

RATING METHODOLOGY Tender Option Bonds and Related Instruments

This rating methodology replaces *Moody's Rating Methodology For Tender Option Bond Programs* published in October 2012. This updated document provides more detail about the rating considerations that are usually most important for issuers in this sector, in particular with regard to our analysis of transaction structures and analytical considerations for floating-rate and residual certificates.

Table of Contents:

INTRODUCTION	1
SCOPE OF THIS METHODOLOGY	2
ABOUT THIS RATING METHODOLOGY	4
THE CREDIT QUALITY OF THE UNDERLYING MUNICIPAL SECURITIES DEPOSITED IN THE TRUST	4
THE STRUCTURAL FEATURES OF THE TRANSACTION	5
THE CREDIT QUALITY OF THE LIQUIDITY PROVIDER AND THE STRUCTURE AND LEGAL PROVISIONS OF THE LIQUIDITY FACILITY	9
LIMITATIONS, ASSUMPTIONS AND OTHER RATING CONSIDERATIONS	13
APPENDIX A: RATING CUSTODY RECEIPTS DEPOSITED INTO TOBS	15
APPENDIX B: USING POOLS OF MUNICIPAL BONDS IN TOB PROGRAMS	19
MULTIPLE INTEREST RATES	19
MOODY'S RELATED PUBLICATIONS	22

Analyst Contacts:

NEW YORK	+1.212.553.1653
Joann Hempel	+1.212.553.4743
Vice President - Senior Credit Officer	
joann.hempel@moodys.com	
Michael Loughlin	+1.212.553.4066
Vice President - Senior Analyst	
michael.loughlin@moodys.com	

Introduction

This rating methodology explains our approach to assessing credit risk for US municipal finance tender option bonds (TOBs) and custody receipts. In TOB programs, floating-rate certificates issued by a trust are typically assigned long-term ratings, reflecting the deposited bond's long-term credit risk, and short-term variable municipal investment-grade (VMIG) ratings, reflecting the likelihood of timely payment if the floating-rate certificate is subject to optional or mandatory tender.

This document provides general guidance intended to help the reader understand how qualitative and quantitative risk characteristics are likely to affect rating outcomes for TOBs, including our approach to assessing the transaction structure to determine whether the TOB is eligible for a rating based on the approach described in this methodology.

This document does not include an exhaustive treatment of all factors that we may consider in assigning ratings in this sector. However, this methodology should enable the reader to understand the considerations that are usually most important for ratings in this sector.

Our approach focuses primarily on the credit quality of the underlying municipal securities deposited in the trust, the credit quality of the liquidity provider, the structure and legal provisions of the liquidity facility, and the sufficiency of structural features in the transaction, including relevant opinions of counsel. This methodology includes a summary of the principal transaction risks that we consider and some examples of how they have been addressed structurally. While TOBs have typically been structured in a relatively similar pattern in recent years, a transaction could include different structural features or a combination of features that could affect its ratability under this methodology.

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

THIS RATING METHODOLOGY WAS UPDATED ON AUGUST 29, 2019. WE HAVE MADE A MINOR EDITORIAL CLARIFICATION IN EXHIBIT 2 ON PAGE 12. WE HAVE ALSO MADE SOME FORMATTING CHANGES.

This methodology describes the analytical framework used in determining credit ratings in this sector. In some instances, our analysis is also guided by additional methodologies that describe our approach for analytical considerations that are not specific to any single sector. Examples of such considerations include the following: the relative ranking of different classes of debt and hybrid securities, how sovereign credit quality affects non-sovereign issuers, and the assessment of credit support from other entities. A link to documents that describe our approach to such cross-sector methodological considerations can be found in the "Moody's Related Publications" section of this report.

Highlights of this report include:

- » The scope of this methodology
- » A summary of the rating methodology
- » A description of factors that drive credit quality and ratings
- » Comments on the rating methodology assumptions and limitations

Scope of This Methodology

TOB programs are commonly used as a funding or leveraging vehicle for US municipal bonds while satisfying demand for short-term municipal investments eligible for purchase by US money-market funds. Within a TOB program, underlying bonds (typically long-term instruments) are deposited into a trust that issues floating-rate certificates (floaters) and residual certificates (residuals), each of which evidences ownership of a portion of the interest and principal on the underlying bonds (see Exhibit 1).

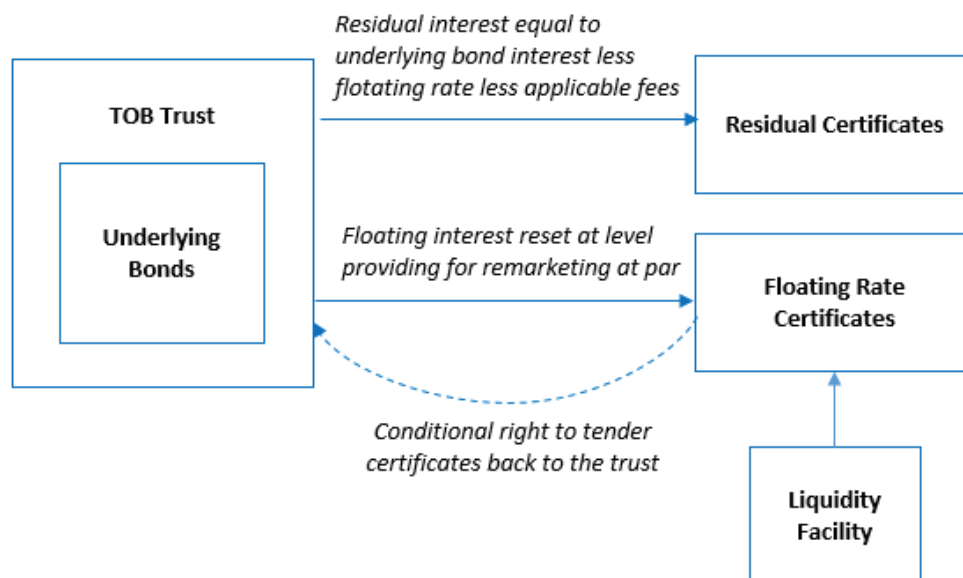
In most TOB structures, fixed-rate single bonds or pools of municipal bonds¹ are deposited into a trust. Other types of assets, however, have been deposited, including floating-rate bonds, fixed-rate notes, and municipal leases and loans. Fixed-rate custody receipts are also frequently deposited into TOB trusts. For more information on our approach to rating custody receipts, see Appendix A. For a discussion of issues specific to pooled transactions, see Appendix B.

