MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

Short-term Debt of US States, Municipalities and Nonprofits Methodology

Table of Contents:

INTRODUCTION	1
SCOPE OF THIS METHODOLOGY	2
GENERAL APPROACH TO ASSIGNING SHORT-TERM RATINGS FOR US STATES, MUNICIPALITIES AND NONPROFITS	2
OTHER CONSIDERATIONS	17
ASSIGNING SHORT-TERM RATINGS	20
KEY RATING ASSUMPTIONS	21
LIMITATIONS	21
APPENDIX A: CERTAIN DEFINED TERMS AND STRUCTURES	22
MOODY'S RELATED PUBLICATIONS	24

Analyst Contacts:

NEW YORK +1.212.553.1653

Dan Seymour +1.212.553.4871
Vice President-Senior Analyst
dan.seymour@moodys.com

Susan Fitzgerald +1.212.553.6832
Associate Managing Director
susan.fitzgerald@moodys.com

Lisa Martin +1.212.553.1423
Senior Vice President
lisa.martin@moodys.com

Joann Hempel +1.212.553.4743
Vice President - Senior Credit Officer
joann.hempel@moodys.com

Thomas Jacobs +1.212.553.0131
Senior Vice President/Manager
thomas.jacobs@moodys.com

Timothy Blake +1.212.553.4524
Managing Director - Public Finance
timothy.blake@moodys.com

Kendra Smith +1.212.553.4807
Manging Director - Public Finance
kendra.smith@moodys.com

» contacts continued on the (second to) last page

This rating methodology combines and replaces the *US Bond Anticipation Notes and Related Instruments Methodology* published in October 2019, the *Short-Term Cash Flow Notes* methodology published in April 2013, and the *Municipal Bonds and Commercial Paper Supported by a Borrower's Self-Liquidity Methodology* published in October 2019. We retained the approach for short-term ratings based on our analysis of the borrower's own liquid resources (self-liquidity), but changed our approaches for rating bond anticipation notes (BANs) and short-term cash flow notes. The key revisions include the elimination of the scorecards for BANs, cash flow notes, and BANs financed by the US Department of Agriculture (USDA). For BANs and short-term cash flow notes the issuer's long-term credit quality is a primary factor, and for USDA BANS the long-term credit quality of the US Government is a primary factor. Short-term ratings for these instruments incorporate additional considerations. We have also made editorial changes to enhance readability.

Introduction

In this rating methodology, we explain our general approach to assigning short-term ratings for US states, municipal entities and nonprofit organizations, where the repayment of the short-term obligation relies on the issuer's available liquid resources or access to the capital or credit markets, for additional or replacement debt issuance. We describe the qualitative and quantitative factors that are likely to affect rating outcomes.

We also discuss other considerations, which are factors whose credit importance varies widely among issuers in the public and nonprofit sectors or factors that may be important only under certain circumstances or for a subset of issuers. In addition, some of the methodological considerations described in one or more cross-sector rating methodologies may be relevant to short-term ratings. Furthermore, since ratings are forward-looking, we often incorporate directional views of risks and mitigants in a qualitative way.

Our presentation of this rating methodology proceeds with (i) the scope of this methodology; (ii) a description of our general approach; (iii) discussions of the primary rating factors for the three methodology approaches, which are differentiated based on the source of repayment and transaction structure; (iv) other considerations; (v) the assignment of short-term ratings; (vi) methodology assumptions; and (vii) limitations. In Appendix A, we describe certain types of transaction structures.

Scope of This Methodology

We use this methodology to assign short-term ratings for US state, municipal and nonprofit entities, where the repayment of the short-term obligation relies on the issuer's available liquid resources or access to the capital or credit markets for additional or replacement debt issuance. These ratings may be assigned to issuers, short-term debt programs or individual debt instruments.

The short-term ratings we assign under this methodology to indicate relative short-term repayment ability may be based on the Global Short-Term Rating scale, the Municipal Investment Grade (MIG) rating scale or the Variable Municipal Investment Grade (VMIG) rating scale. Please see Exhibit 2 below and *Rating Symbols and Definitions*.[1]

We do not use this methodology to assign short-term ratings where third-party liquidity support is primary repayment source for the short-term obligation (e.g., to repay a demand bond or commercial paper (CP) that cannot be remarketed). See our methodology that discusses variable-rate instruments supported by conditional liquidity facilities.[2]

General Approach to Assigning Short-term Ratings for US States, Municipalities and Nonprofits

We have three somewhat different approaches, depending on the source of repayment for the obligation and the transaction structure.

Self-liquidity Approach

We use the self-liquidity approach to assess transactions whose repayment largely depends on immediate access to an issuer's available liquid resources for repayment. Because these financial resources must be available on the same day as the maturing debt, we refer to them as daily liquidity.

Examples of the types of structures rated under this approach include commercial paper (CP) or variable-rate demand obligations (VRDOs) with frequent tender features (typically less than six months).[3] In the event of a failed rollover or remarketing, these structures usually do not provide a borrower with sufficient time to meet rollover or tender dates without using its own available liquid resources as the largest, and often only, source of repayment.

Market Access/Cash Flow Approach

We use the market access/cash flow approach to assess transactions with scheduled repayment dates whose repayment largely depends on an issuer's access to the capital or credit markets or on its cash flow, with only secondary reliance on its available liquid resources.

Typically, where an issuer intends to access the capital or credit markets as the principal source of repayment for a short-term obligation, the transaction terms provide the issuer with sufficient time to plan for additional or replacement debt issuance ahead of a fixed maturity, redemption, or tender date.

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.

