.

EXHIBIT 3		
Trigger Type	Industry	Trigger Strength
Net loss	Insurance	Strong
Meaningful	As defined for insurers and corporates	Strong
Minimum regulatory capital	Insurance	Weak

Certain Hybrid Features May Hinder an Issuer's Ability to Skip a Coupon Payment

In certain jurisdictions, dividend pushers restrict the ability of an issuer to opt to skip a coupon payment, which we refer to as a "restricted optional" coupon-skip mechanism. If an issuer has to stop payments on parity and more junior securities for a long period before skipping a hybrid coupon, its ability to avail itself of cash flow relief might come too late to avoid a default.

All else being equal, a hybrid with a dividend pusher of more than six months will receive less equity credit than a hybrid without this feature. Equity credit will also be reduced if hybrid coupons are pushed by payments on junior or parity securities except if such payments were made at the issuer's discretion.

Frequently Used Terms

Alternative coupon settlement mechanism (or ACSM) is a type of coupon payment settlement mechanism should payments be deferred. An ACSM requires the issuer to subsequently settle any accumulated coupons through the issuance of common stock or certain types of preferred securities.

Cumulative hybrids are hybrid instruments where any deferred coupons accumulate for payment at a later date.

Dividend pusher language states that if payments are made on more-junior securities (or, in some cases, also on parity securities), the hybrid coupon must also be paid (i.e., parity or junior security payments "push" coupon payments on the hybrid).

Dividend stopper language states that if a hybrid coupon is skipped, coupon payments on junior (and, also in some cases, parity) securities must also be stopped.

Look-back period is the period of time that an issuer must stop coupon payments on junior (or, also in some cases, parity) securities before hybrid coupon payments can be stopped.

Non-cumulative hybrids are hybrids where skipped coupons are cancelled and do not have to be repaid.

Step-up is the number of basis points that a hybrid coupon increases over the initial credit spread if the hybrid is not called at a pre-determined date, usually the first call date

Alternative Coupon Settlement Mechanisms Are Viewed as Cumulative Coupon Payments

The settlement of coupons through the use of an ACSM is viewed as a cumulative payment, rather than non-cumulative. If an issuer is undergoing financial stress, the settlement of coupons through the use of an ACSM conserves cash and provides liquidity. However, this form of settlement does not make the hybrid loss-absorbing because coupons need to be settled in the future by using the issuer's resources. This is unlike a non-cumulative coupon, where skipped coupons are cancelled and do not have to be repaid.

Defining Preferred Securities and Subordinated Debt

In our analysis, we distinguish between preferred securities and subordinated debt. However, within certain jurisdictions and across jurisdictions, the line is blurred and becomes difficult to distinguish. For this methodology, we define preferred securities as those that:

» Are very deeply subordinated securities and generally the most junior instrument above common equity in the capital structure of an issuer, based on historical as well as more recent jurisdictional practices

- » Cannot default or cross-default other than at maturity, if the hybrid is dated. For example, if a hybrid can defer a coupon for 5 or 10 years after which non-payment of the coupon results in a default, it will not be considered to have met this threshold
- » Have limited ability to influence the outcome of a bankruptcy proceeding or a restructuring outside bankruptcy

Since securities law varies by jurisdiction, hybrid credit documentation needs to make clear that all three conditions have been met in order for us to consider the hybrid instrument to be a preferred security for purposes of assigning equity credit. If, however, the hybrid instrument fails to meet this threshold, we regard it as subordinated debt for purposes of assigning equity credit.⁸

Factoring Maturity into the Analysis

Hybrids, except for convertibles and principal write-down hybrids, which are discussed in the next section, need to have a minimum 30-year initial maturity for the assignment of equity credit. We view 60 years as tantamount to a perpetual maturity. Except for hybrids with mandatory conversion or write-down features, all other dated hybrids lose all equity credit 10 years before maturity. In other words, equity credit is assigned based on initial tenor, and it is stepped down as maturity approaches.