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 The deposited bonds may be tax-exempt or taxable.

EXHIBIT 1

Typical TOB Trust



Source: Moody's Investors Service

The floaters are entitled to a variable market rate of interest, capped at the bond rate, adjusted for fees payable from interest on the underlying assets. The residuals are promised interest based on what remains after payment of any applicable fees and interest on the floaters.

Floaters generally mirror standard variable-rate demand obligations found in the primary market and typically contain provisions for holders to tender their floaters to the trustee for a purchase price of par plus accrued interest. A liquidity facility is available to holders of the floaters to provide the full and timely payment of the purchase price following any optional or mandatory tender.

Typically, trusts created to issue floaters have been classified as business or common law trusts under state law and as partnerships for tax purposes. Based on our understanding, the purpose of classifying the trust as a partnership for tax law purposes, similar to a grantor trust, is that it may permit the pass-through of tax-exempt income to eligible investors when the assets deposited in the trust are tax-exempt. The partnership structure also provides the ability to stratify income by issuing two classes of receipts: floaters and residuals.

TOBs are not generally over-collateralized, so meaningful excess funds are not generally available to pay debt service. As described more fully below in "The Structural Features of the Transaction" section, structural features that have typically been included in TOB transactions help to substantially mitigate risks that are not related to the credit quality of the deposited bonds, the credit quality of the liquidity provider and the structure of the liquidity facility. In this methodology, we describe certain structural features that qualify a transaction to be rated under this methodology. A transaction could include different structural features or a combination of features, and we review the structure and assess its ratableity under this methodology. Structural weaknesses can add risks that may not be addressed by the rating factors in this methodology and may introduce risk scenarios that are difficult to predict. For example, certain structural weaknesses may introduce a risk that market rates of interest could have a significant impact on default risk. Another example of structural weakness would be insufficient

restrictions on the investor base. We do not have information about the actual investor base, changes to which could cause additional regulatory requirements and costs that would likely render cash flows inadequate to meet debt service payments.²

About This Rating Methodology

The credit quality of TOB floating-rate certificates primarily relies on:

- » The credit quality of the underlying municipal securities deposited in the trust
- » The structural features of the transaction
- » The credit quality of the liquidity provider, and the structure and legal provisions of the liquidity facility

We assign long-term and short-term ratings to TOB floaters, and we assign long-term ratings to TOB residuals that are *pari passu* to the floaters.

Floaters: When TOBs have sufficiently protective structures, the ratings of floaters primarily reflect the credit quality of the assets held in the trust and the credit quality of the liquidity support provider. If those features are adequate, the long-term rating of the TOB floaters may be as high as that of the lowest-rated underlying asset in the trust. The credit quality of the liquidity provider and our analysis of the structure and legal provisions of the liquidity facility are fundamental to the short-term ratings we assign to TOB floaters.

Residuals: In cases where a proportionate share of the principal of the underlying asset is allocated to residuals in the event of a distribution following either a tender option termination event (TOTE) or a mandatory tender, we typically assign the same long-term rating to the residuals that we have assigned to the floaters. We do not assign short-term ratings to residuals because residuals are not subject to tender and are not supported by a liquidity facility.

The Credit Quality of the Underlying Municipal Securities Deposited in the Trust

Provided that the TOB has sufficiently protective transaction and liquidity structures and sufficient quality of the liquidity provider, the long-term rating is primarily based on our assessment of the credit quality of the assets held in the trust, as reflected in our ratings of those assets. Most transactions we have rated have been single-asset trusts. For a description of our approach to rating TOBs based on a pool of assets, please see Appendix B.

Events that would precipitate the immediate termination of the tender option right are directly related to the credit quality or tax status of the deposited assets. Accordingly, the likelihood of any such TOTE occurring (other than an event affecting the tax status) is reflected in, and can be monitored through, the long-term rating(s) of the deposited asset(s) and thus the long-term rating assigned to the floaters.

² Please see "The 1933 and 1940 Acts" section of this document.

In assigning a short-term rating to a TOB,³ we assess the risk associated with the ability of an investor to receive purchase price upon demand upon any optional or mandatory tender, which includes our assessment of the likelihood of the premature termination of the liquidity facility due to the occurrence of a TOTE.

The Structural Features of the Transaction

In our analysis of TOB transaction structures, we typically assess credit risks (including bankruptcy risk), certain other payment interruption risks, and certain cash sufficiency and timing risks.

In this section, we describe the potential structural risks as well as the structural features that are present, in order for us to be able to assess the credit quality of the transaction based primarily on the quality of the assets deposited in the trust, the credit quality of the liquidity provider, and the structure and quality of liquidity. We also describe the opinions of counsel generally provided that we review in conjunction with our assessment of structural features.

Credit and Bankruptcy Risks

In the event of bankruptcy of the entity that deposited assets into a TOB trust, a bankruptcy court could rule that assets held in the TOB trust are part of the estate of the depositor. Similarly, if the trustee were to become insolvent, a bankruptcy judge could consider the assets held in the trust to be assets of the trustee.

Typically, the risk of consolidation of the trust into the depositor's estate in bankruptcy is addressed by the inclusion of representations and warranties by the depositor that the assets were and are free and clear of any lien, pledge, encumbrance or other security interest both before and after any transfer, including any continuing claim by the depositor.

With respect to risk that the trustee's insolvency could affect the assets in a TOB trust, typical structures also include a stipulation that assets will be held in the trustee's trust department separate and apart from the bank's general assets and separate from other assets held in trust for other transactions and that the trustee does not have the authority to assign, transfer, encumber, pledge, set off, or otherwise transfer or dispose of the assets, except as specifically authorized by the terms of the trust.

