MOODY'S RATINGS

Financial Institutions

CREDIT OPINION

3 June 2025

Update

Send Your Feedback

RATINGS

Novo Banco, S.A.

Domicile	Lisboa, Portugal
Long Term CRR	A2
Type	LT Counterparty Risk Rating - Fgn Curr
Outlook	Not Assigned
Long Term Debt	Baa1
Type	Senior Unsecured - Dom Curr
Outlook	Positive
Long Term Deposit	A2
Type	LT Bank Deposits - Fgn Curr
Outlook	Positive

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

Maria Vinuela +34.91.768.8237
VP-Senior Analyst
maria.vinuela@moodys.com

Jorge Zavaleta +34.91.768.8376
Sr Ratings Associate
jorge.zavaleta@moodys.com

Maria Cabanyes +34.91.768.8214
Senior Vice President
maria.cabanyes@moodys.com

Riccardo Magnoni +33.1.5330.3431
Analyst
riccardo.magnoni@moodys.com

Novo Banco, S.A.

Update following rating upgrade, outlook remains positive

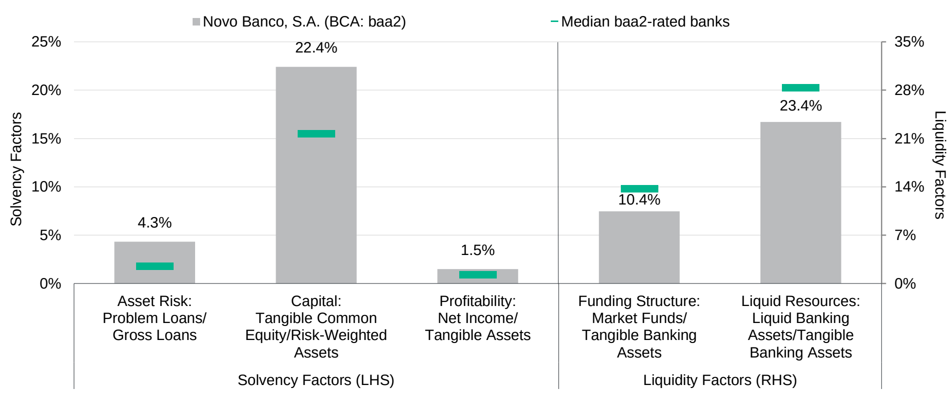
Summary

Novo Banco, S.A.'s (Novo Banco) long-term deposit ratings of A2 and long-term senior unsecured debt ratings of Baa1 reflect the bank's Baseline Credit Assessment (BCA) of baa2; the outcome of our Advanced Loss Given Failure (LGF) analysis, which results in a three-notch uplift for the deposit ratings and a one-notch uplift for the senior debt ratings; and our assumption of a low probability of government support, which results in no further rating uplift.

Novo Banco's BCA of baa2 reflects its significantly improved credit profile as a result of the successful completion of a restructuring plan agreed with the European Commission (EC). In particular, Novo Banco's BCA reflects its significantly improved asset quality metrics, albeit still weaker than system average; strong profitability metrics; and improved loss absorption capacity amid very high capital levels that will go down as the bank has resumed dividend payments. The BCA also reflects Novo Banco's improved funding and liquidity position.

Exhibit 1

Rating Scorecard - Key Financial ratios



Source: Moody's Financial Metrics

Credit strengths

- Significant reduction in nonperforming assets (NPA) over recent years
- Profitability metrics will remain strong over the outlook period
- Customer deposits are the bank's main source of funding
- Liquidity buffers have improved

Credit challenges

- Asset quality remains weaker than system average
- Capital levels will reduce as the bank has resumed dividend payments
- Higher-than-average share of credit-sensitive customers
- There is a risk that the largest shareholder, a private-equity firm, will prioritise high short-term returns over long-term stability

Outlook

The outlook on Novo Banco's long-term deposit and senior unsecured debt ratings remains positive, reflecting our view that the bank's BCA could be further upgraded if the improvements in its credit profile are sustained over the next 12 to 18 months in the context of uncertainties related to the exit strategy of its largest shareholder Lone Star.

Factors that could lead to an upgrade

An upgrade of Novo Banco's long-term deposit and senior unsecured debt ratings could be prompted by an upgrade of its BCA. The bank's BCA could be upgraded if recent improvements in its credit profile and the operating environment for Portuguese banks are sustained over the next 12 to 18 months.

The bank's senior unsecured debt ratings could also be upgraded in case the volume of senior unsecured debt and/or subordinated instruments were to increase without a significant increase in tangible banking assets.

Factors that could lead to a downgrade

Although unlikely given the positive outlook, Novo Banco's long-term deposit and senior unsecured debt ratings could be downgraded following a downgrade of the BCA. The bank's BCA could be downgraded if its financial profile weakens because of an erosion of its solvency, or if its combined liquidity profile were to deteriorate from the current levels.