Time to the first call date is given less emphasis and is not included into the basket assignment. However, if an issuer has publicly expressed its intention to call a hybrid in a short period of time, we typically include this in our overall credit analysis. Similar to share repurchases, the early call of a loss-absorbing hybrid could be a credit weakness.

Any Strong Incentive to Call a Hybrid Reduces the Level of Equity Credit

Any strong incentive for an issuer to call a hybrid such as a large step-up reduces the level of equity credit. Any hybrid with a step-up of more than 100 basis points over the initial credit spread is viewed as having an effective maturity at the first call date. Equity credit is reduced if there is any step-up prior to 10 years after issuance of the security or if there is a step up greater than 100 basis points over the life of the hybrid. For example, a subordinated debt instrument maturing in 30 years with optional deferral would typically be assigned basket B. However, if the same instrument included a large step-up (e.g., over 100 basis points) with first call date at year five, the security would typically be assigned Basket A. An exception to this rule is for maximum step-ups of 500 basis points in a change-of-control event, as long as all senior creditors are similarly protected in the event that the hybrid can be called.

Equity Credit Cap Continues to Apply

We set a limit on the amount of equity credit that can be derived from the issuance of hybrids within a capital structure.

The ratio that we use to limit equity credit is Hybrid Equity Credit/Adjusted Equity \leq 30%. This ratio is applied to hybrids issued by investment-grade entities. The ratio is applied to hybrids issued by investment-grade entities.

Common equity is likely to be a more predictable source of credit support, relative to typically engineered hybrids, and is often a dominant component of an issuer's capital structure. Cases where we may consider

For clarity, there could be instances where we would classify a preferred security as a subordinated debt instrument for purposes of assigning equity credit, and there could be instances where we would classify a deeply subordinated debt instrument as a preferred security for purposes of assigning equity credit.

The numerator (hybrid equity credit) is the total amount of equity credit assigned to the issuer's hybrids, based on their respective basket assignments. The starting point for the denominator (adjusted equity) is the issuer's reported equity, to which we apply our standard adjustments, one of which is an adjustment for hybrid equity credit, and we may also apply non-standard adjustments. Please see our cross-sector methodologies that discuss standard adjustments in the analysis of, respectively, non-financial corporations and financial institutions.

The equity credit cap does not apply to speculative-grade issuers. Given the relatively higher risks from other sources for speculative-grade issuers, any added risk from hybrids not behaving as expected does not have the same relative importance for the average speculative-grade versus the average investment-grade issuer. As a result, a hybrid equity credit cap for speculative-grade issuers is not necessary.

excluding a hybrid from the cap are hybrids that are, in effect, another class of common equity. See the appendix for more details of the cap's application for hybrids.

Convertible Hybrids Issued by Investment-Grade Entities

This class of securities includes hybrids that convert to equity or non-cumulative preferred stock, or are subject to a principal write-down under certain conditions. For example, mandatory convertible securities convert to equity or non-cumulative preferred stock at a date certain. Contingent capital securities, or CoCos, on the other hand, provide capital through conversion to common equity or through a permanent or temporary principal write-down upon a trigger breach; if conversion is not triggered, the host security — the security that the investor holds at issuance — must be repaid at maturity. In both cases, the host security can vary and range from senior debt to preferred stock and may or may not include coupon-skip mechanisms.

Convertible hybrids, including mandatory convertible securities and CoCos, tend to be short-dated and, as a result, do not receive a significant amount of equity credit compared to non-convertible hybrids with longer maturities. However, given that there is an equity-like component through conversion to a more junior security or principal write-down, we give varying amounts of equity credit, depending on how the hybrid is structured. In determining equity credit, the emphasis remains on the hybrid's benefit for a going concern and for a gone concern.