Other Payment Interruption Risks

The preservation of cash flow generated by the deposited assets is a fundamental aspect of our credit assessment. Certificates issued by a trust are only entitled to payment from the cash flow generated by the deposited assets; therefore, it is important that the transaction structure minimize risk of cash flow interruption.

Other than the underlying credit risk of the deposited bonds and issues with the liquidity support arrangements, we have identified four key risks that could impede the cash flow of the deposited assets:

³ TOBs are a form of variable rate demand obligation. For more information on demand obligation ratings, see Moody's *Rating Symbols and Definitions* under the Moody's Related Publications section.

- » Failure to comply with the Securities Act of 1933, as amended
- » Failure to comply with the Investment Company Act of 1940, as amended
- » Exposure to federal, state, local or entity-level taxes that could impede cash flow
- » Enforceability of certain obligations

In our assessment of TOB transaction structures, we generally review the opinions of counsel that pertain to these risks.

The 1933 and 1940 Acts

We typically consider risks associated with the failure to comply with the Securities Act of 1933, as amended, and the Investment Company Act of 1940, as amended. The failure by transaction participants to comply with provisions or exemptions of these acts could result in monetary penalties and thus impede the cash flow of the deposited assets.

We review the structure of the transactions and the legal opinions provided by counsel to assess whether the initial sales of each series of TOB receipts are exempt from registration under the 1933 and 1940 Acts. We typically consider that future transfers will not require registration under the 1933 Act based on provisions in the documents requiring that transfers, if any, be made to "accredited investors" or "qualified institutional buyers." We typically consider that future transfers of receipts will not require registration under the 1940 Act based on provisions in the documents requiring that any future transfers be made to "qualified purchasers," or on provisions requiring that resale will not cause the number of beneficial owners to exceed 100.

Some Relevant Aspects of the 1933 and 1940 Acts

The 1933 Act contains provisions to protect investors from fraudulent or misleading information concerning publicly offered securities by requiring securities to be registered with the US Securities and Exchange Commission (SEC). It provides for the specific exemption of certain securities from registration. TOB floaters and residuals are typically offered and sold using the private placement exemption available under the 1933 Act, which requires that the initial purchasers of privately placed securities as well as subsequent purchasers of these securities qualify as either "accredited investors" or "qualified institutional buyers" as those terms are defined in the 1933 Act.

The 1940 Act contains provisions to protect investors from the potential abuses associated with pooled investments by requiring issuers classified as "investment companies" to be registered with the SEC. The 1940 Act provides that certain types of companies may be exempt from registration under Section 3(c)(1) or Section 3(c)(7). Section 3(c)(1) excludes from the definition of investment company any issuer whose security is owned by no more than 100 beneficial owners who do not propose to make a public offering of the security. Section 3(c)(7) and Rule 3a-7 of the 1940 Act exclude from the definition of investment company any issuer whose purchasers will be "qualified purchasers," as defined in Section 2(a)(51) of the 1940 Act.

Exposure to Federal, State, Local or Entity-Level Taxes That Could Impede Cash Flow

The exposure of the trust to possible taxation on any level could also hinder the cash flow. Based on our understanding, the classification of the trust as a partnership under tax law enables the trust to pass through the income from the underlying assets to the receipt holders. If the trust were deemed to be a corporation rather than a partnership for tax purposes, the cash received from the underlying assets would likely be deemed to be revenue and therefore could be subject to applicable federal, state or local taxes. We review the structure of the transaction and the opinions provided by counsel to assess whether the trust is subject to tax on the income it receives or whether it will be treated as a partnership for tax purposes and therefore not subject to any federal, state, local or other entity-level taxes.

It is important to note that these tax issues apply to the tax status of the partnership, which could impact whether cash flow passes through unimpeded to floaters and residuals. The tax status of the deposited asset is not a key driver of our ratings of the floaters, and our analysis and ratings do not address the tax treatment of the interest income received by the holders of the floaters.

Enforceability of Certain Obligations

In our review of each TOB transaction, we consider the enforceability of the obligations of the liquidity facility provider to the transaction. We review the structure of the transactions and the opinions provided by counsel to assess whether the liquidity facility is a legally valid and binding obligation of the provider that is enforceable on its terms.

Cash Sufficiency and Timing Risks

Our review of each TOB transaction typically considers structural features that are important because, if not properly addressed, they could result in cash flow shortfalls, asset shortfalls and illiquid floaters. These features include:

- » the maximum interest rate that is promised to the floaters
- » the investment of cash flow
- » the issuance of floaters in excess of the par amount of the deposited bonds

Maximum Interest Rate Promised to the Floaters

The interest generated by deposited assets is a finite amount; therefore, the interest amount promised to floaters must be less than or equal to the interest generated by the assets (less any amounts needed to pay fees). Structurally, this is typically addressed in the definition of the maximum interest-rate calculation for the floaters. Typically, the maximum rate is defined such that interest generated by the deposited assets will always be sufficient to pay accrued interest on the floaters less any applicable fees, and after giving effect to the impact of non-accrual days and odd-lot amounts.

Fees

Parties providing important services over the life of a TOB trust can include the trustee, remarketing agent, liquidity provider and administrative agent, each of which is entitled to payment for services provided.

If a TOB structure dictates that any or all of these fees are to be paid by the trust, in order for sufficient funds to be available to make the fee payments and the interest payments due on floaters, the maximum interest rate set for the floaters must be adjusted downward to account for the payment of

these fees through the life of the transaction. If a trust structure provides for payment of any or all fees outside the trust or if the payment of fees is subordinated to the payment of floaters and these payments are ultimately not obligations of the trust, then these fees likely do not need to be accounted for in the calculation of the maximum rate.