Novo Banco's long-term deposit and senior unsecured debt ratings could also be downgraded should the bank's volume of loss-absorbing liabilities shrink or in case it expands its balance sheet more than we expect such that it increases the loss severity.

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.moodys.com for the most updated credit rating action information and rating history.

Key indicators

Exhibit 2
Novo Banco, S.A. (Consolidated Financials) [1]

	12-24[2]	12-23[2]	12-22[2]	12-21[2]	12-20[2]	CAGR/Avg.[3]
Total Assets (EUR Million)	42,413.0	43,500.8	45,995.0	44,618.5	44,395.6	(1.1)[4]
Total Assets (USD Million)	43,918.6	48,053.4	49,088.1	50,557.5	54,320.5	(5.2)[4]
Tangible Common Equity (EUR Million)	5,119.8	4,412.4	3,579.7	2,982.1	2,828.8	16.0[4]
Tangible Common Equity (USD Million)	5,301.5	4,874.2	3,820.5	3,379.1	3,461.2	11.2[4]
Problem Loans / Gross Loans (%)	3.3	4.3	5.3	6.9	9.7	5.9[5]
Tangible Common Equity / Risk Weighted Assets (%)	22.4	20.6	15.4	10.8	9.5	15.7[6]
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	14.5	20.6	29.2	40.4	55.2	32.0[5]
Net Interest Margin (%)	2.8	2.7	1.5	1.4	1.3	1.9[5]
PPI / Average RWA (%)	4.3	4.0	2.5	1.8	-0.4	2.4[6]
Net Income / Tangible Assets (%)	1.8	2.0	0.6	0.4	-3.0	0.4[5]
Cost / Income Ratio (%)	34.4	34.2	41.3	43.9	139.4	58.6[5]
Market Funds / Tangible Banking Assets (%)	10.4	18.4	25.2	27.4	25.6	21.4[5]
Liquid Banking Assets / Tangible Banking Assets (%)	23.4	26.5	29.3	30.6	25.7	27.1[5]
Gross Loans / Due to Customers (%)	86.5	89.1	88.9	90.3	95.6	90.1[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

With total assets of €43.9 billion as of the end of December 2024, Novo Banco, S.A. is Portugal's (A3 stable) fourth-largest bank. As of the end of December 2024, the bank had 290 branches plus 20 corporate centres and 4,195 employees.

On 9 December 2024, Novo Banco announced the early termination of its "contingent capital agreement" (CCA) ahead of its contractual maturity in December 2025. The end of this CCA, that was set up as part of the bank's sale process in 2017[1], marked the end of the its restructuring and cleared the path for a potential investment exit by Lone Star (Novo Banco's majority shareholder owning 75% of the bank's capital through its subsidiary Nani Holdings S.à r.l.). In February 2025, Novo Banco announced that it had received a formal indication from Nani Holdings S.à r.l, also communicated to the remaining shareholders (Portuguese Resolution Fund and the Portuguese State) to initiate a public offering ("IPO") of shares of the Bank expected to be implemented over the coming months.

The cancellation of the CCA also lifted the contractual dividend ban that was in place. As a result, Novo Banco announced on 5 May 2025 a capital reduction of €1.1 billion.

Detailed credit considerations

Asset quality has significantly improved, although it remains above the system average

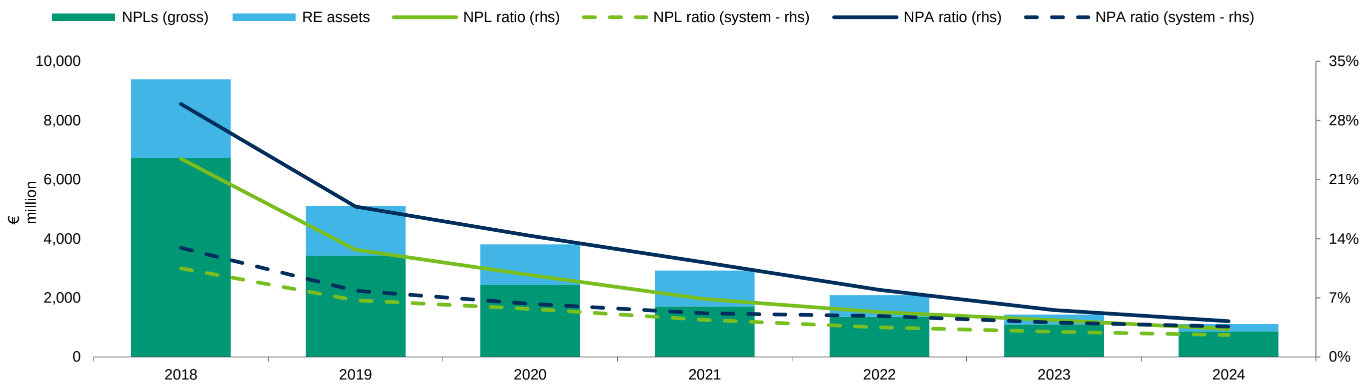
We assign Novo Banco an Asset Risk score of baa2 to reflect the bank's still-large stock of NPA (nonperforming loans [NPLs] + foreclosed real estate assets), despite a significant reduction over recent years, and our expectation that this stock of NPA will be broadly stable over the outlook period, as lower rates, higher real wages and slowing inflation support household and corporate finances.

