

Rating Action: Moody's affirms several German banks' ratings, changes outlook to negative from stable

23 Oct 2019

Rating actions follow the change in the Macro Profile Germany to Strong (+) from Very Strong (-)

Frankfurt am Main, October 23, 2019 -- Moody's Investors Service ("Moody's") has today taken rating actions on 9 German banking issuers, prompted by the rating agency's change of the Macro Profile of Germany (Aaa stable) to Strong (+) from Very Strong (-). A detailed analysis of Germany's Macro Profile will be made available under the following link: https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1188518

"Today's rating actions, which were largely limited to changes in rating outlooks to negative from stable, reflect German banks' increasingly challenging profitability outlook, as most of them struggle to effectively align their cost structure to the depressed revenue potential aggravated by an increasingly adverse interest rate environment and by a weaker economic growth outlook", says Bernhard Held, a Vice President -- Senior Credit Officer at Moody's.

Among the actions taken today by Moody's on the affected banks are the following:

- Affirmation of Bausparkasse Mainz AG (BKM)'s A2 long-term deposit ratings; outlook changed to negative from stable. Affirmation of its baa2 Baseline Credit Assessment (BCA) and baa2 Adjusted BCA.
- Affirmation of Bausparkasse Schwaebisch Hall AG (BSH)'s Aa1 long-term issuer and deposit ratings; outlook changed to negative from stable. Affirmation of its baa2 BCA and a2 Adjusted BCA.
- Downgrade of Debeka Bausparkasse AG (Debeka)'s long-term deposit ratings to Baa3 from Baa2; outlook remains negative. Downgrade of its BCA and Adjusted BCA to ba1 from baa3.
- Affirmation of DVB Bank S.E. (DVB)'s Aa1 long-term deposit ratings; outlook changed to negative from stable. Affirmation of its baa2 BCA and a2 Adjusted BCA.
- Affirmation of DZ BANK AG (DZ BANK)'s Aa1 long-term senior unsecured debt, issuer, and deposit ratings; outlook changed to negative from stable. Affirmation of its baa2 BCA and a2 Adjusted BCA.
- Affirmation of Kreissparkasse Koeln (KSK Koeln)'s Aa3 long-term deposit and issuer ratings; outlook changed to negative from stable. Affirmation of its a3 BCA and a2 Adjusted BCA.
- Affirmation of Muenchener Hypothekenbank eG (Muenchener Hyp)'s Aa3 long-term senior unsecured debt, issuer, and deposit ratings; outlook changed to negative from stable. Affirmation of its ba1 BCA and baa1 Adjusted BCA.
- Affirmation of Sparkassen-Finanzgruppe (S-Finanzgruppe)'s Aa2 Corporate Family Rating (CFR); outlook changed to negative from stable. Affirmation of its a2 BCA and a2 Adjusted BCA.
- Review for downgrade of Sparkassenverband Baden-Wuerttemberg (SVBW)'s Aa2 long-term issuer rating.

Please click on this link http://www.moodys.com/viewresearchdoc.aspx?docid=PBC_204828 for the List of Affected Credit Ratings. This list is an integral part of this Press Release and identifies each affected issuer.

The ratings and outlooks of all other Moody's-rated banks that are domiciled in Germany are unaffected by today's rating action.

RATINGS RATIONALE

CHANGE IN THE MACRO PROFILE GERMANY TO STRONG (+) FROM VERY STRONG (-) REFLECTS INCREASING PROFITABILITY PRESSURE AMID A PROLONGED, HIGHLY ADVERSE INTEREST RATE ENVIRONMENT COMBINED WITH POOR EFFICIENCY

Moody's rating methodology for banks includes an assessment of each individual country's operating environment, expressed as a country-specific Macro Profile, which is designed to capture system-wide factors that are predictive of the propensity of banks to fail. The Weighted Macro Profile assigned to each bank informs its Financial Profile, which is a key input factor for the determination of each bank's BCA.

Moody's has changed the Macro Profile Germany to Strong (+) from Very Strong (-) to reflect the structural profitability challenges which have become aggravated by slower economic growth and the extension of an ultra-low interest-rate environment. Germany's banking sector is particularly exposed to these factors because interest rates in Germany are more negative along the entire term structure of the yield curve than in all other euro area countries and the banking system, in particular the large number of small regional banks, is highly reliant on deposit funding, which has become an unattractively priced source of funding. In addition, the extremely weak efficiency of the banking sector, with a cost-to-income ratio that exceeds the level of most to all other banking systems of Moody's-rated banks implies rather limited capacity to absorb shocks.

