

CREDIT OPINION

9 September 2025

Update



Send Your Feedback

RATINGS

DNB Bank ASA

Domicile	Oslo, Norway
Long Term CRR	Aa1
Type	LT Counterparty Risk Rating - Fgn Curr
Outlook	Not Assigned
Long Term Debt	Aa2
Type	Senior Unsecured - Fgn Curr
Outlook	Stable
Long Term Deposit	Aa1
Type	LT Bank Deposits - Fgn Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Paula Jouandet-Dahlen
VP-Senior Analyst
paula.jouandetdahlen@moodys.com

Juliana Cerenkova
Ratings Associate
juliana.cerenkova@moodys.com

Simon James Robin
Ainsworth
Associate Managing Director
simon.ainsworth@moodys.com

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

CLIENT SERVICES

DNB Bank ASA

Update to credit analysis following rating action

Summary

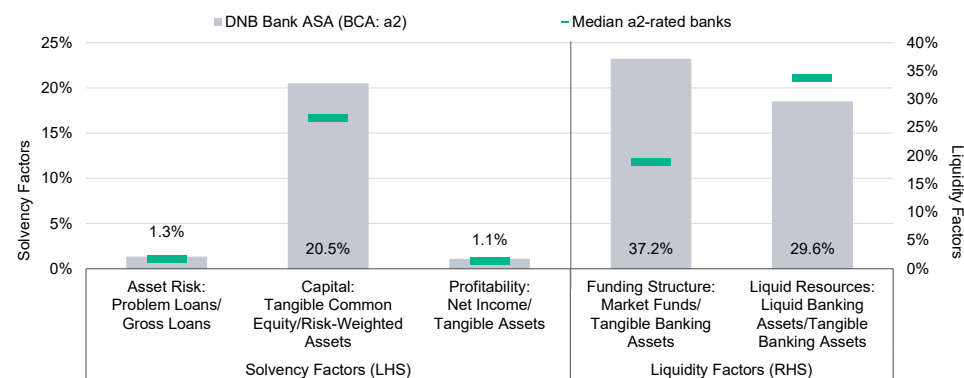
[DNB Bank ASA](#) (DNB or DNB Bank) is [Norway's](#) (Aaa) largest bank with an assigned Baseline Credit Assessment (BCA) of a2, long-term deposit ratings of Aa1 and senior unsecured debt ratings of Aa2. The outlook on the long-term deposit and senior unsecured debt ratings is stable.

DNB's a2 BCA reflects the bank's entrenched franchise that supports robust recurring profitability, comprehensive risk management, and very strong capitalization, balanced against high market funding.

The long-term deposit ratings of Aa1 and senior unsecured debt ratings of Aa2 reflect our forward-looking advanced Loss Given Failure (LGF) analysis resulting in three notches of rating uplift above DNB's BCA for deposit ratings and two notches for senior unsecured debt ratings, and one notch positive adjustment due to our assessment of moderate probability of government support in case of failure.

Exhibit 1

Rating Scorecard - Key Financial Ratios



These are our [Banks Methodology](#) scorecard ratios. Asset risk and profitability reflect the weaker of the three-year average and the latest annual figure. Capital is the latest reported figure. Funding structure and liquid resources reflect the latest fiscal year-end figures.

Source: Moody's Financial Metrics™

Credit strengths

- » Very strong domestic franchise supporting robust recurring profitability, with strong ties to decision makers and government backing
- » Ample capital buffers and lower leverage than most other large Nordic peers
- » Prudent risk and liquidity management controls

Credit challenges

- » High dependence on market funding, mitigated by a solid deposit base and excellent access to local and international capital markets
- » Pockets of higher asset risk, primarily in the offshore and shipping portfolios, mitigated by a well diversified corporate loan book and DNB's active reduction of exposure to riskier sectors over the past years

Outlook

The stable outlook on the long-term deposit and senior unsecured ratings reflects our view that DNB will continue to generate sound recurring earnings, supporting a robust capitalisation and manage asset risk prudently. We also assume continued excellent access to capital markets and prudent liquidity management.

Factors that could lead to an upgrade

DNB's BCA could be upgraded if the bank further improves its profitability and asset quality on a sustainable basis and reduces its dependence on market funding. The senior unsecured debt ratings could be upgraded as a result of further uplift in the Advanced LGF analysis if DNB maintains additional volumes of senior unsecured and junior senior unsecured debt so that the volume and subordination of senior unsecured debt remains above 12% of tangible banking assets on a sustainable basis.

Factors that could lead to a downgrade

DNB's ratings could be downgraded as a result of (i) lower volumes of loss absorbing liabilities protecting creditors in case of failure; or (ii) a downgrade in its standalone BCA due to asset quality deteriorating beyond our expectations, for example through rapid growth, international expansion into weaker operating environments, or lower capitalisation resulting in tangible common equity to risk weighted assets falling below 18%.

