

## ISSUER COMMENT

24 July 2024



Send Your Feedback

### Contacts

Olivier Panis +33.1.5330.5987  
Associate Managing Director  
olivier.panis@moodys.com

Andrea Pasceri +33.1.5330.1021  
Ratings Associate  
andrea.pasceri@moodys.com

Carola Schuler +49.69.70730.766  
MD-Banking  
carola.schuler@moodys.com

Nick Hill +33.1.5330.1029  
MD-Financial Institutions  
nick.hill@moodys.com

### CLIENT SERVICES

Americas 1-212-553-1653

Asia Pacific 852-3551-3077

Japan 81-3-5408-4100

EMEA 44-20-7772-5454

## Deutsche Bank AG

### Litigation and risk provisions mute profit despite solid operating performance

*All comparisons in this report are made versus Q2 2023 unless otherwise indicated.*

On 24 July, [Deutsche Bank AG](#) (DB, A1/A1 stable, baa2<sup>1</sup>) reported a pretax profit of €411 million in the second quarter of 2024, down 71% from the year-earlier period, mainly driven by the [previously announced](#) €1.3 billion litigation provision related to the takeover of Postbank AG. Excluding this effect, DB's profit before tax would have been €1.7 billion, around 20% higher than the year-earlier period, reflecting steady business performance and controlled operating costs, which more than offset elevated loan loss charges, a credit positive trend.

Net revenue rose 2%, benefiting from solid fee generation that was up 12% year-over-year and offsetting a 16% decline in net interest income, stemming from asymmetries in the recognition of revenue from hedging positions. The revenue growth was reflected in stronger revenue performances in the Asset Management (AM) and Investment Bank (IB) divisions than in the Corporate Bank (CB) and Private Bank (PB) divisions. Operating expenses increased 20%, but adjusted for litigation provisions and restructuring costs, they increased only 2% and were broadly flat sequentially, in line with the €5 billion quarterly run-rate guidance.

Risk charges were up 19% year-over-year to 40 basis points (bps) of gross loans, and were also up sequentially from 37 bps in the first quarter, stemming mainly from stage 3 provisions, as commercial real estate provisions in the US remain elevated and the bank experienced a number of idiosyncratic default events in the CB and IB divisions. DB changed its risk charge expectation for 2024 to slightly above 30 bps from 25-30 bps previously. The Common Equity Tier 1 (CET1) capital ratio improved to 13.5% in the quarter from 13.4% in Q1, as higher operational and market risk-weighted assets (RWA) were largely offset by continued progress in capital optimisation measures.

Adjusted revenue increased 2%<sup>2</sup> to €7.6 billion. Performance in the quarter was particularly strong for IB (adjusted revenue up 9%) and AM (adjusted revenue up 7%), while CB (adjusted revenue down 1%) and PB (adjusted revenue down 3%) were more affected by lower net interest income, in line with expectations. The performance in CB and PB also reflected loan volumes that were respectively flat and 1% lower year-over-year. Corporate loan demand remained muted and the strategy in PB continues to drive growth in wealth management against reductions in mortgages. This performance was more than offset by the normalisation of AM revenue, reflecting stronger management fees on increasing average assets under management and rising market levels, as well as the strong performance of the IB division.

Origination & Advisory (O&A) revenue doubled, boosted by a strong recovery in leveraged debt origination and market share gains, while Fixed Income & Currencies (FIC) revenue

was down 3% (underperforming US peers' average year-over-year growth of 9%), driven mainly by lower volatility in foreign exchange and slightly lower rates revenue in an uncertain interest rate environment.