These structural weaknesses will further intensify profitability pressures for the German banks, which already report poor profitability levels despite a highly benign credit cycle that has driven credit risk costs to unsustainably low levels. Because German banks face an increasing need for investments in digitalization to defend their franchise against fierce competition and also need to retain earnings in order to fund future business growth, Moody's now sees rating downgrades becoming more likely, as reflected in an increasing number of negative outlooks on German banks' long-term ratings.

SPECIFIC ANALYTICAL FACTORS FOR THE AFFECTED BANKS

Members of the savings banks sector:

-- Sparkassen-Finanzgruppe

The affirmation of S-Finanzgruppe's Aa2 CFR reflects the affirmation of the group's a2 BCA and Adjusted BCA; the unchanged two notches of rating uplift from Moody's Advanced Loss Given Failure (LGF) analysis; and the one notch uplift from Moody's assumption of moderate government support.

S-Finanzgruppe's a2 BCA reflects its sound and improved asset quality, its strong and stable capitalization, as well as its conservative, deposit-focused funding profile and sizeable balance-sheet liquidity. The BCA also takes into account the group's overall robustness given its leading market share in Germany. However, Moody's expects that S-Finanzgruppe's profitability will face sustained challenges from the low interest rate environment, mostly pressuring member banks' revenues because of their high dependence on net interest income. Based on aggregate financials, S-Finanzgruppe's revenues declined by around 4.9% to €38.6 billion between 2016 and 2018, mainly because of declining net interest income which accounts for around 75% of the group's revenues. Moody's does not have any particular governance concern for S-Finanzgruppe, and does not apply any corporate behavior adjustment to the member banks of Germany's largest banking sector.

The change in outlook of S-Finanzgruppe's CFR to negative from stable reflects Moody's expectation that sustained and increasingly adverse operating conditions for banks in Germany will elevate the risk on profitability and credit quality for S-Finanzgruppe and weaken its overall financial resilience.

-- Sparkassenverband Baden-Wuerttemberg

SVBW's Aa2 long-term issuer rating, which Moody's placed on review for downgrade, reflects SVBW's intrinsic financial strength; the result of Moody's Advanced LGF analysis, which takes into account the severity of loss faced by the different liability classes in resolution; and Moody's assumption of a moderate likelihood of SVBW receiving government support.

Moody's placed SVBW's issuer rating on review for downgrade because a continued decline in the absolute volume of bail-in-able liabilities and their share of total liabilities have reduced by such an amount that it increases the severity of loss for the issuer rating.

In the review for downgrade, Moody's will investigate if SVBW's has credible plans to restore its previous capacity of loss-absorption from bail-in-able instruments, such that it is able to sustain its current rating uplift from the rating agency's Advanced LGF analysis.

Additionally, Moody's expects that increasingly adverse operating conditions for banks in Germany will elevate the risks to profitability and credit quality for Germany's savings banks sector (both for SVBW member banks

and S-Finanzgruppe) and weaken its overall financial resilience. Because of SVBW's close interlinkage with S-Finanzgruppe, the rating agency considers the financial strength of S-Finanzgruppe as an important limiting factor when assessing the financial strength of SVBW. This could negatively affect SVBW's rating, albeit not being the driver for placing the rating on review for downgrade.

-- Kreissparkasse Koeln

The affirmation of KSK Koeln's Aa3 long-term deposit and issuer ratings reflects the affirmation of the bank's a3 BCA and a2 Adjusted BCA; the unchanged one notch of rating uplift from Moody's Advanced LGF analysis; and the unchanged one notch uplift on the bank's issuer and deposit ratings from Moody's assumption of moderate government support.

The a3 BCA reflects the bank's strong asset quality and capitalization in combination with its very defensive and high-quality, granular deposit funding. In addition, the BCA is supported by the bank's conservative liquidity management. The BCA further reflects some weakness in the bank's profitability metrics and meaningful sector concentrations. Moody's does not have any particular governance concern for KSK Koeln, and does not apply any corporate behavior adjustment to the BCA.

KSK Koeln's Adjusted BCA of a2 reflects one notch of rating uplift to KSK Koeln's a3 BCA from affiliate support. Being a savings bank, KSK Koeln is a core member of the S-Finanzgruppe. S-Finanzgruppe and its member banks operate a regulated and supervised institutional protection scheme and Moody's assesses the likelihood that savings banks receive support as very high, resulting in an Adjusted BCA that benefits from the overall financial creditworthiness of the group.