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.

Key indicators

Exhibit 2

DNB Bank ASA (Consolidated Financials) [1]

	06-25 ²	12-24 ²	12-23 ²	12-22 ²	12-21 ²	CAGR/Avg. ³
Total Assets (NOK Billion)	3,746.5	3,497.4	3,344.1	3,131.5	2,839.6	8.2 ⁴
Tangible Common Equity (NOK Billion)	231.7	250.4	236.6	223.1	220.8	1.4 ⁴
Problem Loans / Gross Loans (%)	1.3	1.2	1.4	1.5	1.9	1.5 ⁵
Tangible Common Equity / Risk Weighted Assets (%)	20.5	22.3	21.5	21.0	22.7	21.6 ⁶
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	10.8	9.2	10.8	11.9	13.2	11.2 ⁵
Net Interest Margin (%)	1.7	1.8	1.8	1.6	1.4	1.7 ⁵
PPI / Average RWA (%)	4.7	4.8	4.8	3.7	3.2	4.2 ⁶
Net Income / Tangible Assets (%)	1.1	1.3	1.1	1.1	0.9	1.1 ⁵
Cost / Income Ratio (%)	38.4	36.7	35.5	39.7	44.1	38.9 ⁵
Market Funds / Tangible Banking Assets (%)	37.5	37.2	37.7	33.8	30.4	35.3 ⁵
Liquid Banking Assets / Tangible Banking Assets (%)	34.4	29.6	29.4	28.7	26.1	29.6 ⁵
Gross Loans / Due to Customers (%)	129.8	136.7	136.2	134.4	131.3	133.7 ⁵

[1] All figures and ratios are adjusted using Moody's standard adjustments. [2] Basel III - fully loaded or transitional phase-in; IFRS. [3] May include rounding differences because of the scale of reported amounts. [4] Compound annual growth rate (%) based on the periods for the latest accounting regime. [5] Simple average of periods for the latest accounting regime. [6] Simple average of Basel III periods.

Sources: Moody's Ratings and company filings

Profile

DNB Bank ASA (DNB) is Norway's leading financial services group and one of the largest in the Nordic region in terms of market capitalisation. As of 30 June 2025, DNB reported a consolidated asset base of around NOK3.7 trillion (\$371 billion) and had over 11,000 full-time employees, 2.4 million personal customers and 236,000 corporate customers. The bank offers a full range of financial services, including loans, savings, advisory services, insurance and pension products for retail and corporate customers, with exposure equally balanced between the two broad customer categories. It has dominant market shares of 23% in both retail and corporate loans as of 31 May 2025. DNB is also Norway's leading asset management company, with over NOK1,500 billion in assets under management at the end of June 2025.

The Norwegian government owns a 34% stake in the bank through the Norwegian Ministry of Trade, Industry and Fisheries, which makes the government DNB's largest shareholder and ensures the bank's headquarters remains in Norway; consequently we consider a reduction in the ownership stake unlikely.

Recent developments

In August 2025, DNB announced [the appointment of Rasmus Figenschou](#) as new CFO from end of October 2025. He is currently the head of the corporate customers Norway segment and will replace Ida Lerner who is leaving DNB after having served as CFO since 2021.

In March 2025, DNB Bank completed [the acquisition of Carnegie Group](#), a Nordic investment bank and wealth manager, for SEK12 billion in cash.

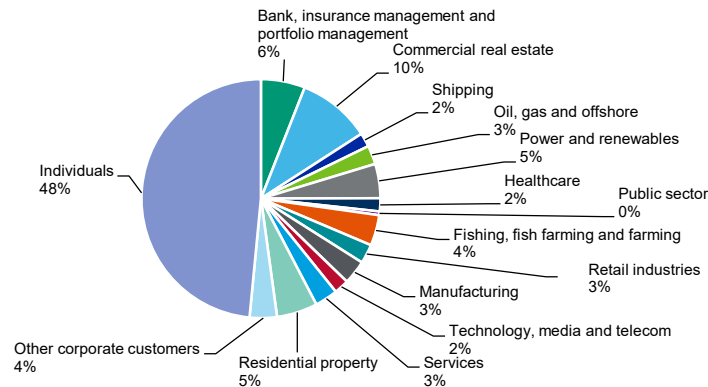
Detailed credit considerations

DNB has a strong asset risk, with solid portfolio diversification and reduced exposure to riskier sectors

DNB's asset risk score of a3 balances the low levels of problem loans and strong performance in most segments, supported by the resilient economic activity in Norway thus far in 2025 and improving macro backdrop going into 2026, against the exposures to cyclical sectors such as the offshore sector, which drive higher provisioning during economic downturns. Positively, exposure to riskier sector has actively been reduced over the past few years.