1 A link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

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

3 See Appendix A for more information.

Examples of the type of structures rated under the market access/cash flow approach include:

» Short-term cash flow notes, which are generally issued by state, municipal or nonprofit organizations to bridge seasonal or other intra-year operating cash flow shortfalls and generally have a fixed repayment date.

» Bond anticipation notes (BANs), which are short-term notes that provide US states, municipalities and nonprofit organizations with interim financing for capital projects in anticipation of accessing credit markets for long-term financing.

» Extendable CP, whose initial maturity date automatically extends a pre-set number of days in the case of a failed rollover. The issuer is obligated to pay the CP outstanding on the new, extended maturity date.

» Variable-rate demand obligations (VRDOs) with scheduled mandatory tenders of six months or longer, or VRDOs with mandatory tenders upon failed remarketing (such as VRDOs in windows mode[4]), where the date of the mandatory tender is at least six months after the failed remarketing.

USDA Financing Approach

For transactions whose repayment relies on a commitment from the US government to provide take-out financing through the US Department of Agriculture (USDA) Office of Rural Development, we use the USDA financing approach. These transactions are typically structured as notes with a fixed maturity date, issued by unrated borrowers.

Primary Factors and Other Considerations

In the sections that follow, we describe the primary factors for each of the three approaches. The "Other Considerations" section describes additional considerations that may pertain to all three approaches.

Self-liquidity Approach: Primary Factors

We use the self-liquidity approach to assess transactions whose repayment largely depends on an issuer's immediately available liquid resources.

This methodology framework comprises three factors. The Structure and Notification Procedures and the Long-Term Credit Quality factors are used to arrive at an issuer's highest potential short-term rating. We may then apply downward notching, based on the Debt Management and Liquidity factor, which has two sub-factors. The result of this analysis is the indicated outcome before other considerations.[5]

[4] Windows mode is an interest-rate mode available under some transaction structures. For more information, see Appendix A.

[5] Please see the "Other Considerations" section.

EXHIBIT 1
Self-liquidity Approach: Factors and Sub-factors

Factor	Sub-factor
Structure and Notification Procedures	--*
Long-term Credit Quality	--*
Highest Potential Short-term Equivalent	
Debt Management and Liquidity	Debt and Treasury Management Strength
	Liquidity Sufficiency and Composition
Indicated Outcome before Other Considerations	

*This factor has no sub-factors.

Source: Moody's Investors Service

Factor: Structure and Notification Procedures

Why It Matters

The structure of the transaction and clear and timely notification procedures are important because they help to mitigate the risk of insufficient or late payments to bondholders in the event of a failed remarketing of the bonds or CP.

Full and timely payment to holders of short-term municipal bonds and CP in the event of a failed remarketing depends on the clear understanding of the various parties to the transaction of their responsibilities and obligations within the structure. Those parties include the issuer, its external investment managers, the trustee, the tender agent, the remarketing agent and any banks providing backup liquidity facilities. If the bond or CP program documents and the agreements between the issuer and its investment managers or banks do not have clear, timely notification procedures, the risk of late payments in the event of a failed remarketing of the bonds or CP may increase.

How We Assess It

In assessing the structure of the transaction, we consider whether the bond documents specifically indicate that the issuer is obligated to pay the full purchase price of the debt in the event of a failed remarketing.

We assess whether the transaction documents, including the trust indenture, tender and remarketing agreements, provide clear and timely procedures to all parties to the transaction in the event of a failed remarketing. We also assess whether the notification to the issuer provides adequate time for the issuer to liquidate investments to meet the payment or to make a draw on a backup bank facility, within the guidelines established by the external managers or bank.

Because our assessment of this factor reflects both full and on-time payment in the event of a failed remarketing, transaction procedures that are inadequate typically result in a speculative-grade rating (SG), regardless of our assessment of the other factors.

Factor: Long-term Credit Quality

Why It Matters

The strength or weakness of an issuer's long-term credit quality is an important indicator of its ability to fund failed remarketings of its short-term obligations.

How We Assess It

An issuer's highest potential short-term rating is mapped from its long-term rating (see Exhibit 2).[6] The issuer's long-term rating is assigned using the relevant sector methodology.[7]

EXHIBIT 2

Mapping to the Short-term Rating from the Long-term Rating[8]

LONG-TERM RATING	SHORT-TERM RATING
Aaa, Aa1, Aa2, Aa3, A1, A2, A3	MIG 1/VMIG 1/Prime-1
A3, Baa1, Baa2	MIG 2/VMIG 2/Prime-2*
Baa2, Baa3	MIG 3/VMIG 3/Prime-3
Ba1, Ba2, Ba3 B1, B2, B3 Caa1, Caa2, Caa3 Ca, C	SG/Not Prime

*While the mapping in Exhibit 2 includes some overlap in the short-term rating that can be assigned from a given long-term rating, issuers with long-term ratings between A3 and Baa2 typically map to MIG 2/VMIG 2/Prime-2.

Source: Moody's Investors Service

Factor: Debt Management and Liquidity Profile

Why It Matters

The debt management and liquidity profile provide important indications of an issuer's ability to quickly marshal its resources to meet the demands of a failed remarketing.

This factor has two sub-factors, which are used to assess, in aggregate, the quantity, quality and accessibility of liquidity to determine the typical number of downward notches we apply to the highest potential short-term rating. As described below, ratings also incorporate other considerations.

» Debt and Treasury Management Strength

[6] The reference rating typically used for this mapping is the issuer rating, the general obligation debt rating or the senior unsecured revenue debt rating for state and municipal issuers and the issuer rating or senior unsecured debt rating for nonprofit issuers. Where there is no published long-term rating, an assessment of long-term credit characteristics is considered in the determination of the short-term rating.