The change in outlook of KSK Koeln's long-term ratings to negative from stable reflects Moody's expectation that sustained and increasingly adverse operating conditions for banks in Germany will elevate the risk on profitability and credit quality for Germany's savings banks sector (S-Finanzgruppe) and weaken its overall financial resilience, and could therefore negatively affect KSK Koeln's Adjusted BCA and ratings. It also reflects Moody's expectation of a continued decline in volume of KSK Koeln's bail-in-able liabilities, which could result in lower rating uplift from the rating agency's Advanced LGF analysis.

Members of the cooperative banks sector:

-- DZ BANK AG

The affirmation of DZ BANK's Aa1 long-term senior unsecured debt, deposits and issuer ratings reflects the affirmation of the bank's baa2 BCA and a2 Adjusted BCA; the unchanged three notches of rating uplift from Moody's Advanced LGF analysis; and the one notch uplift on the bank's senior unsecured debt and deposit ratings from Moody's assumption of moderate government support.

The baa2 BCA reflects DZ BANK's overall sound solvency profile, based on satisfactory asset quality; a strong capitalization and satisfactory profitability; and its overall sound liquidity profile, with a high share of liquid assets providing sufficient mitigation to some dependence on market funding. The baa2 BCA further reflects DZ BANK's diversification across businesses that are only partly intercorrelated, such as banking, asset management and insurance, but also some risk concentrations that could result in a more rapid deterioration of asset quality in an adverse scenario. Despite its past involvement as a transaction bank in a tax evasion scheme around dividend payments, Moody's does not have any particular governance concern for the bank, and does not apply any corporate behavior adjustment for DZ BANK.

DZ BANK's a2 Adjusted BCA reflects three notches of rating uplift to DZ BANK's baa2 BCA from affiliate support. DZ BANK is the central institution of the banking group that forms the German cooperative banking association, Bundesverband der Deutschen Volksbanken und Raiffeisenbanken (BVR). BVR and its member banks operate a regulated and supervised institutional protection scheme and Moody's assesses the likelihood that member banks support each other as very high, resulting in an Adjusted BCA that benefits from the overall financial creditworthiness of the group.

The change in outlook of DZ BANK's long-term ratings to negative from stable reflects Moody's expectation that increasingly adverse operating conditions for banks in Germany will elevate the risk on profitability and credit quality for Germany's cooperative banking sector and weaken its overall financial resilience, and could therefore negatively affect DZ BANK's Adjusted BCA and ratings.

-- DVB Bank S.E.

The affirmation of DVB's Aa1 long-term deposit ratings reflects the alignment of the bank's ratings with those of its parent, DZ Bank, resulting in the affirmation of DVB's baa2 BCA and a2 Adjusted BCA; the unchanged three notches rating uplift from Moody's Advanced LGF analysis; and the one notch uplift on the bank's deposit rating from Moody's assumption of moderate government support.

DVB's baa2 BCA and a2 Adjusted BCA remain aligned with the respective rating assessments of its parent, DZ BANK, indicating the close integration and oversight of the ongoing run-down process of DVB's concentrated portfolios in transportation lending. The rating agency expects DVB's risk management and governance practices to benefit from the tight oversight by DZ BANK under the control and profit-and-loss transfer agreement established in 2017. A recent finding of the German Financial Reporting Enforcement Panel that DVB's statement of accounts was erroneous related to the bank's 2016 financials.

The change in outlook of DVB's long-term ratings to negative from stable follows DZ BANK's outlook change and reflects Moody's expectation that sustained and increasingly adverse operating conditions for banks in Germany will elevate the risk on profitability and credit quality for Germany's cooperative banking sector and weaken its overall financial resilience, and could therefore negatively affect DVB's Adjusted BCA and ratings.

-- Bausparkasse Schwaebisch Hall AG

The affirmation of BSH's Aa1 long-term deposit and issuer ratings reflects the affirmation of the bank's baa2 BCA and a2 Adjusted BCA; the unchanged three notches of rating uplift from Moody's Advanced LGF analysis; and the one notch uplift on the bank's issuer and deposit ratings from Moody's assumption of moderate government support.