DNB's loan portfolio is well diversified, with 48% of exposures at default (EAD) comprising of retail lending, mainly low risk residential mortgages, and the remaining amount spread across various industries (see Exhibit 3), as of 30 June 2025. During the first six months of 2025, DNB reported impairment provisions of NOK1,087 million, a slight increase from NOK882 million in the corresponding year-earlier period. Cost of risk, measured as annualised loan loss provisions to gross loans, remained low at 9 basis points at end June 2025.

Exhibit 3

DNB's exposures at default (EAD) are well-distributed across sectors

Source: Bank's Factbook, Moody's Ratings

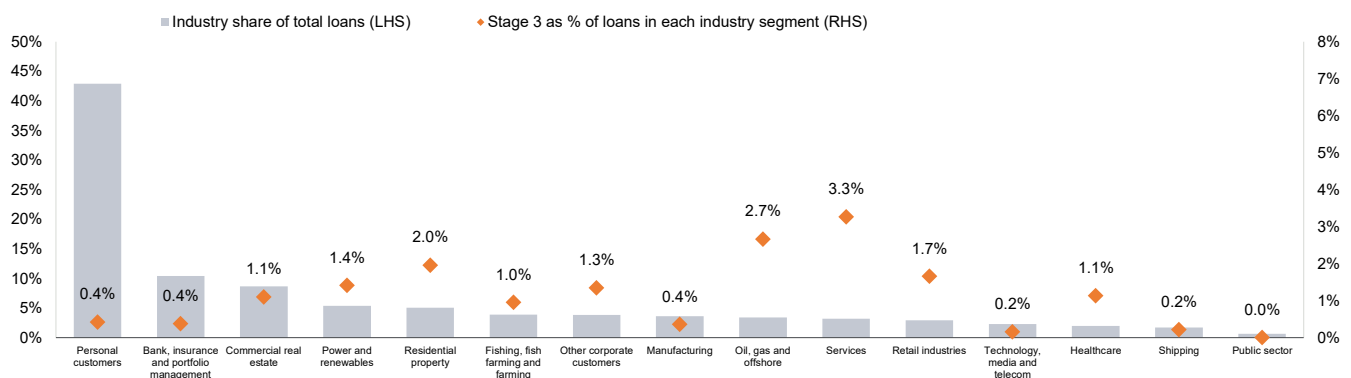
We expect DNB's problem loan ratio to remain relatively low over the coming 12 to 18 months as global macroeconomic challenges subside, with Norway being well positioned due to its energy exports. Problem loans to gross loans ratio remained broadly stable at 1.3% as of end-June 2025, compared with 1.2% in 2024 and 1.4% in 2023. The bank has successfully unwound large part of problem loans in the oil and offshore sector that explains a higher problem loan ratio in prior years.

While DNB has consistently reduced its exposures to higher risk sectors, these cause large provisions from time to time. Due to strong recurring pre-provision profits, the bank has efficiently absorbed these provisions and remained profitable. The oil and offshore sector has declined significantly in volume during the last decade and the sector represents a low 3% of EAD and 3% of total Stage 3 loans (see Exhibit 4) as of end-June 2025. Strong earnings mitigate the risk of further loan loss provisions in the oil and offshore sector, with the unreserved oil and offshore Stage 3 exposures amounting to NOK2.8 billion, compared to Moody's adjusted PPI of NOK27 billion for the first six months of 2025.

Exhibit 4

The distribution of stage 3 loans is well dispersed across multiple sectors

Industry share of total loans (LHS), Stage 3 as % of loans in each industry segment (RHS)



Source: Bank's Factbook, Moody's Ratings

Other riskier segments include commercial real estate (CRE), fishing, and shipping, which together with oil and offshore account for 18% of EAD and 201% of tangible common equity (TCE).

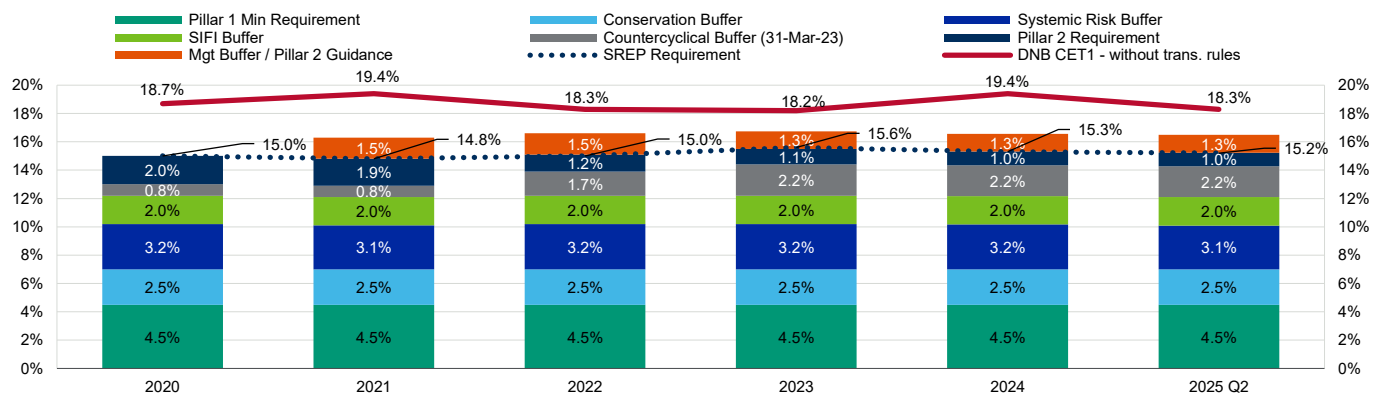
DNB has exposure to the Baltic countries through its 20% stake in [Luminor Bank AS](#) (Luminor Bank, A2/A2 negative, baa2). By decreasing its ownership in Luminor Bank to 20% from 50% through a sale to The Blackstone Group in 2019, DNB reduced its exposures to the Baltic countries, which have had historically high asset-risk volatility and anti-money laundering (AML) risks.