For example, in Exhibit 4, a cumulative three-year mandatory convertible preferred security provides material benefit for both of these considerations and is typically assigned basket E. If an issuer undergoes financial stress prior to equity conversion, coupons can be skipped for a going concern, there is a preferred claim in liquidation for a gone concern, and new equity is created at a date certain. In contrast, mandatory convertible securities that combine a three-year equity forward and a short-dated senior debt obligation (US common units) are typically placed in Basket A. There is no ability to skip coupons for a going concern, there is a senior debt claim in bankruptcy for a gone concern and there is a remarketing process that prevents direct conversion to equity unless remarketing fails.

US common units with a senior debt host are typically placed in Basket A because, if there is a bankruptcy prior to common shares being issued, holders have a debt claim. For a similar reason, US common units with a cumulative junior subordinated debt host and US preferred units with a cumulative junior subordinated host that converts to preferred stock are each assigned Basket B, in line with the way that we assign equity credit to the 'host' security for CoCos.

In assessing equity credit for CoCos, we consider the ability of the host security to absorb losses for a going concern, the circumstances under which conversion to common equity is triggered, and whether the investor receives a fixed or variable number of shares at conversion. Short-dated subordinated debt that converts to a fixed number of common shares based on the breach of a weak trigger is not a likely candidate for a significant amount of equity credit. On the other hand, a perpetual preferred host security with a non-cumulative coupon skip mechanism typically receives more equity credit.

Mandatory convertible preferred securities convert directly to a fixed number of common equity shares in three years. Synthetic unit structures typically combine a dated host security and a three-year equity forward contract. In year three, the host security is remarketed and proceeds are used to satisfy the holder's obligation to buy the equity under the terms of the equity forward contract. In bankruptcy, the claim in liquidation is typically based on the host security.

² CoCos have primarily been issued by banks, however insurance companies have also issued CoCos

EXHIBIT 4

Illustrative Examples† – Assigning Equity Credit to Convertible Hybrid Securities Issued by Investment-Grade Entities

	Host Security					
Maturity	Coupon Skip/ Settlement	Ranking	Conversion/ Write-down	Underlying Security	Conversion Ratio or Principal Write-down	Basket
5 to 10 years	None	Senior debt	3 years	Equity	Fixed number of shares	Α
5 to 10 years	None	Subordinated debt	Depends on where trigger level is set	Equity or principal write-down	Varies	В
5 years	Cumulative/ ACSM	Junior sub debt	3 years	Equity	Fixed number of shares	В
> 10 years	Cumulative/ ACSM	Junior sub debt	Earlier of 5 years or breach of regulatory cap trigger	Non-cumulative preferred	Par	В
Perpetual	Non-cumulative	Preferred stock	Depends on where trigger level is set	Equity or principal write-down	Varies	С
≤ 3 years	Cumulative	Equity***	Earlier of insolvency or maturity	Equity	Fixed number of shares	E
3 years	Cumulative	Preferred	Maturity	Equity	Fixed number of shares	E
	5 to 10 years 5 to 10 years 5 years > 10 years Perpetual ≤ 3 years	Maturity Coupon Skip/ Settlement 5 to 10 years None 5 to 10 years None 5 years Cumulative/ ACSM > 10 years Cumulative/ ACSM Perpetual Non-cumulative ≤ 3 years Cumulative	Maturity Coupon Skip/ Settlement Ranking 5 to 10 years None Senior debt 5 to 10 years None Subordinated debt 5 years Cumulative/ ACSM Junior sub debt > 10 years Cumulative/ ACSM Junior sub debt Perpetual Non-cumulative Preferred stock ≤ 3 years Cumulative Equity***	Maturity Coupon Skip/ Settlement Ranking Timing to Conversion/ Write-down 5 to 10 years None Senior debt 3 years 5 to 10 years None Subordinated debt Depends on where trigger level is set 5 years Cumulative/ ACSM Junior sub debt 3 years > 10 years Cumulative/ ACSM Junior sub debt Earlier of 5 years or breach of regulatory cap trigger Perpetual Non-cumulative Preferred stock Depends on where trigger level is set ≤ 3 years Cumulative Equity*** Earlier of insolvency or maturity	Maturity Coupon Skip/ Settlement Ranking Timing to Conversion/ Write-down Underlying Security 5 to 10 years None Senior debt 3 years Equity 5 to 10 years None Subordinated debt Depends on where trigger level is set Equity or principal write-down 5 years Cumulative/ ACSM Junior sub debt 3 years Equity > 10 years Cumulative/ ACSM Junior sub debt regulatory cap trigger Earlier of 5 years or preach of regulatory cap trigger Non-cumulative preferred stock Depends on where trigger level is set Equity or principal write-down ≤ 3 years Cumulative Equity*** Earlier of insolvency or maturity Equity	Maturity Coupon Skip/ Settlement Ranking Timing to Conversion/ Write-down Underlying Security Conversion Ratio or Principal Write-down 5 to 10 years None Senior debt 3 years Equity Fixed number of shares 5 to 10 years None Subordinated debt Depends on where trigger level is set Equity or principal write-down Varies 5 years Cumulative/ ACSM Junior sub debt ACSM Earlier of 5 years or breach of regulatory cap trigger Non-cumulative preferred Par Perpetual Non-cumulative Preferred stock Depends on where trigger level is set Equity or principal write-down Varies ≤ 3 years Cumulative Equity*** Earlier of insolvency or maturity Equity Fixed number of shares 3 years Cumulative Preferred Maturity Equity Fixed number of