Between 2018 and 2024, Novo Banco significantly reduced its stock of NPA principally by several large portfolio sales. As a result, the bank's NPL ratio has been gradually declining and stood at 3.3%[2] as of the end of December 2024, down from 4.3% a year earlier. We have estimated Novo Banco's NPA ratio at around 4.2% as of December 2024, below our estimated NPA ratio of 5.6% as of year-end 2023.

Although there is a significant reduction in Novo Banco's stock of NPA, the bank's asset-quality metrics still compare poorly with those of its domestic and European peers. The average NPL ratio for Portuguese banks was 2.6% as of the end of December 2024 and the EU average was 2.2%[3] as of the same date.

Exhibit 3

Novo Banco's asset-risk indicators have improved significantly over the last few years



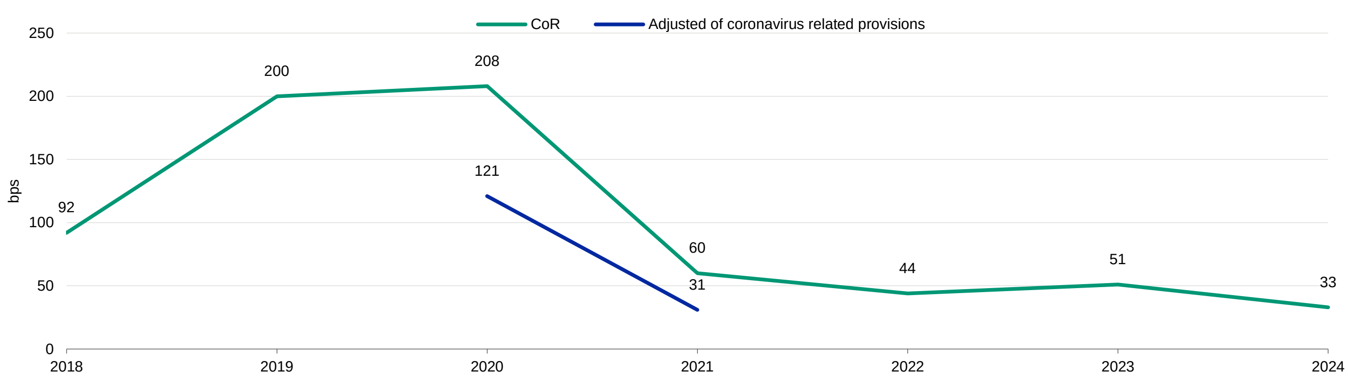
Sources: Moody's Ratings and Novo Banco

In 2024, cost of risk[4] was 33 basis points (bps), below the 51 bps reported as of year-end 2023[5] (see Exhibit 4). Going forward, Novo Banco expects normalised cost of risk levels around 20-30 bps per year.

Exhibit 4

Cost of risk trending towards more normalised levels

Loan loss provisions to gross loans



Sources: Moody's Ratings and Novo Banco

Novo Banco's coverage ratio (loan loss reserves as a percentage of NPLs) was 96.6% as of year-end 2024, up from 86.2% as of year-end 2023. The coverage of NPA was 77.5% as of the same date (71.4% as of year-end 2023).

High capital levels are returning to more normalised levels as the bank has resumed dividend payments