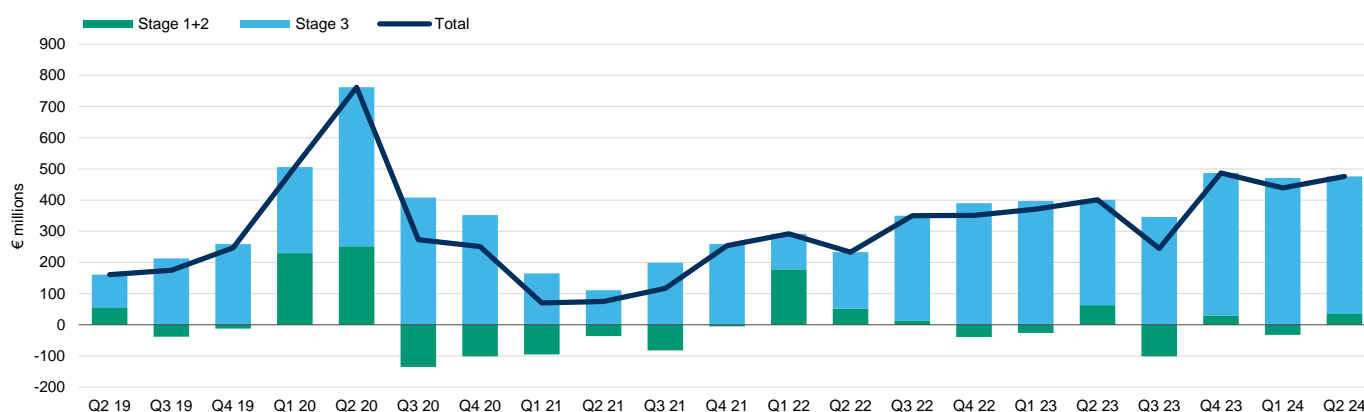
While the group's net interest margin and net interest income in the banking book remained broadly stable quarter-on-quarter, we expect the normalisation of deposit costs and subdued lending volumes in CB and PB will continue to negatively affect net interest income over 2024, though DB expects it will remain 15% higher than in 2022 and 40% above 2021. The 12% rise in fees in the first half of 2024 was also in line with the bank's expectations and will continue to support its revenue growth target of 5.5%-6.5% in 2021-25, which may be difficult to achieve if economic growth does not recover rapidly and lending activity remains low.

Group adjusted<sup>3</sup> operating costs were up 2% to €5 billion in the quarter, in line with the bank's quarterly run rate target in 2024. The modest increase in adjusted costs reflects the 7% increase in compensation and benefits stemming from both wage inflation and business growth. The rise in adjusted costs was partly offset by continued progress in DB's €2.5 billion operational efficiency programme by 2025, in which savings realised or expected from completed measures rose to 60%. The achievement of a cost-to-income ratio of less than 62.5% by 2025 remains an ambitious target compared with the 75% ratio reported in 2023 and 69% in H1 2024 (excluding Postbank litigation).

Credit impairment charges increased to around €476 million during Q2, up from €401 million the previous year and from €439 million in the previous quarter (Exhibit 1), representing 40 bps of gross loans (31 bps for full-year 2023 and 25 bps in 2022). The increase from the previous year stemmed from stage 3 provisions on impaired loans, driven by US commercial real estate (CRE) (€130 million out of the €156 million provisions for CRE risks) exposure and a few large individual impairments in the corporate banking book. The ratio of nonperforming loans (NPLs) to gross loans was stable from previous quarter at 3.1%. DB expects its cost of risk for full-year 2024 to be slightly above 30 bps in 2024 against a previous guidance at the high end of the 25-30 bps.

Exhibit 1

#### Provisions for nonperforming loans are gradually increasing (€ millions)



Sources: Company reports and Moody's Ratings

Pretax income was down 71% in the quarter and post-tax profit declined to €52 million, as a result of the exceptional litigation provision in the quarter. DB reported a net return on tangible equity (ROTE) in the quarter of 7.8% excluding the Postbank litigation cost, still lower than the 10% target set for 2025. ROTe reported for full-year 2023 was 7.4%, down from 9.4% in 2022. At the group level, DB reported an adjusted net return<sup>4</sup> on shareholders' equity of 8.6% (down from 8.8% in Q2 2023), a net return on total assets of 0.41% and a net return on RWA of 1.55%.