[7] A link to an index of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

[8] Please also see our cross-sector methodology that discusses short-term ratings and *Rating Symbols and Definitions*. A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

» Liquidity Sufficiency and Composition

How We Assess It

DEBT AND TREASURY MANAGEMENT STRENGTH:

In scoring this qualitative sub-factor, we classify the strength of an issuer's management of its debt and its treasury functions into four categories: strong, medium, limited or weak. Our assessment is based on a preponderance of attributes for each classification level (see Exhibit 3).

EXHIBIT 3

Debt and Treasury Management Strength Assessment

Classification	Typical Attributes
Strong	
	Dedicated professional debt and treasury personnel with strong experience and fiscal sophistication; amply staffed (typically at least five members).*
	Well-documented policies and procedures, supported by strong systems, that clearly assign responsibilities to appropriate staff to respond to calls on liquidity.
	A strong history of compliance with policies and procedures with no exceptions.
	Where relevant, dedicated bank lines that are well-diversified across counterparties, with staggered expiration dates, and advance planning for bank line expiration.
	A history of at least annual access to the debt markets and experience managing multiple types of debt instruments.
	A history of strong working capital and investment portfolio management, including regular stress-testing of portfolio.
Medium	
	Dedicated professional debt and treasury personnel with strong experience and fiscal sophistication; well-staffed (typically three to four members).*
	Well-documented policies and procedures, supported by moderately strong systems, that clearly assign responsibilities to appropriate staff to respond to calls on liquidity.
	A generally strong history of compliance with policies and procedures with few exceptions.
	Where appropriate, dedicated bank lines that are somewhat diversified across counterparties, with staggered expiration dates, and advance planning for bank line expiration.
	A history of access to the debt markets at least every three years and experience managing multiple types of debt instruments.
	A history of entirely adequate working capital and investment portfolio management, including reasonable assumptions but little or no stress-testing.
Limited	
	Dedicated professional debt and treasury staff with moderate experience; adequately staffed (typically one or two members).*
	Clear policies and procedures, supported by adequate systems, that assign responsibilities to appropriate staff; procedures may not be clearly documented.
	A history of compliance with policies and procedures that includes multiple exceptions.
	Infrequent history of access to the debt markets, approximately once every five years.
	A history of mostly adequate working capital and investment portfolio management with somewhat optimistic assumptions and no stress testing.
Weak	
	No dedicated debt and treasury staff members; limited experience with treasury management.
	Poor ability to articulate debt and liquidity policies and procedures; weak systems.
	Poor history of compliance with policies and procedures.
	Infrequent history of access to the debt markets of less than once every five years.
	A limited or inconsistent history of working capital and investment portfolio management with very optimistic assumptions and no stress testing.

*In this assessment, we include members of the finance staff involved in decision making around debt or treasury functions, as well as dedicated finance and investment management staff.

Source: Moody's Investors Service

LIQUIDITY SUFFICIENCY AND COMPOSITION:

We classify liquidity sufficiency and composition into four categories: strong, medium, limited or weak. Our assessment is based on quantitative and qualitative considerations.

The primary quantitative metric is the daily coverage ratio, which is a scenario analysis of the coverage of potential calls on liquidity by liquid assets accessible within a day. The ratio's denominator includes all VRDOs in either a daily, weekly or CP mode. It also includes the amount of CP expected to be outstanding over the subsequent six months. When the issuing and paying agent agreement or other authorizing document restricts the amount of CP maturing within a five-day period to a maximum amount (a provision in some municipal structures), the amount of CP included in the denominator is capped by this five-day limit.

The numerator for the daily coverage ratio includes investments that can be liquidated on a same-day basis (daily liquidity). As part of this scenario analysis, we apply discount rates to some of these investments based on their type, because the necessity to sell assets quickly to meet liquidity requirements could require that they be sold at a discount.

Exhibit 4 lists the types of investments we include in the calculation of daily liquidity and the discount rates applied to each.

EXHIBIT 4

Types of Investments Included in Daily Liquidity for Coverage Calculation and Discounts

Type of Investment	Discounts
Money market funds rated Aaa-mf*	0%
Checking and deposit accounts at P-1-rated banks	0%
US Treasury and government agency securities with less than 2-year maturity	6%
US Treasury and government agency securities with 2 to 10-year maturity	10%
US Treasury and government agency securities with 10-year or longer maturity	15%
Eligible repurchase agreements	6%

*Published or privately assessed. Please see our sector rating methodology that discusses money market funds. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Source: Moody's Investors Service

Money Market Funds

We include SEC 2a-7 money market funds as a source of daily liquidity provided that they are rated Aaa-mf, whether assigned through a published rating or a private assessment.[9]

US Treasury and Government Agency Securities

We consider US Treasury and government agency securities a source of daily liquidity. We apply a 6% discount to securities with maturities of less than two years, a 10% discount to securities that mature in two to less than 10 years, and a 15% discount to securities that mature in 10 years or longer.

[9] Please see our methodology that discusses money market funds. A money market fund rating is not a credit rating but is an Other Permissible Service. For more information on MMF ratings, please see *Rating Symbols and Definitions*. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Eligible Repurchase Agreements

We consider repurchase agreements (these may be referred to by various terms, including a sale-repurchase agreement, a repo or a reverse repo) a source of same-day liquidity under certain circumstances. In a basic transaction, the borrower lends cash overnight to a counterparty and receives a government security as collateral. We discount these repos 6% in our discounted daily liquidity calculation, reflecting the minimum haircut we apply to Treasury and government agency securities. A variety of criteria must be met for the repo to be included in our daily liquidity calculation, including:

» The repurchase agreement is an overnight transaction with the cash returned to the borrower the following day.