Ample capital buffers and lower leverage than most other large Nordic peers

DNB operates with high capital buffers. As of 30 June 2025, DNB group's Common Equity Tier 1 (CET1) capital ratio was 18.3%, slightly down from 19.4% at end December 2024, resulting in a 180 bps buffer above the regulatory expectation of 16.5%, which includes Pillar 2 Guidance of 1.25% (see Exhibit 5). The countercyclical buffer (CCyB) requirement returned to its pre-pandemic level of 2.5% on 31 March 2023. Taking into account systemic risk buffers in other countries, DNB's effective systemic risk buffer was 3.1% as of 30 June 2025¹. The CET1 ratio is expected to drop by about 60 basis points following increased risk weight floors on residential mortgages in Q3 2025, but we expect DNB to maintain a solid buffer over regulatory expectations over the coming 12 to 18 months, with a buffer of at least 0.5 percentage point.

Exhibit 5

DNB's CET1 ratio is comfortably above regulatory CET1 capital requirements



Source: Bank's reports and presentations, Moody's Ratings

DNB's Tier 1 leverage ratio has weakened to 6.2% as of 30 June 2025 from 6.9% in December 2024, but still compares favourably with international and Nordic peers.

The group's dividend policy remains unchanged, targeting a payout ratio of more than 50%, which is complemented by share buy-backs to allocate excess capital.

DNB's strong recurring income has enabled the bank to continue building capital buffers, with tangible common equity (TCE) to risk weighted assets (RWA) reaching 20.5% at end of June 2025, slightly down from 22.3% at the end of 2024, mainly resulting from the acquisition of Carnegie. Capitalisation has remained high and above the pre-pandemic levels.

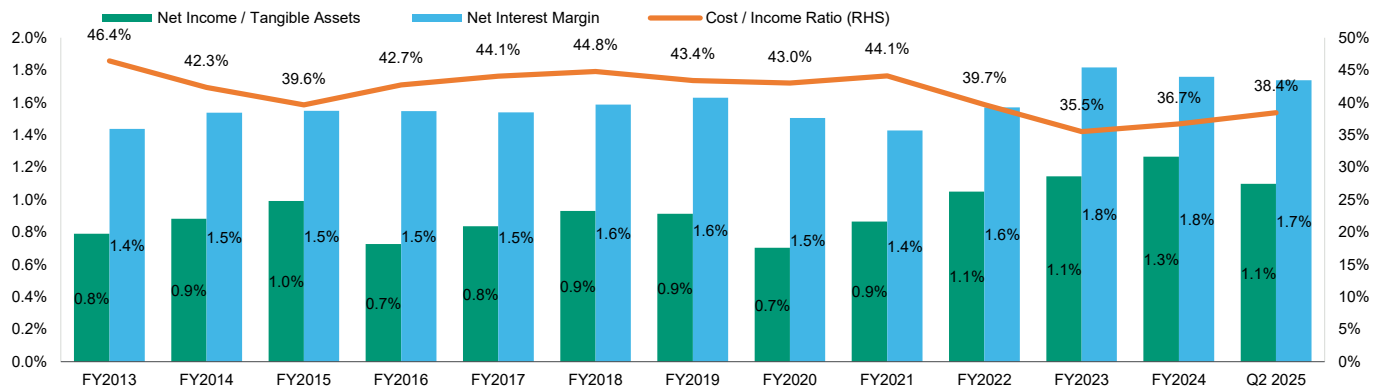
Overall, the capital score of aa2 reflects DNB's robust capital buffers, both risk adjusted and in unweighted terms. Furthermore, the very strong capital score also reflects our expectations that access to capital for DNB remains strong, and that the government of Norway continues to retain its 34% ownership stake.