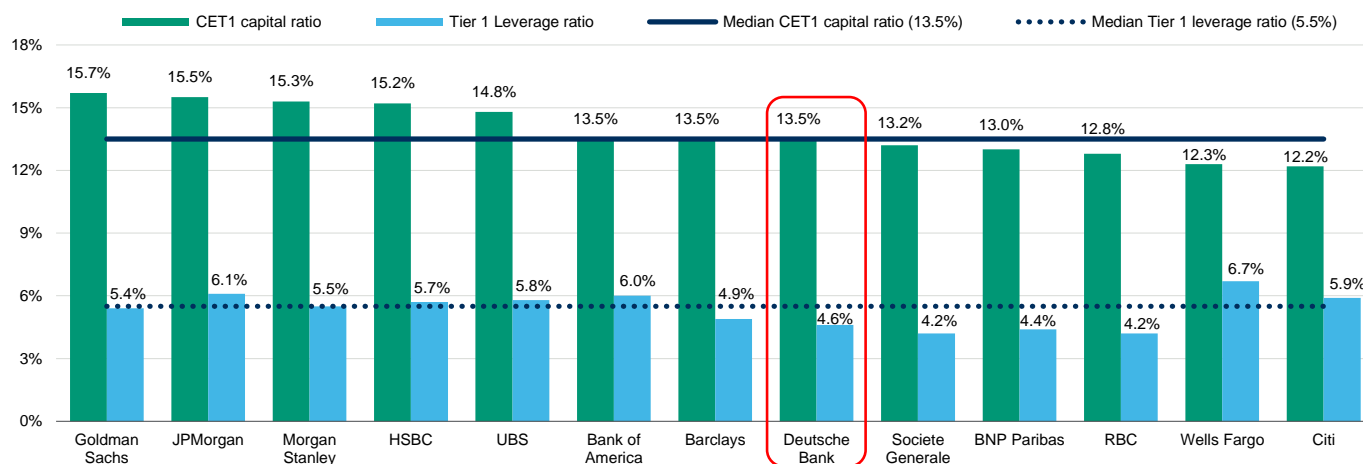
Muted net earnings, and higher operational and market risk-weighted assets in the quarter were more than offset by lower regulatory capital deduction items and the progress on DB's capital efficiency plan, leading to an increase in capital ratios. DB's CET1 capital ratio ended the quarter at 13.5%, up 10 bps sequentially and around 230 bps above its minimum regulatory requirement in 2024.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

Considering the bank at the end of Q2 2024 had already achieved around €19 billion (up from €15 billion at the end of March 2024) of its €25 billion-€30 billion RWA reduction target by 2025, it keeps some capacity to grow business and distribute capital above the level envisaged by the bank at the beginning of the 2022-25 strategic plan. In February 2024, DB announced a capital distribution of around €1.6 billion in the first half of the year, including €675 million of share buybacks, which were completed in July. The bank maintains a CET1 ratio target of above 13% at year-end 2025. The leverage ratio was 4.6%, up 13 bps sequentially, one of the lowest among peers (Exhibit 2).

Exhibit 2

**Common Equity Tier 1 ratio and Tier 1 Leverage Ratio for global investment banks, as of end-June 2024**



Notes: 1) Q2 2024 for Deutsche Bank, BNP Paribas, Morgan Stanley, JPMorgan, Goldman Sachs, RBC, Bank of America, Wells Fargo and Citi; Q1 2024 for all others. 2) The Tier 1 leverage ratios of UK and European banks are calculated per the Capital Requirement Regulations, and they exclude certain central bank balances as temporarily allowed; for US banks we show the supplemental leverage ratio (SLR). 3) The CET1 ratio for US banks is calculated under the advanced approach. Sources: Company reports and Moody's Ratings

DB's strong, high-quality liquid assets of €221 billion in Q2 2024 remained broadly stable sequentially. The liquidity coverage ratio was stable compared with the previous quarter's 136%, representing an excess of €58 billion above the minimum, and the Net Stable Funding Ratio remained broadly stable at 122%, above the bank's managed target of 115%-120%. Deposit volumes increased by €6 billion, or 1%, in the quarter (up 8% over 12 months), while average loans were broadly flat sequentially and down 1% over the full year, as high interest rates and subdued economic growth remain a constraint to a return to higher lending production.