» The transaction is collateralized by US Treasury or government agency securities.

» The margin on repo collateral is consistent with industry conventions.

» Collateral is marked-to-market daily.

» Repo counterparties have short-term ratings of P-1.

» We consider bilateral repurchase agreements a source of same-day liquidity in which the collateral is held by the municipal issuer in its account with the counterparty and the cash is returned immediately once the collateral is returned. We do not consider tri-party repurchase agreements as a source of same-day liquidity because under the typical tri-party repo process, the timing for unwinding the repurchase agreement is not sufficient for daily liquidity.

Other Liquid Investments

In addition to the investment types listed above, we may also consider other types of investments sources of same-day liquidity if they can be liquidated within a day. In these cases, we apply a discount rate to the value of the investment.

For example, a few public sector entities hold assets with their state's treasury or with a state-related investment fund. Inclusion of these assets as a source of daily liquidity is considered based on the specific attributes of the investment and our assessment of the creditworthiness and stability of the investment and the investor's ability to access funds on an immediate basis.

Under certain conditions, we may also consider backup bank facilities as a supplement to an issuer's own daily liquidity and include in the daily liquidity for the coverage calculation. For the facility to be considered, the facility provider must be a P-1-rated bank. Additionally, where the backup bank facility includes a rating trigger that requires the issuer to maintain an investment-grade rating, we include the facility in our assessment of daily liquidity only when the issuer's own rating is A3 or higher.

To be considered in our daily liquidity analysis, the bank facilities must be structured with limited conditions precedent to funding (including no material adverse change clause), and a same-day drawing option that will provide funds in time to meet the self-liquidity issuer's payment obligation. Additionally, automatic termination and suspension events must be limited to those representing severe credit events of the borrower. For more detail on the typical characteristics of credit facilities

that qualify as daily liquidity, please see our methodology that discusses variable rate debt supported by conditional liquidity facilities.[10] For example, severe credit events include:

» Issuer nonpayment on the rated debt or similarly secured debt.

» Issuer bankruptcy or insolvency.

» Downgrade of the issuer's long-term debt rating below investment grade (this provision disqualifies the backup facility as daily liquidity when the issuer's long-term rating is Baa1 or lower).

» Nonpayment of a material judgment that remains unbonded, unvacated or unstayed.

» Invalidity of the bonds or certain key documents or provisions related to the security or payment of bonds.

Qualitative Liquidity Considerations

While the daily coverage ratio is a primary part of our overall assessment of Liquidity Sufficiency and Composition, this sub-factor also includes qualitative attributes for each classification level (see Exhibit 5).

In assessing the diversity and quality of the issuer's liquidity portfolio, we consider the number of sources of liquidity to which a self-liquidity issuer has access in the event of a failed remarketing. We also assess the types of investments an issuer holds for liquidity to determine the quality of the portfolio.

We consider a well-diversified, high-quality liquidity portfolio to be composed mostly of money market funds and low-risk securities provided by a wide variety of counterparties, as well as US Treasury securities. We consider a liquidity portfolio to have limited diversity when it consists of money market funds and other securities provided by a limited number of counterparties. We consider a liquidity portfolio to be undiversified when investments, excluding US Treasury securities, are provided by only one or two investment providers.

In addition to considering the issuer's backup bank facilities for assessing the amount of daily liquidity, we consider them qualitatively. For example, the composition of an issuer's lenders provides insights into its risk management; an issuer that chooses a group of relationship banks rated P-1 typically demonstrates awareness to the quality of its liquidity. However, backup facilities from P-2 rated banks (which are excluded from the above calculation of liquidity sufficiency) may provide some benefit. The terms and conditions of an issuer's backup facilities, including the termination events and conditions precedent to funding, provide insights into the overall relationship with lenders and the self-liquidity issuer's negotiating position and treasury management sophistication.

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

EXHIBIT 5
Liquidity Sufficiency and Composition Assessment

Classification	Attributes
Strong	
	Daily coverage ratio of at least 2x.
	Well-diversified and high-quality daily liquidity portfolio.
	All backup bank facilities are from P-1-rated banks, with limited automatic termination events or conditions required for funding.
Medium	
	Daily coverage ratio of at least 1.25x.
	Well-diversified and high-quality daily liquidity portfolio.
	All backup banks facilities are from P-1-rated banks, with limited automatic termination events or conditions required for funding.
Limited	
	Daily coverage ratio of at least 1x.
	Limited diversification of daily liquidity portfolio.
	Most backup bank facilities are from P-1-rated banks but some are from P-2-rated banks, with limited automatic termination events or conditions required for funding.
Weak	
	Daily coverage ratio of less than 1x.
	Undiversified daily liquidity portfolio.
	Backup bank facilities contain many automatic termination events or are predominantly from banks rated P-2 or below.

Source: Moody's Investors Service

In each case, the classification reflects a preponderance of the attributes at a particular assessment level. We may assess the daily coverage ratio under various stress scenarios. We also may incorporate additional liquidity outside of daily liquidity that could supplement daily coverage. These additional considerations are described in the "Other Considerations" section.

Self-liquidity Approach: Indicated Outcome before Other Considerations

Based on our assessments of the Debt and Treasury Management Strength and Liquidity Sufficiency and Composition sub-factors, we may apply up to three downward notches to the highest potential short-term rating, using the matrix in Exhibit 6. The result of this analysis is the indicated outcome before other considerations.