BSH's baa2 BCA reflects the bank's strong ties with its parent DZ BANK, including a profit-and-loss transfer agreement and sizable investments in DZ BANK's liabilities; the entity's sound asset quality, very strong capitalization and defensive market funding profile; and the narrow focus of its business model as prescribed by the special legal framework for German building societies (Bausparkassen), which requires BSH and its peers to focus closely on residential mortgage lending products. Moody's does not have any particular governance concern for BSH, and does not apply any corporate behavior adjustment to the BCA.

BSH's a2 Adjusted BCA reflects three notches of uplift to BSH's baa2 BCA from affiliate support. BVR and its member banks operate a regulated and supervised institutional protection scheme and Moody's assesses the likelihood that member banks support each other as very high, resulting in an Adjusted BCA that benefits from the overall financial creditworthiness of the group.

The change in outlook of BSH's long-term ratings to negative from stable reflects Moody's expectation that sustained and increasingly adverse operating conditions for banks in Germany will elevate the risk on profitability and credit quality for Germany's cooperative banking sector and weaken its overall financial resilience, and could therefore negatively affect BSH's Adjusted BCA and ratings.

-- Muenchener Hypothekbank eG

The affirmation of Muenchener Hyp's Aa3 long-term senior unsecured debt, issuer and deposit ratings reflects the affirmation of the bank's ba1 BCA and baa1 Adjusted BCA; the unchanged three notches of rating uplift from Moody's Advanced LGF analysis; and the one notch uplift on the bank's senior unsecured debt and deposit ratings from Moody's assumption of moderate government support.

Muenchener Hyp's ba1 BCA is constrained by the bank's monoline business model as a real estate lending specialist, exposing the bank to considerable concentration risks. It further reflects the bank's very strong asset quality and satisfactory funding profile, benefiting from access to ample surplus liquidity in the German cooperative banking sector, but also the high balance-sheet leverage and weak profitability. Moody's does not have any particular governance concern for Muenchener Hyp, and does not apply any corporate behavior adjustment to the BCA.

Muenchener Hyp's baa1 Adjusted BCA reflects three notches of uplift to its ba1 BCA from affiliate support. BVR and its member banks operate a regulated and supervised institutional protection scheme and Moody's assesses the likelihood that member banks support each other as very high, resulting in an Adjusted BCA that benefits from the overall financial creditworthiness of the group.

The change in outlook of Muenchener Hyp's long-term ratings to negative from stable reflects Moody's expectation that sustained and increasingly adverse operating conditions for banks in Germany will elevate the risk on profitability and credit quality for Muenchener Hyp and Germany's cooperative banking sector and

weaken their overall financial resilience, and could therefore negatively affect Muenchener Hyp's BCA, Adjusted BCA and ratings.

Members of the commercial banks sector:

-- Debeka Bausparkasse AG

The downgrade of Debeka's long-term deposit ratings to Baa3 from Baa2 reflects the downgrade of the bank's BCA and Adjusted BCA to ba1 from baa3; and an unchanged result from Moody's Advanced LGF analysis, which continues to yield one notch of rating uplift for deposits from the Adjusted BCA.

The downgrade of Debeka's BCA to ba1 reflects the challenges the bank faces in the prolonged low interest-rate environment. Debeka's profitability is undermined by a funding structure that contains about 60% of highly remunerated fixed-rate home savings (Bauspar) deposits, aggravated by further pressured asset margins in the more adverse interest rate environment. As a result, Moody's expects Debeka to post continued losses for several years to come. While capitalization materially improved following a capital injection by Debeka's parent company in 2018, the ongoing losses could undermine the bank's solvency in the long-term, absent further parental support.

In light of persistent business model challenges, Moody's now applies a negative corporate behavior adjustment to Debeka, in addition to the existing negative adjustment for a lack of business diversification, further reflecting the weak strategic position of the bank in a sustained low interest rate environment. The additional adjustment for corporate behavior has been the driver behind the one notch downgrade of the bank's BCA.

The negative outlook of Debeka's long-term deposit ratings continues to reflect Moody's expectation that Debeka's intrinsic strength will continue to weaken, because the bank is forecast to post losses for the foreseeable future.

-- Bausparkasse Mainz AG

The affirmation of BKM's A2 long-term deposit ratings reflects the affirmation of the bank's baa2 BCA and baa2 Adjusted BCA; and an unchanged result from Moody's Advanced LGF analysis, which continues to yield three notches of rating uplift for deposits from the baa2 Adjusted BCA.

The baa2 BCA reflects BKM's strong asset quality and capitalization, as well as its sound funding profile, in particular vis-à-vis business model peers. The BCA further considers the low profitability of the bank, and importantly, the narrowly focused business model as a monoline building society (Bausparkasse), which results in material concentration risk to that business and legal limitations as regards diversification opportunities.