Non-Accrual Days

Most TOB structures are created when fixed-rate municipal assets are deposited into a trust. Assets deposited into TOB trusts often accrue interest on the basis of twelve 30-day months for a 360-day year. Floaters, on the other hand, often accrue interest on the basis of the actual number of days elapsed in an interest period compared to a 365- or a 366-day year. This discrepancy can create a possible interest accrual differential on a floater redemption date resulting from redemption or acceleration of the underlying asset. In order for sufficient funds to be available to make the interest payments due on floaters, this differential must be accounted for, which in most transactions is accomplished via the definition of the maximum interest rate on the floaters.

Non-accrual days can be illustrated by analyzing interest accruals for underlying assets and floating receipts during a 31-day month. During a 31-day month, floaters will accrue 31 days of interest while the underlying assets will accrue only 30 days of interest. The extra day is known as a "non-accrual day" because on the 31st day of that month, the underlying assets will not accrue interest. During a semiannual period, the number of non-accrual days could increase to four (184 days versus 180 days). In other words, the amount of interest income generated by the assets must be spread over the longer accrual period of the floaters, which requires downward adjustment of the maximum rate on the floaters in order for sufficient funds to be available to make the interest payments due on floaters.

The TOB structure may address this potential mismatch in the definition of the maximum rate, such that non-accrual days will not subject the floaters to a possible interest shortfall. If the assets and the receipts have the same accrual basis, then an adjustment to the maximum rate for non-accrual days is not necessary.

Odd-Lot Amounts

Odd-lot amounts may result from differences between the minimum authorized denominations for underlying assets and the floaters, or from a requirement to maintain the initial proportional relationship between floaters and residuals.

When underlying assets are partially redeemed and receipts are required to be redeemed in denominations greater than the redemption amount of the assets, structures typically require that money from the redemption of the assets must remain on deposit in the trust until sufficient funds are available to redeem receipts in authorized denominations and, if required, in amounts that will maintain the stated proportional relationship between floaters and residuals.

Unused redemption funds are generally not invested, and if invested there is no guarantee that they could be invested at a rate higher than or equal to the rate paid by the redeemed security. Accordingly, they are typically classified as non-interest-bearing assets because they will not generate any guaranteed cash flow that could be used to pay floaters.

Non-interest-bearing assets present a potential source of insufficient cash flow because there could be more interest-bearing floaters outstanding than interest-bearing assets. If odd-lot amounts can

occur in a transaction, this risk is typically addressed in the definition of the maximum rate on the floaters or by other means that provide an equivalent effect.

Investment of Cash Flow

Limiting the investment of cash generated from the assets is important to the security of floaters. Because the cash flow from the asset is the only source of revenue, any loss of principal resulting from a loss in an investment by the trust can have a negative effect on the floaters and on the ability of the trust to make required payments. Typically, cash flow generated by the deposited assets is passed through to floater holders on the date of receipt. In some structures, such as structures with the potential for odd lots or a pool of assets, funds may be held by the trust for a period of time. For TOBs rated under this methodology, these funds have typically been invested in highly liquid investments rated at least as high as our credit assessment of the underlying assets, with maturities that assure their availability when needed.

Issuance of Floaters in Excess of the Par Amount of the Deposited Bonds

Some TOB programs permit the issuance of a par amount of floaters in excess of the par amount of bonds deposited into the trust when the assets deposited are valued at a premium to par. The sale price of the additional floaters (the par amount of floaters in excess of the par amount of deposited bonds) is generally reflective of the value of the premium on the underlying bonds.

Programs with the ability to issue more floaters than bonds encounter two structural issues not found in standard TOB structures: (i) redemption of the deposited bonds at par may not be sufficient to repay a corresponding amount of floater principal; and (ii) distribution of the deposited bonds, due to a TOTE, for instance, may not provide equivalent value relative to the face amount of the floaters. In these situations, adequate structural features include the following:

- (i) The liquidity facility is sized to the full principal amount of the floaters, and there is a mandatory tender of the additional floaters payable by the liquidity provider when underlying bonds are redeemed. Upon the full redemption of deposited bonds and a corresponding redemption at par of a like amount of floaters, there may still be floaters outstanding that must be repaid. Since the principal of the underlying bonds is not sufficient to repay all the floaters, the additional floaters depend on the liquidity provider for repayment in these circumstances; and
- (ii) The structure provides that, on each interest payment date of the underlying bonds, floaters are redeemed on a schedule reflecting amortization of the premium at which the assets were deposited into the trust. After each such redemption, the par amount of floaters will normally be more closely equated to the par amount of bonds. Eventually, the par amount of bonds will be equal to the par amount of floaters, and the mismatch in par amounts will be eliminated.

The Credit Quality of the Liquidity Provider and the Structure and Legal Provisions of the Liquidity Facility

The short-term rating is based on the credit quality of the entity providing liquidity, as well as on an assessment of the risk that the liquidity facility could terminate without a prior mandatory purchase of the floaters funded by the liquidity provider. Termination is usually related to the credit quality of the assets deposited in the trust.

Tenders and the Liquidity Facility

An assessment of the structure and legal provisions of the liquidity facility is an important aspect of our analysis of TOBs, particularly for assigning short-term ratings to floaters. Floaters are variable-rate instruments, subject to mandatory and optional tenders. Without sufficient liquidity, there would be no assurance that holders of floaters would receive principal, plus accrued interest, when their certificates are tendered for purchase. Liquidity is typically externally provided in the form of a standby purchase agreement, or a liquidity swap agreement. Standby purchase agreements are the most common source of liquidity for payment of purchase price.

In our assessment, the form of the liquidity is less important than whether the facility is sufficiently sized and is reliably accessible to pay principal, plus accrued interest, in the event of a tender of floaters. In order for the short-term rating to be primarily based on the quality of the liquidity provider and the assets in the trust, a liquidity facility must be sized to cover the full principal amount of floaters, plus the maximum amount of interest that could accrue on them between distribution dates, and the trustee must be able to access the facility when needed to make the full and timely payment of purchase price. We typically consider whether the draw times to access the facility will reasonably ensure that payment of the purchase price will be made at the time and on the date it is due.

In addition to sufficiency and accessibility, we typically assess the structure of the program as it relates to mandatory tenders for conversion of rate mode, for substitution of the liquidity facility and for the expiration or early termination of the liquidity facility.