[†] This table is illustrative of common convertible hybrids but is not an exhaustive compendium.

Assigning Equity Credit: Hybrids, Including Shareholder Loans, Issued by Speculative-Grade Entities

While the previous section provides a general framework for assessing the relative debt and equity characteristics of hybrids issued by investment-grade non-banks, that approach is less suited for assessing the characteristics of hybrids issued by speculative-grade issuers. Relative to investment-grade issuers, speculative-grade issuers are materially closer to default, have shorter-dated, dynamic and typically more-complex capital structures, as well as debt with more covenants. Additionally, speculative-grade issuers often opt to cease hybrid coupon payments because such actions are contractually allowable without triggering a default. There is less certainty relative to investment-grade issuers that hybrid coupon payments will be made, particularly if a debt default can be avoided by ceasing hybrid coupon payments.

For the avoidance of doubt, for Government-Related Issuers, we apply the investment-grade approach if the senior unsecured (or equivalent) rating is investment-grade, even if the Baseline Credit Assessment (BCA) is speculative-grade.

In assessing the debt and equity characteristics of hybrids issued by speculative-grade issuers, we assess the legal treatment these securities would likely receive in a bankruptcy scenario. Our general approach is as follows:

1) Preferred stock and other similar equity instruments that have no debt claim in bankruptcy and cannot accelerate due to nonpayment or trigger a broader issuer-wide default are given 100% equity credit in calculating a company's adjusted financial metrics and, in the case of companies to which we apply our

^{*} The Basket B treatment assumes that the host security will be remarketed as a subordinated debt security.

^{**} In instances where the contingent capital security is considered to be a high-trigger contingent capital security (i.e., triggering principal write-down or equity conversion), we typically increase the level of equity credit by one basket.

^{***}Typically, the host security is debt at issuance, but in bankruptcy, it has an equity claim.

loss given default (LGD) cross-sector methodology, are excluded from the debt waterfall in the LGD model 13

2) All debt (i.e., non-equity) instruments are treated as 100% debt in calculating a company's adjusted financial metrics and are included in our LGD model debt waterfall. An equity instrument is defined as one that has both of the following characteristics: no debt claim at any time (i.e., in bankruptcy or prior to bankruptcy), and the non-performance of the instrument cannot directly or indirectly trigger a broader issuer wide default.