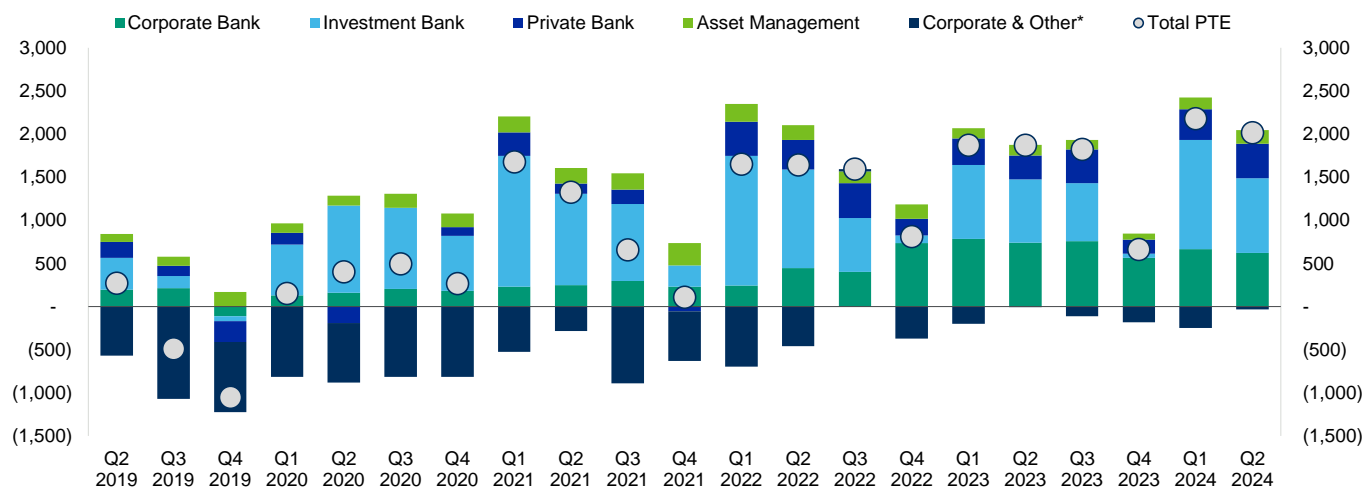
## Segmental results commentary

Unless indicated otherwise, figures displayed below are on a DB reported basis and comparisons are made versus Q2 2023.

Exhibit 3

### DB's revenue benefited from continued strong performances by IB and PB in Q2

Adjusted quarterly pretax profit by business line (excluding litigation, impairments, DVA and one-offs), € millions



Restatement for 2023 numbers are in line with the new bank's divisional reporting.

Q2 numbers adjustments include €1.3bn Postbank litigation provisions booked under Corporate & Other.

\* Capital Release Unit (CRU) discontinued from 2023 and restated in 2022 (moved to C&O). Quarterly 2019-21 figure for C&O reflects combined CRU and C&O.

Sources: Company reports and Moody's Ratings

The **Investment Bank** reported a pretax income of €746 million, up 25% from €596 million in the Q2 2023. Adjusted revenue increased 9% to €2.6 billion, driven by a significant recovery in O&A services, whose revenue more than doubled compared with the year-earlier period, more than offsetting a 3% year-over-year decline in FIC. O&A's performance was mainly supported by an almost threefold increase in advisory and an 88% rise in debt origination. FIC's revenue decline was mainly driven by lower rates and foreign exchange revenue, reflecting a more uncertain interest rate environment and lower volatility in exchange rates. Furthermore, the comparison with the year earlier quarter was affected by last year's non-recurring strong performance in distressed credits. DB outperformed its US peers in O&A, but showed a weaker trend in FIC.<sup>5</sup> O&A revenue increased 99% in dollar terms compared with US peers' aggregate increase of 40%, while FIC revenue was down 4% in dollar terms versus US peers' aggregate increase of 9%. Adjusted costs increased by 4% from the prior year but were essentially flat sequentially, reflecting the additional costs arising from investments undertaken in H2 2023, such as the acquisition of Numis in October 2023. Provisions for credit losses increased by 16% to €163 million year-over-year, or 63 bps of average loans in the quarter (54 bps in Q2 2023), mainly because of higher impairments on the stage 3 portfolio, including CRE exposures.

The **Corporate Bank** reported a pretax income of €599 million, down 8% from a year earlier. The decrease was driven by 1% lower revenue, 1% higher noninterest expenses (despite lower litigation charges, reflected in a 7% increase in adjusted costs year-over-year) and a 15% increase in provisions. The weaker performance is mainly attributable to lower net interest income, down 2% year-over-year, given the normalisation of deposit revenue and the discontinuation of the remuneration of minimum reserves by the European Central Bank, more than offsetting 9% growth in fees and commissions, which benefited from growth in Trade Finance and Lending. Loan stock in the segment remained stable both year-over-year and sequentially, reflecting subdued demand and selective underwriting. The most affected businesses were Business Banking and Corporate Treasury Services, whose revenue decreased by 9% and 2%, respectively, year-over-year, while Institutional Client Services revenue rose 8%. The 7% increase in adjusted costs was driven by higher compensations and internal service cost allocation, but given the lower impact from litigation in the segment, non-adjusted costs increased only 1%. Loan loss provisions increased by 15% to €135 million (from €117 million in Q2 2023), accounting for 47 bps of average loans in the quarter. The increase in provisions was driven by both model related increase in provisions on performing exposures and two large stage 3 inflows in the European corporate segment.