Maintaining Adequate Liquidity Coverage

When assets are added to the trust, additional floaters are issued to fund their purchase. For liquidity coverage to remain adequate, with the additional issuance of floaters that could be tendered, the liquidity facility must be increased accordingly. We typically review the structure to see whether it provides that the liquidity facility will be increased simultaneously with the issuance of additional floaters.

Tender Option Termination Events

In general, TOBs are structured such that holders of floaters bear some of the risks associated with ownership of the underlying bonds; otherwise, tax counsel may be unwilling to opine on their tax-exemption status. The right of holders to tender their floaters to the trust with third-party liquidity support insulates holders from many risks associated with ownership of the underlying bonds, but TOTE risks are generally retained by the floater holders. Occurrence of a TOTE typically results in an immediate and unconditional termination of floater investors' right to tender floaters back to the trust, and also in an immediate termination of the liquidity facility. TOTEs primarily relate to the credit quality of the underlying asset or tax status of interest paid on the underlying asset. TOTEs have typically been limited to those listed in the shaded box below.⁴

⁴ Typical terms and conditions could change over time.

Typical Tender Option Termination Events

- » Payment default by the issuer⁵ of an underlying asset, or if an asset in the trust is credit-enhanced (i.e., with bond insurance), by the issuer and the credit enhancer
- » The rating on an underlying asset is downgraded below Baa3 (based on the rating which is the higher of the issuer or the credit enhancer)
- » Act of bankruptcy by the issuer of an underlying asset, or if the asset is credit-enhanced, bankruptcy of both the issuer and the credit enhancer
- » A determination of taxability on an underlying asset previously classified as tax-exempt

Approaches to the distribution of assets to receipt holders following a TOTE include:

- » Liquidation of assets as soon as practicable if sufficient proceeds are available to make full payment of principal and interest to the floaters, or
- » Distribution of the assets to the owners of the floaters and residuals

Unless the TOTE events are limited to severe credit deterioration of the underlying asset or determination that interest on the underlying asset is no longer exempt from federal income tax, the TOB may not qualify to receive a short-term rating under the approach described in this methodology.

Assigning the Short-Term Rating to Tender Option Bonds

Our short-term ratings of TOB floaters supported by conditional liquidity facilities that meet the standards described above are based on our assessment of both the short-term credit of the support provider and our view of the probability of termination of the support provider's obligation to purchase floaters pursuant to the liquidity facility without a mandatory tender of the floaters. If the quality of the deposited asset deteriorates, the likelihood of a TOTE increases.

The short-term ratings of obligations supported by conditional liquidity are capped at the lower of the support provider's short-term credit rating or CR Assessment, as applicable, its equivalent on the VMIG scale and the maximum short-term rating for a given long-term rating on the underlying asset in the trust.

Exhibit 2 shows the maximum TOB short-term ratings for a given long-term rating on the underlying asset. Column 1 shows how short-term ratings are mapped from an underlying long-term rating when the liquidity facility includes standard TOTEs linked to the underlying asset. Column 2 shows how short-term ratings are mapped from long-term ratings when standard TOTEs are linked to the credit of a financial guarantor (the long-term ratings of financial guarantors historically have experienced more rapid transitions). Column 3 is provided for reference only, because the short-term ratings are assigned on the VMIG scale.⁶

⁵ The term *issuer* also refers to the borrower when the borrower is the primary obligor on a bond.

⁶ See Moody's *Rating Symbols and Definitions* under the Moody's Related Publications section.

EXHIBIT 2

**Correspondence Between Long-Term and Short-Term Ratings:
TOB Floaters Supported by Conditional Liquidity Facilities**

Long-Term Rating of the Underlying Asset	TOB Floaters with Standard Automatic Termination Events Linked to Municipal Credits (Column 1)	TOB Floaters with Standard Automatic Termination Events Linked to Financial Guarantors (Column 2)	P-Scale (for reference) (Column 3)
Aaa	VMIG 1	VMIG 1	P1
Aa1			
Aa2			
Aa3		VMIG 2 VMIG 3	
A1			
A2			
A3	VMIG 2	SG	P2
Baa1	VMIG 3		
Baa2	SG		
Baa3			P3
Ba1 to C			
			Not Prime

Source: Moody's Investors Service

Where there is a financial guarantor for the deposited assets, TOB program documents typically provide that TOTEs must have occurred at both the municipal issuer and the financial guarantor with respect to bankruptcy/insolvency, nonpayment or downgrade below investment grade in order for the liquidity facility to terminate. In these cases, we consider the issuer's underlying rating on the bond as well as the financial guarantor's financial strength rating when assigning the short-term rating to the floaters. In assessing the short-term risk pertaining to the floaters, we consider the associated VMIG rating for the financial guarantor's financial strength rating (Exhibit 2, column 2) and the VMIG rating associated with the applicable municipal issuer's underlying rating (Exhibit 2, column 1). We typically assign the higher short-term demand obligation rating to a TOB with a structure that meets our criteria described above.

Changes in tax-status of municipal bonds have been extremely infrequent. In the event that we believe the tax status of a deposited asset is being or may be questioned by an authority with jurisdiction, or if there is a lack of transparency surrounding a relevant authority's determination of tax exemption, the short-term rating may be lower than would otherwise be indicated in the prior paragraph. Taxable floaters (which result from the deposit of taxable municipal assets) may not contain any TOTEs as they do not need to bear some of the risks associated with ownership of the underlying bonds. In the absence of TOTEs, the short-term rating applied to the floaters typically reflects the short-term rating of the liquidity provider and is not tied to the long-term rating.

The Relevant Benchmarks for Our Analysis of the Liquidity Provider's Credit Quality

Liquidity providers for TOBs are typically banks. In assessing liquidity facilities that support tender option bonds, we use the bank's senior unsecured short-term debt rating in transactions where the bank itself or an affiliated entity is the residual investor (known as proprietary transactions).

We use the applicable bank's short-term Counterparty Risk Assessment (CR Assessment) as the relevant benchmark for transactions in which an unaffiliated third party is the residual investor (known as third-party transactions).