The exception to the above treatment of debt instruments is certain deeply subordinated debt held by the owners of the issuer's common stock, often referred to as **shareholder loans** and typically issued by corporates, which meet specific conditions that make them effectively functionally equivalent to equity, i.e., with no ability to influence the probability of default and loss given default (LGD) on the more senior debt of a company. If the shareholder loans meet the criteria described in the "Treatment of Shareholder Loans" section that follows, we treat them as similar to equity from a credit perspective 14.

Our approach reflects the heightened risk of default and bankruptcy for speculative-grade issuers relative to investment-grade issuers and is consistent with the application of our LGD model used to help assign ratings to debt issued by speculative-grade corporates. Additionally, the approach is consistent with our definition of default in that only debt instruments or debt-like obligations can default.

If an issuer with hybrids outstanding moves from investment-grade to speculative-grade status, the speculative-grade approach will apply, and vice versa. The debt and equity treatment for these hybrids may change as a result of the different approaches used for speculative-grade and investment-grade issuers. For instance, hybrids that are considered equivalent to preferred stock, but have a debt claim in bankruptcy, would receive 100% debt treatment under the approach for speculative-grade issuers, but only partial equity credit under the investment-grade approach.

While this methodology focuses on the debt and equity treatment for hybrids in calculating adjusted financial metrics, we note that such metrics are not the sole basis for assessing the creditworthiness of a company and that many factors, as outlined in our sector rating methodologies, are considered in assigning a company's issuer rating or corporate family rating (CFR).

Although this methodology applies a binary approach to debt and equity for speculative-grade issuers, a small difference in a hybrid qualifying as 100% equity under this methodology versus qualifying as 100% debt is not always analytically equivalent to substituting common equity for senior long-term debt. In other words, 100% debt versus 100% equity for the presentation of numerical ratios does not always imply 100% debt versus 100% equity for fundamental credit analysis, and we may consider the composition of the capital structure qualitatively in our analysis.

Treatment of Shareholder Loans

In jurisdictions where the issuance of preferred stock and similar equity instruments by corporates is absent or rare for legal reasons or as a result of well-established market practices, common equity often represents only a small portion of the shareholder funding used to finance leveraged acquisitions and re-capitalizations. Instead, in these jurisdictions, the majority of shareholder funding for such corporate transactions is often

Our LGD model is used to help assign debt instrument ratings of speculative-grade non-financial corporations in certain jurisdictions. For more details, see our cross-sector methodology for loss given default for speculative-grade companies, which can be accessed via a link to an index of our cross-sector and rating methodologies in the "Moody's Related Publications" section of this report.

¹⁴ For clarity, this applies only to loans issued by speculative grade issuers. Shareholder loans or other similar intragroup loans issued by investment grade corporate issuers would typically not receive any equity credit.

made through the issuance of shareholder-owned deeply subordinated debt. In many countries in Europe, for example, these instruments often go by the name of shareholder loans or preferred equity certificates.

Terms are often drafted such that, from the perspective of the issuer's other creditors, the shareholder loan behaves equivalently to equity. Therefore, the probability of default and loss given default on more senior debt are unaffected by the proportions of equity and the shareholder loan in the issuer's capital structure.

As a result, for speculative-grade corporates, we assign 100% equity credit to shareholder loans and, where we apply the LGD methodology, exclude them from the LGD model debt waterfall if they meet all¹⁵ the required conditions outlined below; otherwise, we treat them as 100% debt and, where we apply the LGD methodology, include them in the LGD model debt waterfall.¹⁶ The approach is to consider the credit documentation holistically, assessing the terms of the shareholder loan and its interaction with other credit documents pertaining to the rated group of entities, including the loan, bond and inter-creditor agreements.

REQUIRED CONDITIONS FOR THE ASSIGNMENT OF 100% EQUITY CREDIT TO SHAREHOLDER LOANS:

(1) The shareholder loan is junior to all liabilities, with the exception of other tranches of shareholder loans that also meet the conditions for 100% equity credit.