Moody's does not have any particular governance concerns for BKM, and does not apply any corporate behavior adjustment to the bank.

The change in outlook of BKM's deposit ratings to negative from stable reflects Moody's expectation that sustained and increasingly adverse operating conditions in Germany will elevate the risk on profitability and credit quality for BKM.

WHAT COULD CHANGE THE RATINGS UP / DOWN?

While upward pressure on the banks' ratings is unlikely, an issuer's rating could be upgraded if the issuer's BCA is upgraded or if the rating uplift from Moody's Advanced LGF analysis improves; the latter would be possible if a bank issued material volumes of subordinated debt instruments.

While upward pressure on a bank's BCA is unlikely, a BCA upgrade could result from a meaningful and sustainable progress in improving the overall poor efficiency level, as measured by the respective bank's cost-to-income ratio.

Downward pressure on the banks' ratings could result from a downgrade of the BCA and/or fewer notches of rating uplift from the rating agency's Advanced LGF analysis, for example because the funding profile shifts towards deposits and senior unsecured instruments and away from junior senior and subordinated instruments.

A bank's BCA could be downgraded if already low profitability levels compress further or if the bank increases

its risk appetite to compensate for lower margins.

A bank's rating could also be downgraded if its rating benefits from affiliate support, for example due to its membership in an institutional protection scheme, and if the creditworthiness of the supporting entity or group weakened, which could result in fewer notches of rating uplift from affiliate support.

PRINCIPAL METHODOLOGY

The principal methodology used in these ratings was Banks published in August 2018. Please see the Rating Methodologies page on www.moodys.com for a copy of this methodology.

REGULATORY DISCLOSURES

For ratings issued on a program, series, category/class of debt or security this announcement provides certain regulatory disclosures in relation to each rating of a subsequently issued bond or note of the same series, category/class of debt, security or pursuant to a program for which the ratings are derived exclusively from existing ratings in accordance with Moody's rating practices. For ratings issued on a support provider, this announcement provides certain regulatory disclosures in relation to the credit rating action on the support provider and in relation to each particular credit rating action for securities that derive their credit ratings from the support provider's credit rating. For provisional ratings, this announcement provides certain regulatory disclosures in relation to the provisional rating assigned, and in relation to a definitive rating that may be assigned subsequent to the final issuance of the debt, in each case where the transaction structure and terms have not changed prior to the assignment of the definitive rating in a manner that would have affected the rating. For further information please see the ratings tab on the issuer/entity page for the respective issuer on www.moodys.com.

For any affected securities or rated entities receiving direct credit support from the primary entity(ies) of this credit rating action, and whose ratings may change as a result of this credit rating action, the associated regulatory disclosures will be those of the guarantor entity. Exceptions to this approach exist for the following disclosures, if applicable to jurisdiction: Ancillary Services, Disclosure to rated entity, Disclosure from rated entity.

Regulatory disclosures contained in this press release apply to the credit rating and, if applicable, the related rating outlook or rating review.

Items color coded in purple in this Press Release relate to unsolicited ratings for a rated entity which is non-participating.

The below contact information is provided for information purposes only. Please see the ratings tab of the issuer page at www.moodys.com, for each of the ratings covered, Moody's disclosures on the lead rating analyst and the Moody's legal entity that has issued the ratings.

Please see www.moodys.com for any updates on changes to the lead rating analyst and to the Moody's legal entity that has issued the rating.

Please see the ratings tab on the issuer/entity page on www.moodys.com for additional regulatory disclosures for each credit rating.

Goetz Thurm
Vice President - Senior Analyst
Financial Institutions Group
Moody's Deutschland GmbH
An der Welle 5
Frankfurt am Main 60322
Germany
JOURNALISTS: 44 20 7772 5456
Client Service: 44 20 7772 5454

Alexander Hendricks, CFA
Associate Managing Director
Financial Institutions Group
JOURNALISTS: 44 20 7772 5456
Client Service: 44 20 7772 5454

Releasing Office:
Moody's Deutschland GmbH
An der Welle 5
Frankfurt am Main 60322
Germany
JOURNALISTS: 44 20 7772 5456
Client Service: 44 20 7772 5454



© 2019 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 OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S RATINGS. 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 CREDIT 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 ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$2,700,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly 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 rating, agreed to pay to MJKK or MSFJ (as applicable) for 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.