Our CR Assessments are opinions on the likelihood of a default by an issuer on certain senior operating obligations and other contractual commitments, including payment obligations associated with covered bonds (and certain other secured transactions), derivatives, letters of credit, third-party guarantees, servicing and trustee obligations and other similar operational obligations that arise from a bank in performing its essential client-facing operating functions. Please see *Moody's Rating Symbols and Definitions* for more information. In the event that our CR Assessments are replaced by a different indicator, that indicator would be the relevant benchmark for third-party transactions. If a bank does not have a CR Assessment or an equivalent, the relevant benchmark would be the bank's short-term senior unsecured rating.

Limitations, Assumptions and Other Rating Considerations

In this section, we discuss limitations and assumptions that pertain to the overall rating methodology and some of the additional factors that can be important in determining ratings for tender option bonds.

Limitations

Our ratings incorporate expectations for future performance. In some cases, our expectations for future performance may be informed by confidential information that we cannot disclose. In other cases, we estimate future results based on past performance, trends in related sectors, or other considerations. In any case, predicting the future is subject to substantial uncertainty.

In addition, our forward-looking expectations may vary from historical performance, and our long-term forward view may be different from our near-term forward view.

We seek to incorporate all material credit risks into our ratings, whether long-term or short-term risks, with the most forward-looking view that visibility into these risks permits. In most cases, nearer-term risks are more meaningful to issuer credit profiles and thus have a more direct impact on ratings. However, in some cases, our views of longer-term trends may have an impact on ratings.

Our ratings for TOBs reflect expectations regarding the priority claim and respective rights and obligations of floaters and residuals; however, observations of how these structures behave in scenarios of stress or distress are extremely limited. Should more such scenarios be observed with outcomes at variance with our expectations, the implications of these outcomes on credit risk would generally be incorporated in our assessment of TOBs, potentially leading to ratings that are lower than would be indicated by an approach primarily based on the credit quality of the underlying assets, the credit quality of the liquidity provider and the quality and structure of the liquidity facility.

In the “Other Rating Considerations” section below, we provide additional examples of factors that may be important to ratings over time.

Assumptions

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, changes in tax laws, and regulatory or legal actions.

Key rating assumptions that apply in this sector include our view that sovereign credit risk is strongly correlated with that of other domestic issuers, that legal priority of claim affects average recovery on different classes of debt sufficiently to generally warrant differences in ratings for different debt classes of the same issuer, and the assumption that access to liquidity is a strong driver of credit risk.

Other Rating Considerations

Changes in Regulations and Tax Laws

Changes in regulations, tax law or tax enforcement, particularly if sudden, could have a material impact on the workability and effectiveness of structures for TOBs in a manner that would change our overall assessment of the credit and structural risk in these transactions.

Changes in Typical Deal Structures

While TOBs have typically been structured in a relatively similar pattern in recent years, transactions could include different structural features or a combination of features that would affect our analysis and ratings. Structures might also change in response to changes in regulations and tax laws. In assessing the impact that different structural features may have on default probabilities and loss given default, typical considerations would likely include the way that the structures allocate risk, their impact on the rights and obligations of transaction parties, the willingness of third parties to provide credit enhancement to such structures, and our confidence level in how such structures would fare in stress and distress scenarios, which may be informed by legal opinions or other third-party opinions or assurances.

Appendix A: Rating Custody Receipts Deposited into TOBs

Custody Receipts

Custody receipts are certificates evidencing ownership interest in one or more securities held by a custodian. As is the case in most secondary market products, custody receipts are created and tailored to meet specific needs of investors. In the municipal market, custody receipt-based structures have been used to separate all or a portion of an underlying bond's coupons and/or principal payments for sale to separate investors, to add bond insurance in the secondary market, or to combine bonds with other forms of credit enhancement in order to deposit the custody receipts into TOB programs. In each case, the underlying bonds and any applicable credit enhancement instrument are deposited with a custodian pursuant to a custody agreement. The custodian, in exchange for the deposit, issues custody receipts which represent individual interests in the deposited municipal bonds and applicable enhancement. When credit enhancement is added to a custody receipt, the custody receipts typically pass through amounts equal to the principal and interest on the underlying bonds less any applicable fees related to the credit enhancement.

Custody Receipts typically are credit-enhanced through the addition of a letter of credit (LOC) or a credit enhancement swap. Credit enhancement is used by TOB program sponsors to create TOB-eligible assets from bonds that do not, on their own, meet the minimum credit requirements of TOB investors. As with all structures incorporating credit enhancement, our ratings of custody receipts with credit enhancement are based on: (i) the credit quality of the provider of the credit enhancement; and (ii) whether the mechanical and legal aspects of the structure provide for timely payment of principal and interest based on the provider's credit.

The Relevant Benchmarks for Our Analysis of the Credit Enhancement Provider's Credit Quality

In applying this methodology to letters of credit or credit enhancement swaps providing credit enhancement to secondary market custody receipts, we use the provider's senior unsecured debt rating to reflect the long-term payment risk of the bank in transactions in which the bank providing the support retains a residual interest in a TOB trust holding such custody receipts (known as a proprietary transaction). We use the Counterparty Risk Assessment (CR Assessment) to reflect the long-term payment risk of the bank for custody receipts deposited into TOB transactions in which third parties unaffiliated with the supporting bank are the residual investors (known as a third-party transaction). In the event that our CR Assessments are replaced by a different indicator, that indicator would be the relevant benchmark for third-party transactions.