We expect such subordination to be captured in an inter-creditor agreement (or subordination agreement) that also documents enforcement processes and the application of recovery proceeds. We also expect that the shareholder loan will be contractually subordinated to all liabilities within the rated group, including non-financial liabilities such as trade creditors, and will be subordinated to future liabilities within the rated group.

In certain cases, holders of the shareholder loan may have a claim following an insolvency event. In such cases, we expect the inter-creditor agreement to ensure that any claim is economically junior to all other debt claims such that the proceeds from any enforcement of collateral are applied first to all other financial and non-financial creditors until those claims have been fully discharged.

(2) The documentation eliminates any and all rights of holders of any shareholder loan to directly or indirectly influence a company's default probability, or the position or recovery prospects of any other creditors within the rated group following any form of default or bankruptcy proceeding.

The terms of the shareholder loan and the inter-creditor agreement, considered comprehensively, need to document the following:

- » No covenants (other than informational covenants where failure to comply has no consequences), no acceleration rights, no right to declare default or an event of default; or, if such rights exist, they are unenforceable until all senior debt has been repaid in full.
- » No security encumbrances within the rated group.
- No amortization, redemption or other prepayment allowable prior to maturity of the more senior-ranking instruments in the capital structure, except to the extent that such payments could have been accommodated out of equity distributions in an all-equity structure and are subject to a restricted payments test, which is no different than the typical restrictions on repurchasing common stock.

¹⁵ Absent unusual or extenuating circumstances, all of the conditions must be met in order for a shareholder loan to be treated as equity.

¹⁶ In regions where preferred stock is commonly issued by corporates (e.g., North America), the issuance of shareholder loans that would meet the conditions for 100% equity credit is likely to be rare or even non-existent.

- » No enforceable put options prior to the maturity of the senior debt, even if permitted by a restricted payments test.
- » Given the inherent uncertainty over insolvency proceedings in various jurisdictions, the maturity of any shareholder loan is at all times at least six months beyond the maturity of any other debt within the rated group.
- (3) We expect the economic interests of the common equity and the shareholder loan to be aligned through "stapling" (i.e., evidence at issuance that the shareholder loan is owned by the common stockholders and, after issuance, restrictions on transferability of the shareholder loan to a party other than a common stockholder that ensure that such alignment is maintained). 17
- (4) Protections are present on cash leakages from the company as a result of interest or principal payments associated with the shareholder loan.

While many such shareholder loans are payment-in-kind (PIK) only, some permit cash distributions to shareholders in the form of cash interest or principal payments. Such distributions are generally governed by a restricted payments test. We require that the presence of the shareholder funding does not imply an increase in the amount of cash distributions that could otherwise be made. Hence, the restricted payments test should not differentiate in any way between a dividend payment on common equity and a cash payment made under the shareholder loan.¹⁸

(5) Protections for other creditors are present in the event changes are made to the terms of the shareholder loan.

Any changes to the financing documentation, including the terms of the shareholder loan or the intercreditor agreement, that impact any of the conditions outlined in sections (1) through (5) above need majority approval of senior financial creditors, or equivalent protections. ¹⁹

Subsequent to the initial assignment of a company's ratings based on the issuance of a shareholder loan meeting the requirements for 100% equity credit, if we become aware that any of the terms have changed such that the required conditions discussed above are no longer met, we will treat the shareholder loan as 100% debt in calculating a company's adjusted financial metrics and, where applicable, include it in the LGD model debt waterfall. We will adjust all of the company's ratings as necessary to reflect any changed view we may have regarding the creditworthiness of the company and its more senior debt.

In some structures, once the senior debt of the company has been refinanced or paid off, the restrictions imposed by the inter-creditor agreement may no longer apply, and standard covenants within the shareholder loan may have force, including rights to trigger a default event and acceleration. In these cases, we would usually consider the specific terms of the inter-creditor and shareholder loan agreements, and we may not be able to assign equity credit if the issuer has the right to subsequently issue new senior debt without the protections of the original inter-creditor agreement in place.