For example, if an issuer has adequate notification procedures; a long-term rating of Baa1, which maps to a short-term rating of P-2/VMIG 2; its debt and treasury management strength is assessed as medium; and its liquidity sufficiency and composition is assessed as medium, the indicated outcome would typically be one notch lower, i.e., a P-3/VMIG 3.

EXHIBIT 6

Typical Notching for Debt and Treasury Management Strength and Liquidity Sufficiency and Composition

Liquidity Sufficiency & Composition	Debt and Treasury Management Strength			
	Strong	Medium	Limited	Weak
Strong	0	0	-2	SG/NP
Medium	0	-1	-2	SG/NP
Limited	-1	-2	SG/NP	SG/NP
Weak	SG/NP	SG/NP	SG/NP	SG/NP

Source: Moody's Investors Service

Market Access/Cash Flow Approach: Primary Factor

We use the market access/cash flow approach to assess transactions whose repayment largely depends on an issuer's access to the capital or credit markets or on its cash flow, with only secondary reliance on its available liquid resources. The market access/cash flow approach comprises one factor, which is used to map the long-term credit quality of the issuer to a short-term equivalent, which is the indicated outcome before other considerations. Other considerations are described below.[11]

EXHIBIT 7

Market Access/Cash Flow Approach: Factors

Factor
Long-term Credit Quality
Short-term Equivalent/Indicated Outcome before Other Considerations

Source: Moody's Investors Service

Factor: Long-term Credit Quality

Why It Matters

Common characteristics drive long-term and short-term credit risk. An issuer's long-term credit quality provides important indications of its financial and debt management and liquidity. Long-term credit quality is a core concern for fixed income investors and a primary determinant of an issuer's ability to generate reliable cash flow and to access the capital and credit markets.

[11] Please see the "Other Considerations" section.

How We Assess It

An issuer's highest potential short-term rating is mapped from the long-term rating of the issuer or the rating of the expected takeout financing (see Exhibit 2).[12] In assigning the issuer's long-term rating or evaluating the expected rating of the takeout financing, we use the relevant sector methodology.[13]

USDA Financing Approach: Primary Factors

For transactions whose repayment relies on a commitment from the US government to provide take-out financing through the US Department of Agriculture (USDA) Rural Development Office, we use the USDA financing approach.

This approach comprises two factors. The Long-term Credit Quality of the US Government factor is used to arrive at an issuer's highest potential short-term rating. We may then apply downward notching,[14] based on the Project and Borrower Risk factor, which has two sub-factors. The result of this analysis is the indicated outcome before other considerations.[15]

EXHIBIT 8

USDA Financing Approach: Factors and Sub-factors

Factor	Sub-factor
Long-term Credit Quality of the US Government	--*
Highest Potential Short-term Equivalent	
Project and Borrower Risk	Project Risk
	Borrower Risk
Indicated Outcome before Other Considerations	

*This factor has no sub-factors.

Source: Moody's Investors Service

Factor: Long-term Credit Quality of the US Government

Why It Matters

The long-term credit quality of the US government is very important to the credit quality of these financings, which are typically in the form of notes, because they are secured by a commitment from the US federal government, through the USDA, to provide take-out financing for the notes upon substantial completion of the project.

How We Assess It

A USDA note's highest potential short-term rating is mapped from the long-term issuer rating of the US government, using the mapping shown in Exhibit 2 above.

12 The reference rating typically used for this mapping is the issuer rating, general obligation rating or senior unsecured revenue debt rating (or anticipated rating of the takeout financing) for state and municipal issuers and the issuer rating or senior unsecured revenue debt rating for nonprofit issuers. Where there is no published long-term rating, an assessment of long-term credit characteristics is considered in the determination of the short-term rating.

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

14 In this context, notching is along the short-term rating scale. For example, one downward notch from MIG-1 is MIG-2.

15 Please see the "Other Considerations" section.

Factor: Project and Borrower Risk

Why It Matters

Project and borrower risk are important because the USDA's commitment to provide financing is contingent upon the completion of the project within a certain timeframe, as well as the borrower's ability to manage the project and to remain solvent until substantial completion is achieved and the take-out financing closes.

How We Assess It

PROJECT RISK:

Scoring for this qualitative sub-factor is based on our assessment of the likelihood that the project will be fully completed in a timely manner to meet the USDA's requirements for financing. We classify the likelihood of timely project completion into four categories: strong, medium, limited or weak. Scoring is based on a preponderance of attributes for each classification level (see Exhibit 9).

EXHIBIT 9
Project Assessment

Classification	Typical Attributes
Strong	
	Length of project from date of debt issuance is less than one year or project is already complete
	Significant cushion (e.g., nine months or more) between expected project completion and note maturity
	Simple project involving routine construction
	Any additional funding sources needed for project completion have already been used or deposited at closing
Medium	
	Length of project is less than two years
	Moderate cushion (e.g., six months or more) between expected project completion and note maturity
	Simple construction project, e.g., interior refurbishment or addition to existing facility
	Most additional funding sources needed for project completion are deposited at closing
Limited	
	Length of project is less than three years
	Limited cushion (e.g., at least three months) between expected project completion and note maturity
	Complex construction project, e.g., construction of a new facility
	Risk that additional funding sources needed for project completion may be unavailable
Weak	
	Length of project is three years or more
	Very narrow cushion (e.g., less than three months) between expected project completion and note maturity
	Very complex construction project, e.g., construction of a large new facility, may include required clearing of land or excavation, potential environmental issues or challenges to accessing area
	Significant risk that additional funding sources needed for project completion may be unavailable

Source: Moody's Investors Service

BORROWER RISK:

Scoring for this qualitative sub-factor is based on our assessment of the borrower's commitment to the project as well as its ability to manage the project and its own financial operations. We classify the borrower's commitment and ability into four categories: strong, medium, limited or weak. Scoring is based on a preponderance of attributes for each classification level (see Exhibit 10).