The **Private Bank** reported a pretax profit of €395 million, up 89% from a year earlier, though adjusted revenue decreased by 3%. Revenue in Personal Banking decreased by 7% year-over-year, as higher funding and hedging costs were not fully offset by higher deposit and lending revenue. Wealth Management and Private Banking revenue increased by 3%, driven mainly by higher revenue in lending and investment-related products. In Q2, assets under management increased by €7 billion to €613 billion, the highest level recorded since 2018, when the Private Bank division was founded. Adjusted costs were down 3% year-over-year, mainly because of the normalisation of investment spending and the benefits stemming from cost saving programmes, including reductions in branches and employees. Lower restructuring and severance costs compared with the year-earlier period led to a stronger 13% decrease in non-adjusted costs, which were the main driver of the segment's improved performance. Provisions for credit losses increased slightly from a year earlier to €149 million, or 23 bps of average loans in the quarter, but decreased 32% sequentially (equalling an 11 bps decrease in cost of risk). Provisions in the quarter included temporary negative effects from operational backlogs in personal banking, but were positively affected by releases related to an NPL sale.

**Asset Management** reported a pretax profit of €160 million, up 55% year-over-year. Revenue rose 7% to €663 million because of higher average assets under management, driving a 6% increase in management fees, the segment's main source of revenue. In particular, assets under management increased 9% year-over-year to €933 billion, despite an €8 billion contraction sequentially. The quarter-over-quarter contraction was driven mainly by €19 billion outflows from low-margin products in Fixed Income, Cash and Advisory Services, which was not fully offset by €9 billion inflow in passive products and positive market and foreign exchange effects. Adjusted costs were roughly stable year-over-year, while non-adjusted costs decreased by 4% mainly driven by the litigation costs booked in Q2 2023.

### Rating considerations

Deutsche Bank has a BCA of baa2 and is rated A1 for deposits, A1 for senior unsecured debt and Baa1 for junior senior unsecured debt, and is assigned a Counterparty Risk Assessment of A1(cr)/P-1(cr) and Counterparty Risk Ratings of A1/P-1. The long-term senior debt and deposit ratings carry a stable outlook.

## Moody's Related Research

### Credit Opinion

- » [Deutsche Bank AG](#), June 2024

### In-Depth Reports

- » [Deutsche Bank AG: Higher profitability and diverse, highly collateralised loan book drive credit positive improvement in bank's solvency](#), October 2022
- » [Biggest banks retain competitive advantage, but stiff obstacles loom post pandemic](#), October 2021
- » [Deutsche Bank AG: Strides in profitability show bank's credit positive restructuring is solidly on track](#), August 2021
- » [BNP Paribas, Deutsche Bank, HSBC Holdings and UniCredit: Tech investment and expansion outside core euro area markets will drive increased returns from corporate banking](#), April 2021
- » [Rapid restructuring progress and clean balance sheet set bank on stable course to complete strategic overhaul](#), November 2020
- » [Sweeping revamp of business model will be credit positive when and if achieved](#), July 2019

### Issuer Comments

- » [Deutsche Bank's €1.3 billion provision for Postbank litigation will reduce Q2 profit](#), April 2024
- » [Alleged greenwashing at Deutsche Bank's asset management arm shows rising regulatory scrutiny of ESG disclosures](#), June 2022
- » [Deutsche Bank AG: Strategic evolution moves revenue growth to the forefront as cost inflation bites](#), March 2022
- » [DB's accelerated adoption of environmental, social and governance criteria is credit positive](#), May 2021
- » [Franchise stability and continued cost control will help support DB's credit profile](#), December 2020
- » [Restructuring progress supports DB's asset performance](#), June 2020
- » [Continued strong execution and client retention will help support DB's credit profile](#), December 2019
- » [Discontinuation of merger talks with Commerzbank resets the focus to standalone execution and strategic options](#), April 2019

### Latest Rating Action

- » [Moody's Ratings affirms Deutsche Bank AG's long-term deposit ratings, outlook stable](#), June 2024

### Rating Methodology

- » [Banks Methodology](#), March 2024

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

## Endnotes

- [1](#) The ratings shown are the bank's deposit rating, senior unsecured debt rating and Baseline Credit Assessment.
- [2](#) Stated revenue increased 2%; minor adjustments were made for specific items as disclosed by DB.
- [3](#) In Q2 2024, adjustments reflect some material items, including €1.6 billion litigation costs (€395 million in Q2 2023), €106 million of restructuring and severance costs (€260 million in Q2 2023).
- [4](#) We assume an average tax rate net of deferred tax asset effects of 35%.
- [5](#) US peers' aggregates exclude any gains and expenses related to JPM's and Citi's Visa class B shares as well as any charges related to the FDIC special assessment.

© 2024 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 CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. 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 APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS 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. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS 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 credit rating process or in preparing its Materials.

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

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

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

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. 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](http://www.moody's.com) under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

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 61 003 399 657 AFSL 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 India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.



CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454