Very strong domestic franchise supporting robust recurring profitability

DNB's entrenched franchise in the Norwegian economy provides a stable base to leverage on further growth potential in the Norwegian economy and the bank's role as price leader underpins strong future profitability. We expect the group's profitability to remain resilient over the coming 12 to 18 months supported by still elevated net interest margins and strong contribution from net commissions and fees benefitting from a diversified product portfolio across investment banking, asset management and money transfer services. DNB's fee-based earnings generation capacity improved following the acquisition of Carnegie in March 2025.

Reported pre-provision income in the first six months of 2025 amounted to NOK28 billion, a 2% increase compared to the same period in 2024. However, during the first six months of 2025 DNB's net income to tangible assets ratio declined slightly on the back of asset growth in the period and reached 1.10%, compared to 1.12% in the year-earlier period (see Exhibit 6).

Exhibit 6

DNB's strong recurring profitability provides loss absorbing buffers

Source: Bank's reports and presentations, Moody's Ratings

Net interest income accounted for 74% of the group's revenues for the full year of 2024 and remains the main driver of DNB's revenues. A year-on-year increase of 2% in bank's reported operating income, was offset by a 6% increase in operating expenses, leading to a slight deterioration in Moody's adjusted cost-to-income ratio to 37% for the full year of 2024 from 36% the prior year. DNB remains highly cost efficient vs international peers, operating comfortably within its target of a cost-to-income ratio at below 40%.

We expect volumes in the personal customer segment to pick up as the housing market recovers throughout the end of 2025 and 2026, whereas the corporate segment will benefit from an improving macro backdrop, overall supporting strong net interest income and commission income, notwithstanding uncertainties linked to global trade policies.

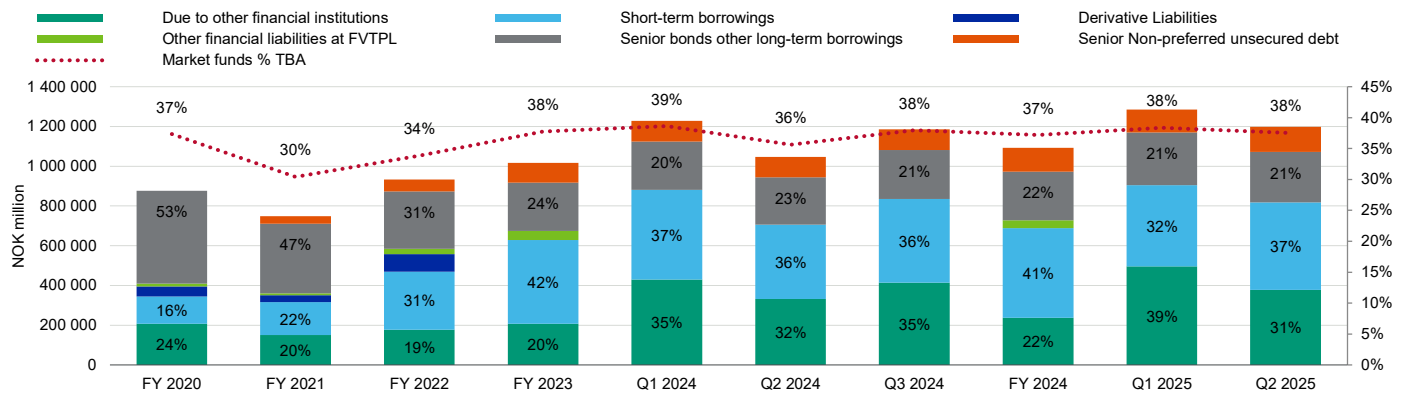
DNB reported impairment provisions of NOK1,087 million for the first six months of 2025. Of these, NOK998 million were related to corporates. We expect some further rise in loan loss provisions due to continued lag effect from the high rate environment in sectors like construction and commercial real estate.

The assigned a3 score reflects both our expected trend in profitability, but also DNB's strong franchise and stability in revenues underpinned by a diversified portfolio across customer segments and products. We forecast net income to tangible assets at or above 1% over the next two years.

High dependence on market funding, mitigated by a solid deposit base and excellent access to local and international capital markets

The baa3 funding structure score balances DNB's high reliance on market funding - market funds to tangible banking assets ratio was 37.5% at the end of June 2025 (2024: 37.2%), with its continued strong access to the capital markets and increasing deposit volumes (see Exhibit 7). The bank's dependence on market funding — although common for Nordic banks — could be a source of risk because, in times of stress, market funds can become less cost-effective, exerting pressure on banks' net profitability.