EXHIBIT 10
Borrower Assessment

Classification	Typical Attributes
Strong	
	Strong operating performance; consistently balances budget or regularly produces operating surplus
	Ample liquidity for operating needs and project overruns
	A strong history of completing similar projects on time
	Project serves an essential public purpose
	Project size is small relative to revenue base
Medium	
	Moderate operating performance; generally balances budget or produces operating surplus
	Adequate liquidity for operating needs and project overruns
	Some experience of completing similar projects on time
	A substantial portion of the project serves an essential public purpose
	Project size is moderate relative to revenue base
Limited	
	Inconsistent operating performance; high variability of operating surplus and history of unbalanced budget
	Limited liquidity for operating needs and project overruns
	Limited history of completing similar projects on time
	Project has essentiality for a narrow portion of the public
	Project size is large relative to revenue base
Weak	
	Weak operating performance; history of unbalanced budget and operating losses
	Inadequate liquidity for operating needs and project overruns
	No prior history of completing similar projects on time
	Project does not serve an apparent essential public purpose
	Project size exceeds revenue base

Source: Moody's Investors Service

Based on our assessments of the Project Risk and Borrower Risk sub-factors, we may apply up to three downward notches to the highest potential short-term rating, using the matrix in Exhibit 11. The result is the indicated outcome before other considerations.[16]

For example, if the US government's long-term rating is Aaa (which maps to a short-term rating of MIG 1), scoring for project risk is assessed as medium and scoring for borrower risk is assessed as medium, the indicated outcome would typically be two notches lower, i.e., MIG 3.

[16] Please see the "Other Considerations" section.

EXHIBIT 11
Typical Notching for Project Risk and Borrower Risk

Project Risk	Borrower Risk: Strong	Medium	Limited	Weak
Strong	0	-1	-2	SG/NP
Medium	-1	-2	-2	SG/NP
Limited	-2	-2	SG/NP	SG/NP
Weak	SG/NP	SG/NP	SG/NP	SG/NP

Source: Moody's Investors Service

Other Considerations

Ratings may include additional factors, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. Such factors include financial controls and the quality of financial reporting; the quality and experience of management; assessments of governance as well as environmental and social considerations; and possible government interference from other levels of government. Regulatory, litigation, liquidity, technology and reputational risk as well as changes in demographic and macroeconomic trends also affect ratings. We may also incorporate non-public information.

Following are some examples of additional considerations that may be reflected in our ratings.

Difficulty Accessing the Capital or Credit Markets

Difficulty accessing the capital or credit markets is an indicator of refinancing risk. Investment-grade US public sector and nonprofit entities have typically had strong, reliable access to the capital markets for financing note take-outs and mandatory tenders, even during times of market uncertainty. Some issuers, however, may experience delays in attracting market interest in their bond or note sales or incur interest costs that are considerably higher than those of issuers with similar credit quality, indications of heightened refinancing risk. Where an issuer either has, or is expected to have, difficulty accessing the capital or credit markets, the short-term rating may be lower than the indicated outcome.

Limitations on the Issuer's Ability to Issue Take-out Financing

Limitations on the ability to issue a take-out financing can hamper an issuer's ability to repay short-term debt. For example, in cases where the short-term notes have been authorized but the issuer must obtain a separate authorization to issue the take-out financing, the pre-requisites are a potential impediment to refinancing the notes. These limitations may include required third-party approval to issue new debt, tax levy limits and debt limits. As another example, revenue bond issuers may be subject to a rate covenant or to an additional bonds test that limits the issuance of take-out bonds if projected net revenue does not provide debt service coverage to a prescribed level.

Where we consider that legal or structural limitations will materially affect the issuer's ability or authority to issue take-out financing, the short-term rating may be lower than the indicated outcome. Examples included cases where (i) take-out financing for short-term debt requires additional third-party approval, unless the likelihood of timely approval is extremely high, (ii) the take-out financing, in combination with any planned additional parity debt, exceeds the issuer's debt limit, or (iii) additional revenue growth or cost reduction is required in order to meet a rate covenant or additional bonds test, including on a prospective basis when take-out debt is included in the calculation.

Absence of a Meaningful Pledge or Other Structural Weakness

A lack of an explicit general obligation pledge or meaningful revenue pledge for a take-out financing or other structural weakness may result in reduced investor interest and limit an issuer's market access. Where we consider that the assessment of the long-term rating of the take-out financing does not fully capture the market access risk, for example in a period of market dislocation, the short-term rating may be lower than the indicated outcome. Similarly, we may consider a cash flow note that is restricted to a limited repayment source to have a structural weakness.

Management Strategy, Operating Model and Business Lines

The quality of management is an important factor supporting an issuer's credit strength. Assessing the execution of operating and business plans over time can be helpful in assessing management's strategies, policies and philosophies and in evaluating management performance relative to peers. A record of consistency provides insight into management's likely future performance in stressed situations and can be an indicator of management's tendency to depart significantly from its stated plans and guidelines.