Differences in percentage ownership of the common equity and the shareholder loan may arise, for example, to facilitate management incentives. However, we require sufficient overlap in ownership to ensure commonality of interests.

⁸ Early distribution of cash in a highly leveraged company is credit negative and may negatively impact the corporate family rating even in the absence of an explicit debt adjustment. The payment would be included in other metrics that include cash flow and would also weigh on financial policy considerations.

¹⁹ Equivalent protections would ensure that permitted changes solely are (i) minor, administrative or correct a technical error; or (ii) not materially less favourable to senior financial creditors as determined by an independent third party.

Ratings of Hybrid Securities

We may rate hybrids, separately from assigning hybrid equity credit. In general, hybrids with greater loss-absorbing features have greater credit risk, which is reflected in their ratings. Please see our cross-sector methodology that discusses the notching of corporate instrument ratings based on differences in security and priority of claim. For certain sectors where issuers employ hybrids, notching guidance for these securities may be found in the relevant sector methodology. Please also see our cross-sector methodology that discusses variable promises.²⁰



²⁰ A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section of this report

Appendix

Hybrid Equity Credit Limit for Investment-Grade Issuers Subject to This Methodology²¹

We limit the amount of total equity credit derived from hybrids within a capital structure. The ratio and threshold that we use are:

The numerator (hybrid equity credit) is the total amount of equity credit assigned to the issuer's hybrids, based on their respective basket assignments. The starting point for the denominator (adjusted equity) is the issuer's reported equity, to which we apply our standard adjustments, one of which is an adjustment for hybrid equity credit, and we may also apply non-standard adjustments. Please see our cross-sector methodologies that discuss standard adjustments in the analysis of, respectively, nonfinancial corporations and financial institutions.

Cases where we may consider excluding a hybrid from the cap are hybrids that are, in effect, another class of common equity.

Common equity is likely to be a more predictable source of credit support under new or stressful circumstances than hybrids and is often the dominant non-debt component of a company's capital structure. We view hybrids as a viable funding source that may provide additional cushion to senior creditors at times of stress, depending on the mix and proportion to other junior capital. However, while equity is relatively simple and straightforward, hybrids have more complex terms and features, and they may act in unexpected ways, particularly at a time of stress.

For example, investment-grade issuers may be reluctant to defer or omit hybrid coupons in order to keep market access. While equity provides for a variable cash payout based on the company's profits, most hybrids offer a fixed coupon to investors. Hybrid coupons can be deferred or entirely cancelled, but a company, particularly an investment-grade company, will generally try to pay hybrid coupons as long as possible and to defer these payments only if it is undergoing severe financial stress, in order to meet market expectations. Also, an issuer might delay suspending a hybrid coupon under the apprehension that such an action could cause investors to focus on deterioration in the issuer's credit profile and could restrict capital market access in the future.

Application of the Equity Credit Cap

The hybrid equity credit cap applies to hybrids issued by investment-grade issuers that are subject to this methodology and is a general guideline for limiting the equity credit contribution of hybrids relative to straight common equity. The 30% threshold is applied based on our forward-looking view of an issuer's capital structure. The threshold also factors in experience of cases where hybrids have, unexpectedly, not contributed to providing flexibility to issuers in financial distress or to mitigating losses for senior creditors. The 30% threshold is an estimate for the point beyond which hybrids that fail to perform as anticipated are more likely to be problematic for an issuer that undergoes financial stress. Hybrid issuances that exceed the cap are still assigned to a basket, but are generally viewed as 100% debt for ratio purposes. By doing this, the integrity of the basket is maintained in the event that room is created under the cap in the future.