Exhibit 7

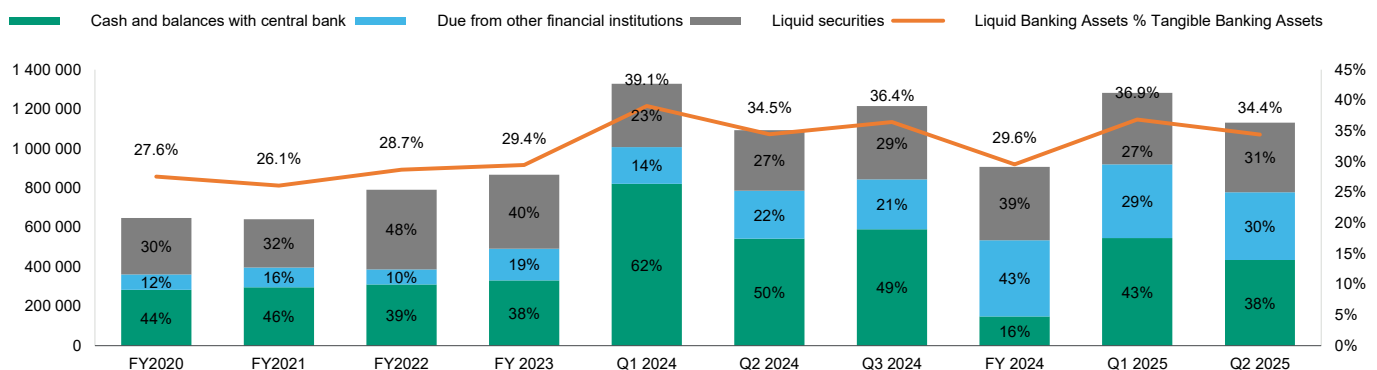
DNB's market funding is well-diversified

Source: Bank's reports and presentations, Moody's Ratings

Deposit growth slowed down in 2023 and 2024 due to stretched consumers and a reduction of excess savings amid tightening of monetary policies. That said, the Norwegian economy is likely to remain resilient, and DNB has large oil companies as customers whose deposits are boosted by the elevated demand for Norwegian oil and gas. We expect a modest uptick in SME and household deposit growth helped by an improving macro outlook and real wage increases, with overall deposit growth for DNB at around 2-4% per year over the next 12-18 months.

DNB has a well-diversified liquidity portfolio with around half of the portfolio comprising of cash while the remainder is split between highly liquid government, covered bonds and other debt securities (see Exhibit 8). Moody's preferred liquidity metric - adjusted liquid banking assets to tangible banking assets, remained stable over the past five years at above 25%. The stability and the strength of DNB's liquidity profile is reflected in the a2 liquidity score. The bank's reported liquidity coverage ratio (LCR) was 142% as of June 2025.

Exhibit 8

DNB's liquidity profile is well diversified

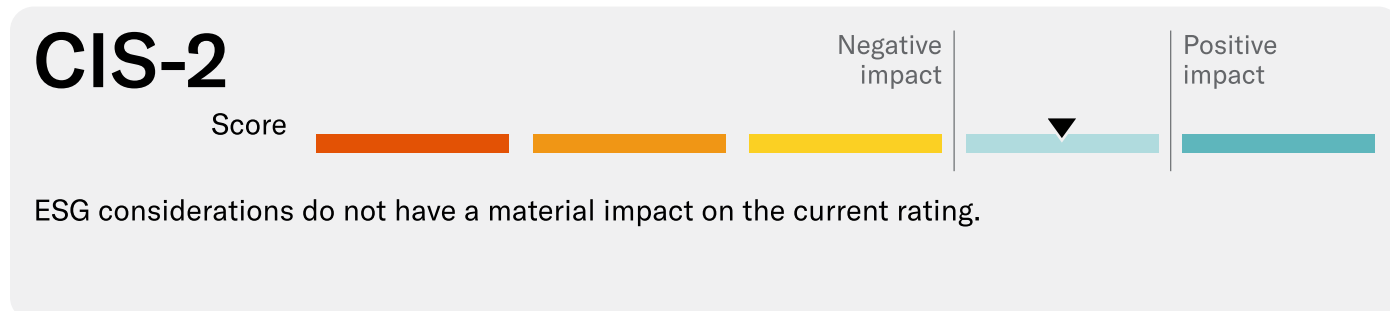
Source: Bank's reports and presentations, Moody's Ratings

ESG considerations

DNB Bank ASA's ESG credit impact score is CIS-2

Exhibit 9

ESG credit impact score

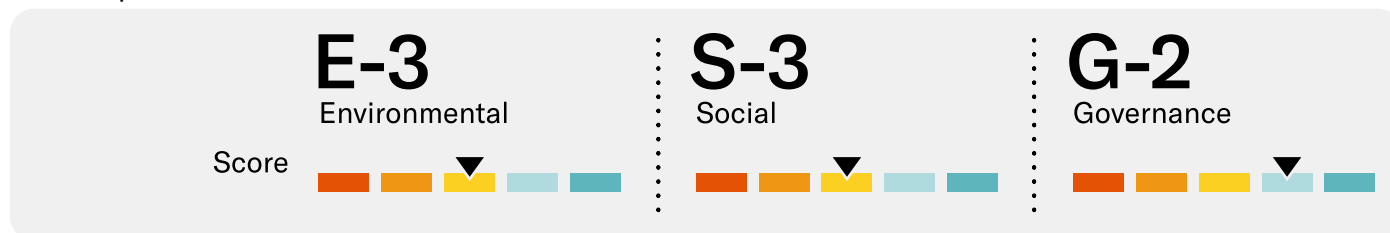


Source: Moody's Ratings

DNB Bank's **CIS-2** reflects that ESG considerations do not have a material impact on the current ratings.