The stability or volatility of an issuer's operating model and business lines is important because it can greatly affect an issuer's liquidity and its ability to access the capital or credit markets for take-out financing. We typically assess the issuer's operating history for signs of volatility in past years, as well as projected cash flows which inform our expectations for future volatility. A volatile operating or business model can cause an issuer's short-term rating to be lower than the preliminary short-term indicated outcome.

Sensitivity to Liquidity Stress

Our assessment of the Liquidity Sufficiency and Composition sub-factor of the self-liquidity approach incorporates an expectation of unimpeded access to daily liquidity from investment holdings and backup bank facilities. However, an issuer's liquid investments and backup bank lines may be subject to market risk that could impair its ability to rapidly access liquidity in the event of a failed remarketing or CP rollover. Holdings in money market funds represent shares that have no required redemption schedule, and these funds maintain only a portion of their assets in overnight investments. While investors expect access to their money-market holdings on demand, funds may impose redemption

gates under certain circumstances, so the risk of payment interruption or delay is typically higher for these investments than for short-term debt obligations. Apart from a systemic market-wide event, the extent of redemption risk is typically mitigated if the municipal borrower holds a more diversified portfolio of money market funds.

For transactions whose repayment largely depends on an issuer's available liquid resources for repayment, we typically assess the issuer's access to its investments under different stress scenarios, by recalculating the daily coverage ratio: (i) excluding the benefit of backup bank facilities in the numerator; (ii) excluding the largest investment in money market funds with a single sponsor; and (iii) excluding backup bank facilities and the largest money market investment. In cases where we assess a self-liquidity issuer's debt and treasury management as limited or weak, we typically also consider a scenario that includes the full amount of an issuer's CP program, even when there are specific weekly limits to the amount of maturing CP. If any of these stressed coverage ratios falls below 1x, the issuer's short-term rating may be one or more notches below the indicated outcome. We typically also consider the number of scenarios under which coverage falls below 1x and the severity of any shortfall.

This consideration may also be important for issuers primarily assessed under the market access/cash flow or USDA financing approaches in cases where balance sheet liquidity is important to the ability of these issuers to meet their near-term obligations.

Sources and Uses of Liquidity

Liquidity is important to all issuers rated using this methodology. We assess an issuer's sources of liquidity (or, for issuers where we use the self-liquidity approach, additional sources beyond daily liquidity[17]) and uses of liquidity by considering all liquid assets, as well as the potential for ongoing operating surpluses or deficits, and compare them with potential draws on that liquidity in the near and medium term.

An issuer may face competing calls on liquidity from a variety of obligations, such as swap collateral postings or termination payments, pension payments, or large capital projects; or it may need liquidity due to operating deficits. A holistic assessment of liquidity, in conjunction with potential for calls on that liquidity, is important because these ongoing sources and uses can greatly affect an issuer's ability to maintain sufficient liquidity to meet its debt obligations.

For a description of general principles related to assessing liquidity, please see our liquidity cross-sector methodology.[18]

Market Conditions

For issuers where we use the self-liquidity approach, we may revise the discounts we use for certain asset classes in cases where market conditions do not provide the usual level and depth of liquidity as they typically have.

Dramatic changes in market conditions may affect all issuers' ability to access liquid investments and may affect their short-term ratings.

---

[17] An issuer analyzed using the self-liquidity approach may have available liquidity from sources other than daily liquidity, such as from fixed income investments and other securities that could be liquidated relatively quickly, but not necessarily within a day.

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

Regulatory and Tax Considerations

Issuers in this sector are subject to varying degrees of regulatory oversight. Effects of these regulations may entail changes in the costs of holding certain types of liquidity, changes in the markets for backup bank facilities, changes in the requirements or costs to complete a project, or other aspects related to an issuer's sources and uses of liquidity. Regional differences in regulation, implementation or enforcement may advantage or disadvantage particular issuers. Changes in regulations, tax law or tax enforcement, particularly if sudden, could have a material impact on the ability of issuers to access credit markets and could change our overall assessment of the credit and structural risk for affected transactions.

Our view of future regulations plays an important role in our confidence level in the ability of an issuer to generate sufficient cash flows relative to its debt burden and its ability to maintain adequate liquidity over the medium and longer term. In some circumstances, regulatory changes or regulatory uncertainty may affect ratings.

Environmental, Social and Governance Considerations

Environmental, social and governance (ESG) considerations may affect the ratings of issuers in this sector. In cases where the take-out financing for a BAN is project-related, the ESG considerations for the project may be somewhat different from those pertaining more generally to the issuer. For information about our approach to assessing ESG issues, please see our methodology that describes our general principles for assessing these risks.[19]

Financial Controls

We rely on the accuracy of audited financial statements to assign and monitor ratings in this sector. The quality of financial statements may be influenced by internal controls, including the proper tone at the top, centralized operations, and consistency in accounting policies and procedures. Auditors' reports on the effectiveness of internal controls, auditors' comments in financial reports and unusual restatements of financial statements or delays in regulatory filings may indicate weaknesses in internal controls.

Event Risk

We also recognize the possibility that an unexpected event could cause a sudden and sharp decline in an issuer's fundamental creditworthiness or its access to credit markets, which may cause actual ratings to be lower than the indicated outcome. Event risks — which are varied and can include sudden regulatory changes, pandemics, liabilities from an accident or cybercrime events — can overwhelm even a stable issuer.

Assigning Short-term Ratings

After considering the rating factors, other considerations and relevant cross-sector methodologies, we typically assign a short-term rating to the issuer or to specific instruments.