The greater the total hybrid equity credit assigned to an issuer's hybrids, the smaller the amount that can be added, subject to the cap. For example, if a company has adjusted equity outstanding of \$1.4 billion,

Please refer to the "Scope of This Methodology" section of this report.

excluding equity credit, then subject to the 30% cap, equity credit would be limited to \$600 million²². If the company were to issue hybrid securities, this maximum would apply regardless of the amount of securities issued or the combination of instruments involved. The table below further illustrates this example. For each hybrid basket, we show the threshold amount of hybrids beyond which equity credit would be limited to \$600 million. We also illustrate, the amount of equity credit that would be assigned to each basket, based on \$1.0 billion face amount of securities and subject to the cap.

EXHIBIT 5

Illustration of Hybrid Equity Credit Tolerance

(USD Millions)

Adjusted Equity (excluding hybrid equity credit)	Moody's Basket	Basket Credit	Equity Credit Limitation*	Threshold Level** Ill	ustrative Face Amount	Equity Credit Assigned***
\$1,400	Α	None	Not Applicable	Unlimited†	Unlimited†	None
\$1,400	В	25%	\$600	\$2,400	\$1,000	\$250
\$1,400	С	50%	\$600	\$1,200	\$1,000	\$500
\$1,400	D	75%	\$600	\$800	\$1,000	\$600
\$1,400	E	100%	\$600	\$600	\$1,000	\$600

- † Effectively unlimited because no equity credit is given to a Basket A hybrid.
- * We use the threshold ratio defined above to compute the maximum available equity credit. In particular, 600/(1,400+600) = 30%.
- ** The threshold represents the aggregate amount of hybrids securities beyond which no further equity credit would be assigned. For Basket B, above, the threshold is \$600/.25 = \$2,400.

Theoretically, in the above example, the company could greatly expand its capital structure with Basket B hybrids before breaching the cap. However, large issuances of more debt-like hybrids would also lead to a high leverage ratio because more debt than equity is added.

Exhibit 6 summarizes how the cap and adjusted equity are calculated for investment-grade issuers subject to this methodology:

EXHIBIT 6	
	Calculation of the 30% Cap
Formula:	Hybrid Equity Credit / Adjusted Equity ≤ 30%
Numerator:	Sum of: the amount of each of the issuer's hybrid instruments times the equity credit level associated with that instrument's basket
Denominator:	Adjusted Equity = Reported Equity +/- Moody's standard adjustments (including hybrid equity credit) +/- non-standard adjustments

In some instances, we may believe that there is a substantial difference between equity as stated on an issuer's balance sheet and the economic value of the firm. For example, some companies show negative balance sheet equity but consistently report net income and cash flow that implies a substantially higher level of economic equity. In such cases, when balance sheet equity is minimal or negative, we may use an EBITDA multiple to estimate enterprise value and arrive at a proxy for reported equity in the above ratio.²³

^{***} Hybrid face amount (\$1.0 billion) multiplied by the corresponding basked credit and subject to the \$600 million maximum. For example, baskets D and E are limited by the \$600 maximum in this example.

We use the threshold ratio defined above to compute the maximum available equity credit, here represented by x (in USD million units), by solving x / (1,400+x) =30%, which gives x = 600.

For such companies with low or negative equity, we typically use the following as a proxy for the as-reported equity: 6x EBITDA - Total Liabilities + Deferred Taxes + Minority Interest.

Moody's Related Publications

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

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

For further information, please refer to Rating Symbols and Definitions, which is available here.



» contacts continued from page 1

Analyst Contacts:

Christine Kuo

HONG KONG +852.3551.3077

+852.3758.1418

Senior Vice President christine.kuo@moodys.com

Clara Lau +852.3758.1333

Senior Vice President clara.lau@moodys.com

LONDON +44.20.7772.5454

William Coley +44.20.7772.8799 Senior Vice President william.coley@moodys.com Report Number: 1125264

Authors Margaret Kessler Michelle Chalker Pano Karambelas

Production Associate Santhosh V

© 2018 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL DESIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