Exhibit 10

ESG issuer profile scores



Source: Moody's Ratings

Environmental

DNB Bank faces moderate environmental risks primarily because of its portfolio exposure to carbon transition. The risks are primarily related to its corporate business segments, and in particular its oil, offshore and shipping business. In line with its peers, the bank is facing mounting business risks and stakeholder pressure to meet broader carbon transition goals. In response, the bank is developing its climate risk and portfolio management capabilities.

Social

DNB Bank faces moderate social risks related to regulatory and litigation risks, requiring high compliance standards. Following some initial challenges including high customer churn, the Sbanken portfolio is now successfully integrated onto DNB's technology platform. DNB Bank is a digitally advanced bank in Norway, with a robust IT infrastructure and strong capabilities to mitigate cyber and personal data risks.

Governance

DNB Bank's governance risks are low. The bank has a strong track record of risk management and has demonstrated a prudent risk appetite. Management has strong credibility and continuously delivers on targets. DNB is partly owned by the Government of Norway, which is considered a passive shareholder, but this does not result in incremental governance risks because of the country's developed institutional framework.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on [Moody's.com](https://www.moodys.com). In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Support and structural considerations

Loss Given Failure Analysis

Norway implemented the EU's Bank Recovery and Resolution Directive (BRRD) on 1 January 2019 and BRRD2 was implemented into Norwegian law 1 June 2022, which results in lower subordination requirements for non-preferred senior volumes. For our resolution analysis, we apply our advanced Loss Given Failure (LGF) analysis, using our standard assumptions for a bank operating in an operational resolution regime (ORR) country.

Our forward-looking LGF analysis incorporates our expectations that DNB will maintain the required volumes of loss-absorbing instruments, mainly in the form of senior non-preferred debt in response to the current MREL framework that has been set by the Norwegian FSA.

Government support

We assess that there is a moderate probability of government support in case of need, which translates into a one notch positive adjustment in the senior ratings of DNB. The bank has been designated by the regulator as a systemically important financial institution, and is currently 34% owned by the Norwegian Ministry of Trade and Industry. We expect the government to keep at least 34% ownership share in DNB to ensure that it remains headquartered in Norway.

For junior securities, we continue to believe that the probability of government support is low and that these ratings do not include any related uplift. Junior securities also include additional downward notching from the BCA reflecting coupon suspension risk ahead of a potential failure.

Source of facts and figures cited in this report

Unless noted otherwise, all figures shown in this report are sourced from the bank's latest annual and interim financial reports and our Banking Financial Metrics. These metrics are based on our own chart of account, and are adjusted for analytical purposes. Please refer to the document [Financial Statement Adjustments in the Analysis of Financial Institutions](#), published on 8 April 2024.

Methodology and scorecard

About Moody's bank scorecard

Our scorecard is designed to capture, express and explain in summary form our Rating Committee's judgement. When read in conjunction with our research, a fulsome presentation of our judgement is expressed. As a result, the output of our scorecard may materially differ from that suggested by raw data alone (though it has been calibrated to avoid the frequent need for strong divergence). The scorecard output and the individual scores are discussed in rating committees and may be adjusted up or down to reflect conditions specific to each rated entity.

Rating methodology and scorecard factors

Exhibit 11

Rating Factors

Macro Factors							
Weighted Macro Profile		Very Strong -	100%				
Factor		Historic Ratio	Initial Score	Expected Trend	Assigned Score	Key driver #1	Key driver #2
Solvency							
Asset Risk							
Problem Loans / Gross Loans		1.3%	aa2	↔	a3	Quality of assets	
Capital							
Tangible Common Equity / Risk Weighted Assets (Basel III - transitional phase-in)		20.5%	aa1	↔	aa2	Expected trend	Access to capital
Profitability							
Net Income / Tangible Assets		1.1%	a2	↔	a3	Expected trend	
Combined Solvency Score			aa2		a1		
Liquidity							
Funding Structure							
Market Funds / Tangible Banking Assets		37.2%	ba2	↑	baa3	Expected trend	
Liquid Resources							
Liquid Banking Assets / Tangible Banking Assets		29.6%	a2	↔	a2	Stock of liquid assets	Expected trend
Combined Liquidity Score			baa2		baa1		
Financial Profile			a1		a2		
Qualitative Adjustments					Adjustment		
Business Diversification					0		
Opacity and Complexity					0		
Corporate Behavior					0		
Total Qualitative Adjustments					0		
Sovereign or Affiliate constraint					Aaa		
BCA Scorecard-indicated Outcome - Range					a1 - a3		
Assigned BCA					a2		
Affiliate Support notching					0		
Adjusted BCA					a2		
Balance Sheet			in-scope (NOK Million)	% in-scope	at-failure (NOK Million)	% at-failure	
Other liabilities			1 371 053	41.7%	1 529 419	46.5%	
Deposits			1 552 606	47.2%	1 394 240	42.4%	
Preferred deposits			1 148 928	35.0%	1 091 482	33.2%	
Junior deposits			403 678	12.3%	302 758	9.2%	
Senior unsecured bank debt			81 649	2.5%	81 649	2.5%	
Junior senior unsecured bank debt			125 124	3.8%	125 124	3.8%	
Dated subordinated bank debt			35 909	1.1%	35 909	1.1%	
Preference shares (bank)			21 390	0.7%	21 390	0.7%	
Equity			98 590	3.0%	98 590	3.0%	
Total Tangible Banking Assets			3 286 321	100.0%	3 286 321	100.0%	