Adding Credit Enhancement

When credit enhancement that meets our criteria for credit substitution⁷ is used in a custody agreement, the resulting custody receipt can be rated based on the credit of the party providing the credit enhancement rather than the issuer of the underlying bonds when the transaction documents clearly provide for the pass-through of enhancement payments to the custody receipt holders. In these transactions, credit enhancement, generally in the form of an LOC or a swap, is added to the custody agreement after the bonds have already been issued, and the issuer is not a party to the custodial arrangement. The credit enhancement supports payments only to the holders of the custody receipts, and the rating on the underlying bonds is not affected by the addition of an LOC or swap to the custody

⁷ For details, see our cross-sector methodology that discusses credit substitution under the Moody's Related Publications section.

agreement. In the majority of structures using an LOC for credit enhancement, the custodian is instructed to draw on the LOC to make payments on the custody receipts on the dates debt service is due on the deposited bonds. Principal and interest payments on the bonds are used to reimburse the LOC provider. In structures using a swap for credit enhancement, the custodian generally uses principal and/or interest received on the underlying bonds to make payments on the custody receipts on the dates debt service is due on the deposited bonds. The swap provides payment in an amount equal to principal and/or interest payable on the custody receipts to the extent sufficient money is not received by the custodian from the issuer of the underlying bonds.

Joint Default Analysis

Where credit enhancement is included in the structure and meets our standards for credit substitution, we typically assign long-term enhanced ratings to custody receipts based on credit enhancement included in the structure. In almost all cases, custody receipts with credit enhancement include payment obligations of the credit enhancer that do not mirror payments due on the underlying bond. For example, payment for mandatory tender upon expiration or substitution of the credit enhancement is owed by the enhancement provider but not by the underlying obligor. When there are mismatches between what is owed on the underlying security and what can be owed on the custody receipt, we do not apply joint default analysis (JDA⁸) to credit-enhanced custody receipts, because payment default could occur solely based on a default by the credit enhancer. In structures in which all payment obligations to the custody receipts under the custody agreement mirror payment obligations on the underlying municipal security, we apply JDA to the custody receipts.

Structure

In reviewing a custody receipt structure, we review the documents that establish the custody arrangement to assess whether the legal structure on its face provides that investors in the custody receipt will benefit from the deposited municipal securities and any credit enhancement that has been added through the custody arrangement. We also review the representations and warranties that the assets are clear of any lien, pledge, encumbrance or other security interest both before and after any transfer and the relevant opinions of counsel as to the enforceability of the agreements.

With respect to the risk that the custodian's insolvency could affect the assets underlying a custody receipt, the custodian typically represents that it is a trust company or commercial bank with trust powers and the custodial agreement includes provisions requiring that assets, as well as all funds received from them, be held by the custodian separate and apart from the bank's general assets and separate from other assets held in custody for other transactions, specifically stating that the custodian does not have the authority to assign, transfer, encumber, pledge, set off, or otherwise transfer or dispose of the assets, except as specifically authorized by the terms of the custody agreement, and that the custodian cannot be removed or resign until a successor custodian has been appointed and taken delivery of the underlying securities.

The custody receipts are typically subject to mandatory redemption upon any early payment of the underlying bonds. In many cases receipt holders have the option to withdraw their proportionate share of the underlying bonds in exchange for their custody receipts. When this occurs, custody receipt holders acknowledge in writing to the custodian that the bonds they are withdrawing are not supported by the credit enhancement and may not carry a Moody's rating.

⁸ See the appendix describing joint default analysis in our cross-sector methodology that discusses credit substitution. For a link to our sector and cross-sector methodologies, see the Moody's Related Publications section.

Custody Receipts Credit-Enhanced by a Letter of Credit

An LOC added to a custody agreement may be structured on either a direct pay or standby basis. In structures where custody receipts are enhanced with direct-pay LOCs, the custodian has clear instructions to draw on the LOC to make payments of principal and/or interest on the custody receipts when due and to use the funds received from the deposited bonds to reimburse the bank following the honoring of a drawing.

Custody Receipts Credit-Enhanced by a Credit Enhancement Swap

In some instances, a bond is deposited into a custody arrangement and custody receipts are issued with credit enhancement in the form of a swap. The swap is between the custodian and the swap provider and is executed pursuant to standard International Swaps and Derivatives Association (ISDA) documents. Under the swap agreement, the swap provider agrees to make timely payment of debt service to the extent the underlying bond fails to pay. In addition, the swap will make timely payment of purchase price to receipt holders in the event of a mandatory tender of the custody receipts. If this occurs, the underlying bonds are delivered to the swap provider in return for any purchase price payment.

In structures enhanced with standby swaps, the custodian is instructed to use funds derived from deposited bonds to make payments of principal and/or interest when due on the custody receipts and the swap provider is obligated to make payments to the extent funds received are insufficient to pay debt service. Because the issuer of the bonds is the first source of payment in a standby structure, the potential for bankruptcy of the issuer becomes a credit risk for holders of the custody receipts. In a structure supported by a standby swap, we assess the extent to which custody receipt holders are insulated from the risk that payments made to them could be deemed a preferential transfer subject to claw-back as a result of a bankruptcy proceeding. Elements or conditions that we consider reasonable protection from preference risk in the event of bankruptcy of the underlying obligor typically include:

- (i) A reasoned opinion of counsel stating that payments made by the underlying obligor will not be deemed preferential and subject to claw-back in the event of obligor bankruptcy; or
- (ii) (a) Coverage by the swap of any payments made to the custody receipt holders from the deposited bond that may be required to be returned to the issuer's bankruptcy estate, and
 - (b) the swap does not terminate until the expiration of the applicable preference period following a final payment; or
- (iii) The issuer is a municipality under the bankruptcy code and therefore its payments of debt service on bonds in the ordinary course of business are not subject to preference.

In some instances the custodian is instructed to draw for a preference payment once it has occurred in order to repay disgorged amounts to receipt holders. In other instances, upon bankruptcy of the obligor the custodian is instructed to draw for the maximum possible preference recovery amount. In this instance the funds are held by the custodian until either (i) a preference is claimed in which case the custodian pays the funds to the receipt holders or (ii) if the bankruptcy proceeding is dismissed without a preference claim, the funds are returned to the swap provider.

For us to consider that the swap is an effective credit enhancement, the custody receipts will typically be subject to mandatory tender at least one business day prior to the scheduled swap expiration date. In addition, swaps contain standard ISDA defaults and remedies, including the right of either party to establish an early termination date due to an event of default of the other party. For us to consider that the swap is an effective credit enhancement, an early termination date established by either party

must typically have a minimum notice period to allow for a mandatory tender of the custody receipts at least one business day prior to the early termination date of the swap.