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

Key Rating Assumptions

For information about key rating assumptions that apply to methodologies generally, please see *Rating Symbols and Definitions*.[20]

Limitations

In the preceding sections, we have discussed the factors, many of the other rating considerations that may be important in assigning ratings, and certain key assumptions. In this section, we discuss limitations that pertain to the overall rating methodology.

General Limitations of the Methodology

This methodology document does not include an exhaustive description of all factors that we may consider in assigning ratings in this sector. Transactions in the sector may face new risks or new combinations of risks, and new strategies or structural features may be developed to mitigate risk. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

Ratings reflect our expectations for the future performance of an issuer or transaction; however, as the forward horizon lengthens, uncertainty increases and the utility of precise estimates, as factor inputs or in other considerations, typically diminishes. Our forward-looking opinions are based on assumptions that may prove, in hindsight, to have been incorrect. Reasons for this could include unanticipated changes in any of the following: the macroeconomic environment, general financial market conditions, industry competition, disruptive technology, or regulatory and legal actions. In any case, predicting the future is subject to substantial uncertainty.

[20] A link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

Appendix A: Certain Defined Terms and Structures

Variable-Rate Demand Obligations in Daily Mode

For VRDOs in a daily mode, issuers have a very limited amount of time, usually only two hours, between the notification of a failed remarketing of the debt and the deadline for transferring funds to the trustee for payment of debt.

Variable-Rate Demand Obligations in Weekly Mode

VRDOs in a weekly mode are structured to provide seven days' advance notice of a tender, but most issuers rely primarily on remarketing rather than on pre-emptively liquidating assets in advance of the tender. In addition, the outcome of the remarketing process is typically not known until the day of the tender, effectively creating a daily obligation.

Commercial Paper and Variable-Rate Demand Obligations in Commercial Paper Mode

Traditional municipal CP and VRDOs in CP mode (or the equivalent) are similar. VRDOs in CP mode are issued in the full authorized amount and are fully outstanding from the date of issuance; however, the amount that can be rolled within any week or longer period varies depending on market conditions and limitations placed by the borrower on the remarketing agent and issuing and paying agent.

Traditional CP programs are established with an authorized amount (which is the maximum the borrower can place) but may have less CP outstanding or expected to be outstanding than the authorized amount. The amount that can mature within any week or longer period can vary.

Extendable Commercial Paper (CP)

Extendable CP typically has an initial maturity date ranging from 1 to 90 days. Rollover proceeds from new investors are the only source of payment on the initial maturity; the issuer is not obligated to pay principal and interest on the initial maturity date. If there is a successful rollover, a new initial rollover date is set, ranging from 1 to 90 days from the prior rollover date. If there is a failed rollover on the initial maturity date, the maturity date automatically extends a certain number of days from the initial issuance date (usually 270 days); this becomes the extended maturity date. The issuer is obligated to pay principal and interest on the extended maturity date. The short-term rating reflects our opinion of the issuer's ability to pay on the extended maturity date and does not reflect whether investors will be paid on the initial maturity date.

Windows Mode

A windows mode is an interest-rate mode available under some transaction structures for long-term multi-modal variable-rate bonds. Bonds that are in the windows mode bear interest at an indexed variable rate that resets on a regular basis. Bondholders may optionally tender their bonds in the windows mode on any business day; this triggers a remarketing period, typically 30 days. If there is a successful remarketing, the remarketing agent may set a purchase date for the tendered bonds, typically the 30th day following the receipt of the tender notice, or an earlier date with notice to the tendering bondholder(s). The optional tenders are paid only with remarketing proceeds and are not a payment obligation of the issuer. In the event the remarketing agent is unable to remarket any of the bonds following an optional tender notice, all the bonds are subject to mandatory tender on a specified date that is usually up to 13 months after the date of the optional tender notice, although mandatory tenders of up to three years are eligible for a short-term rating. The mandatory tender is a payment obligation of the issuer. In these cases, the short-term rating reflects our opinion of the likelihood of payment on the mandatory tender date and not the payment on the earlier optional

tender date. When assigning a short-term rating to bonds in windows mode, we use the prime rating scale (e.g., P-1).

USDA Rural Development Notes

The USDA Rural Development program supports a variety of public projects in rural areas through the use of grants, loans and guaranteed loans. Projects supported by the program include water and sewer infrastructure and construction for healthcare, higher education or nonprofit institutions. We rate short-term notes supported by USDA commitment letters, which obligate the USDA to provide funds for the principal portion of the notes at maturity subject to substantial completion of the project. Interest on the notes is paid out of note proceeds deposited with the trustee at closing. These notes are typically issued by small, unrated and infrequent borrowers, including water and sewer systems, colleges, nursing homes and hospitals. To qualify for the USDA program, a project must meet a series of criteria, one of which is to determine that the project is essential in some way to the community it will serve. The USDA program also sometimes funds projects through grants and direct loans.

Moody's Related Publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of sector and cross-sector credit rating methodologies can be found here.

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

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

» contacts continued from page 1

Analyst Contacts:

SAN FRANCISCO +1.415.274.1700

Eric Hoffmann +1.415.274.1702
Senior Vice President/Manager
eric.hoffmann@moodys.com

Report Number: 1210749

Authors
Geordie Thompson

Senior Production Associate
David Dombrovskis

© 2020 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/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE 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. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER 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. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS 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, ASSESSMENTS, OTHER OPINIONS, AND 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, ASSESSMENTS, OTHER OPINIONS OR 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.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND 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 its 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 CREDIT RATING, ASSESSMENT, 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 credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from $1,000 to approximately $2,700,000. MCO and Moody's investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service 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 or indirectly 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.

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 credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

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

MOODY'S
INVESTORS SERVICE