Debt Class	De Jure waterfall		De Facto waterfall		Notching		LGF	Assigned	Additional Notching	Preliminary Rating Assessment
	Instrument volume + ordination subordination	Sub-ordination	Instrument volume + ordination subordination	Sub-ordination	De Jure	De Facto	Notching Guidance vs. Adjusted BCA	LGF notching		
Counterparty Risk Rating	20.2%	20.2%	20.2%	20.2%	3	3	3	3	0	aa2
Counterparty Risk Assessment	20.2%	20.2%	20.2%	20.2%	3	3	3	3	0	aa2 (cr)
Deposits	20.2%	8.6%	20.2%	11.0%	3	3	3	3	0	aa2
Senior unsecured bank debt	20.2%	8.6%	11.0%	8.6%	3	1	2	2	0	aa3
Junior senior unsecured bank debt	8.6%	4.7%	8.6%	4.7%	0	0	0	0	0	a2
Dated subordinated bank debt	4.7%	3.7%	4.7%	3.7%	-1	-1	-1	-1	0	a3
Non-cumulative bank preference shares	3.7%	3.0%	3.7%	3.0%	-1	-1	-1	-1	-2	baa2

Instrument Class	Loss Given Failure notching	Additional notching	Preliminary Rating Assessment	Government Support notching	Local Currency Rating	Foreign Currency Rating
Counterparty Risk Rating	3	0	aa2	1	Aa1	Aa1
Counterparty Risk Assessment	3	0	aa2 (cr)	1	Aa1(cr)	
Deposits	3	0	aa2	1	Aa1	Aa1
Senior unsecured bank debt	2	0	aa3	1	Aa2	Aa2
Junior senior unsecured bank debt	0	0	a2	0	A2	A2
Dated subordinated bank debt	-1	0	a3	0		A3
Non-cumulative bank preference shares	-1	-2	baa2	0	Baa2 (hyb)	Baa2 (hyb)

[1] Where dashes are shown for a particular factor (or sub-factor), the score is based on non-public information.

Source: Moody's Ratings

Ratings

Exhibit 12

Category	Moody's Rating
DNB BANK ASA	
Outlook	Stable
Counterparty Risk Rating	Aa1/P-1
Bank Deposits	Aa1/P-1
Baseline Credit Assessment	a2
Adjusted Baseline Credit Assessment	a2
Counterparty Risk Assessment	Aa1(cr)/P-1(cr)
Senior Unsecured	Aa2
Junior Senior Unsecured	A2
Junior Senior Unsecured MTN	(P)A2
Subordinate	A3
Pref. Stock Non-cumulative	Baa2 (hyb)
Commercial Paper	P-1
Other Short Term	(P)P-1
DNB BANK ASA, NEW YORK BRANCH	
Outlook	Stable
Counterparty Risk Rating	Aa1/P-1
Bank Deposits	Aa1/P-1
Counterparty Risk Assessment	Aa1(cr)/P-1(cr)

Source: Moody's Ratings

Endnotes

- 1 Since this [buffer requirement](#) targets structural vulnerabilities and other systemic risks in the Norwegian economy, it should only apply to banks' exposures in Norway, in contrast to the previous systemic risk buffer requirement, which applies to all exposures.

© 2025 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 Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and all MCO entities that issue ratings under the "Moody's Ratings" brand name ("Moody's Ratings"), also maintain policies and procedures to address the independence of Moody's Ratings' 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 ir.moody.com under the heading "Investor Relations — Corporate Governance — Charter and Governance 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 and Net Zero Assessments (as defined in Moody's Ratings Rating Symbols and Definitions): Please note that neither a Second Party Opinion ("SPO") nor a Net Zero Assessment ("NZA") is a "credit rating". The issuance of SPOs and NZAs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs and NZAs 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.

REPORT NUMBER 1456689

CLIENT SERVICES

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