Standard ISDA documents contain a provision that alleviates the non-defaulting party from all payment obligations should the other party default (Section 2a(iii) of a standard ISDA swap agreement). For us to consider that the swap is an effective credit enhancement, this section cannot apply to the swap provider's obligations to make payments on the custody receipts.

OUTDATED
METHODOLOGY

Appendix B: Using Pools of Municipal Bonds in TOB Programs

Some TOB programs provide for the deposit of multiple municipal assets into a trust from which one class of floating receipts and one or more classes of residual receipts are issued. This may apply to situations where bonds are of the same issuer but have different maturities, are from the same issuer but have different ratings, or are issued by different municipal issuers with varying ratings and structure. Each floater has an undivided, proportional interest in the assets held by the trust. Our review of these programs typically includes an assessment of how the following key issues are incorporated into the structure of the program:

- » Multiple interest rates
- » Multiple debt service payment dates
- » Management of the quality of the pool
- » Maintaining adequate liquidity coverage

When these structural issues are adequately addressed, we consider the credit quality of the pool to be equal to the lowest-rated asset in the trust, which is reflected in the long-term portion of the rating assigned to the floaters.

Multiple Interest Rates

In most instances, when multiple assets are deposited into a trust, the interest rate on each asset will be different; therefore, structures generally contain provisions such that the maximum interest amount payable to the floaters in any payment period is no more than the aggregate total of interest on those assets in the same period. In the absence of such provisions or similar protections, the transaction's credit risk might be affected by future market movements in interest rates that we cannot predict.

We typically review the maximum rate definition to see whether it provides that the amount promised to floaters will not exceed the cash flow generated by the assets. If a program defines the maximum rate as the weighted average interest rate of the assets held in the trust and an asset with a coupon higher than that rate is redeemed in the middle of a floating-rate period, the potential exists for the interest rate promised to the floaters to be higher than the maximum rate. If so, the cash flow generated from the assets would not be sufficient to pay the amount promised to the floaters. We typically assess whether a deficiency could arise upon a redemption or a prepayment of any of the assets held by the trust on a date other than a rate reset date for the floaters.

TOB programs have typically used one of the following methods to address this issue:

- » Calculate the maximum rate using the lowest interest rate on any of the assets held in the trust, or
- » If maximum rate is calculated using a weighted average, recalculate the maximum rate upon any pass-through of principal in the trust.

A similar issue can arise if assets that have a lower coupon than the weighted average rate of the assets already in the portfolio can be added to the trust, the amount available to pay floaters could be less than the rate of interest promised. We typically review the structure to assess how this risk is addressed. Alternatives we have found adequate include:

- » Provisions specifying that the weighted average rate of return of the assets must not be reduced upon the addition of any asset to the trust, or
- » Provisions specifying that new bonds can be added only on interest rate reset dates

Another aspect related to multiple interest rates and the maximum rate calculation centers on the distribution of only a portion of the assets. If a high-coupon asset is distributed from the trust on a date other than a floater interest reset date, the result could be that the balance of the assets may not be sufficient to pay the interest promised to the remaining floaters. We typically review structures to see whether the maximum rate is recalculated on the asset distribution date.

Multiple Interest Payment Dates

Since the cash flow from the underlying assets will be received on varying dates, we typically consider how payments will be made from this varying payment stream and whether there are structural features that sufficiently manage the timing differences for cash inflows and debt service payments. Structural solutions we typically consider adequate include:

- » Employing a highly rated servicer to advance funds that smooth out the distributions to floating-rate holders. In this case the rating of the servicer is a cap on the long-term rating of the floaters.
- » Limiting assets that can be deposited to those with interest-payment characteristics identical to those of the other assets in the trust.
- » Incorporating provisions for an optional advance by a servicer. If the optional advance is not made, payments to floaters are due upon receipt of debt service on the underlying assets. In this case, because the advances are optional and the stated terms provide that the floater investor will wait for the funds, the rating of the servicer is not a cap on the long-term rating of the floaters.

Managing Pool Quality

Some programs have the option to add additional assets to the pool after the initial rating has been assigned. We typically review the method and the criteria for adding assets into the pool to see how they avoid or limit a potential for deterioration in credit quality arising from these additions. In considering the credit quality of the deposited assets, we use the lowest-rated asset in the trust. If the terms of the transaction allow for assets to be added to the pool without ensuring that the rating of the assets is at or above the rating assigned to the floaters issued by the pool, the rating of the floaters could be adversely affected. To address the issue, program sponsors have included the following provisions:

- » Using a mandatory tender, with or without the investor option to retain, upon the addition of assets to the trust. This provision allows the investor to receive principal and accrued interest rather than being subjected to lower-quality assets and addresses the concern of lower-coupon assets having a negative effect on the promised cash flow, or
- » Establishing criteria for adding assets. Parameters that preserve the credit quality of the existing floaters are established by either (i) using a rating threshold that is no lower than that of the rating of the floaters current at that time, or (ii) using a stated minimum rating (which rating would be considered a rating cap on the long-term rating of the floaters).⁹

Maintaining Adequate Liquidity Coverage

When assets are added to the pool, additional floaters are issued to fund their purchase. For liquidity coverage to remain adequate, with the additional issuance of floaters that could be tendered, the liquidity facility must be increased accordingly. We typically review the structure to see whether it

⁹ For example, if the lowest rating of the existing assets in the pool is Aa1, but the pool allows for the deposit of assets that are rated Aa3 or higher without a mandatory tender, then the long-term rating of the floaters would be capped at Aa3.

provides that the liquidity facility will be increased simultaneously with the issuance of additional floaters.

OUTDATED
METHODOLOGY

Moody's Related Publications

Credit ratings are primarily determined by 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. 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](#).

OUTDATED
METHODOLOGY

Report Number: 1088098

AuthorsJoann Hempel
Merxe Tudela**Production Associate**

Masaki Shiomi

© 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 OBLIGATIONS 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.moody's.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. 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.