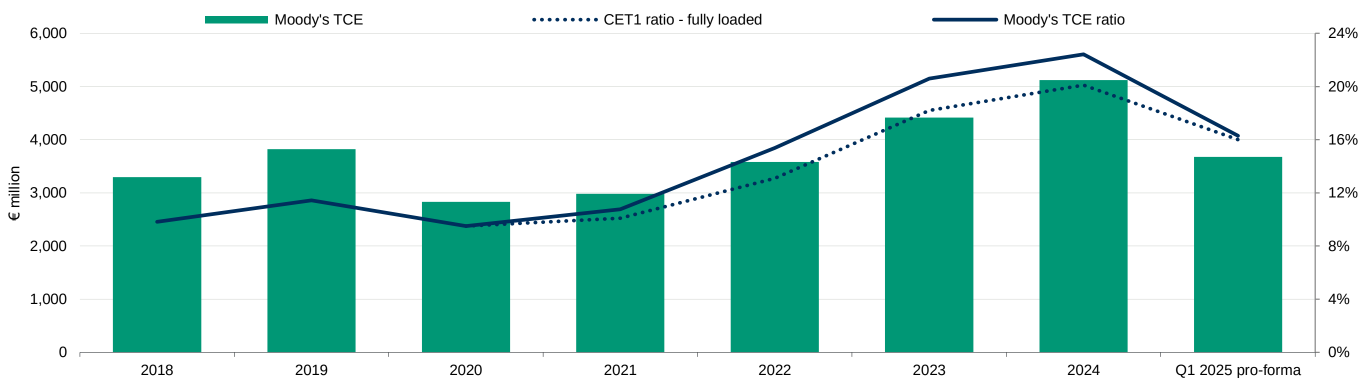
We assign an a3 Capital score to Novo Banco, four notches below the Macro-Adjusted score. We make this negative adjustment to reflect our expectation that Novo Banco's TCE ratio will decrease to more normalised levels of 13%-14% over time following the bank's resumption of dividend payments.

Novo Banco's capital metrics significantly improved in recent years because of the significant improvement in profitability coupled with the fact that the bank was subject to a dividend ban agreed under the CCA. Novo Banco reported a fully loaded CET1 ratio of 20.1% and a total capital ratio of 22.9% as of the end of December 2024, against the European Central Bank's (ECB) minimum requirements[6] of 10.1% and 14.7%, respectively. Following the early termination of the CCA in December 2024, the bank announced a capital reduction of €1.1 billion which, together with a payout ratio of 60% from H2 2024 onwards, has resulted in a significant CET1 reduction to a pro-forma ratio of 16.0% as of end-March 2025. We expect capital to reduce further as the bank approaches its internal medium-term CET1 ratio target of 13%-13.5%.

The bank's TCE/risk-weighted assets (RWA) was 22.4% as of December 2024, up from 20.6% as of the end of December 2023. This improvement is primarily attributable to the incorporation of the net income for the period. The bank's pro-forma TCE ratio as of end-March 2025 stood at around 16.3%.

Exhibit 5

High capital levels are returning to more normalised levels as the bank has resumed dividend payments



Sources: Moody's Ratings and Novo Banco

Profitability metrics will remain strong over the outlook period

We assign a Profitability score of a3 to Novo Banco. This reflects Novo Banco's strong profitability metrics, as well as our expectation that profitability will remain broadly stable over the outlook period, as the negative impact of lower interest rates on the bank's net interest income will be compensated by volume growth and increased fees and commissions, as well as by the bank's active interest rate hedging strategy.

Novo Banco reported a net profit of €750 million in 2024, in line with that a year earlier and equivalent to net income/tangible assets of 1.8%. Novo Banco's reported pre-provision income (PPI) increased by 10% year over year, mainly driven by the 3% increase in net interest income, coupled with an 9% increase in fees, which more than offset the 4% increase in operating cost.

The bank's efficiency levels remained broadly stable as a result of contained costs balanced with a sustained top-line performance. The bank reported a cost-to-income ratio of 33%[7] for 2024, aligned with that of the year-earlier period.

Customer deposits are the bank's main source of funding

Novo Banco's market funds/tangible banking assets was 10.4% as of December 2024, equivalent to a Funding Structure score of a3. We assign a Funding Structure score of baa2 to reflect the bank's higher-than-average share of credit-sensitive customers which leads to a lower proportion of insured deposits than the average for domestic peers.

Novo Banco is mainly deposit funded, with customer deposits representing around 85% of the bank's total funding. Out of the total amount of customer deposits, 72% are retail deposits. The bank's loan-to-deposit ratio was 87% as of December 2024, broadly in line with 89% as of December 2023.

Market funding as of December 2024 included €1.3 billion of market repos that accounted for 30% of market funds, substantially down from €5.2 billion or 65% of market funds a year earlier but still high. However, we note that the bank has issued €500 million covered bonds in January 2025 and €500 million in May 2025, which will allow it to further reduce the repo activity to more normalized levels.

Novo Banco has a final MREL requirement of 27.1% of its total risk exposure amount, which needs to be fulfilled from January 2025. After the recent issuances, the bank reached an MREL ratio of 30.8% as of December 2024, although it decreased to a pro-forma 29.2% as of March 2025 after the bank's €1.1 billion capital reduction.

The bank's Macro-Adjusted Liquid Resources score is baa2, to which we made a negative adjustment of one notch to baa3, to reflect the encumbrance of some of the liquid assets that are not readily available for the bank.

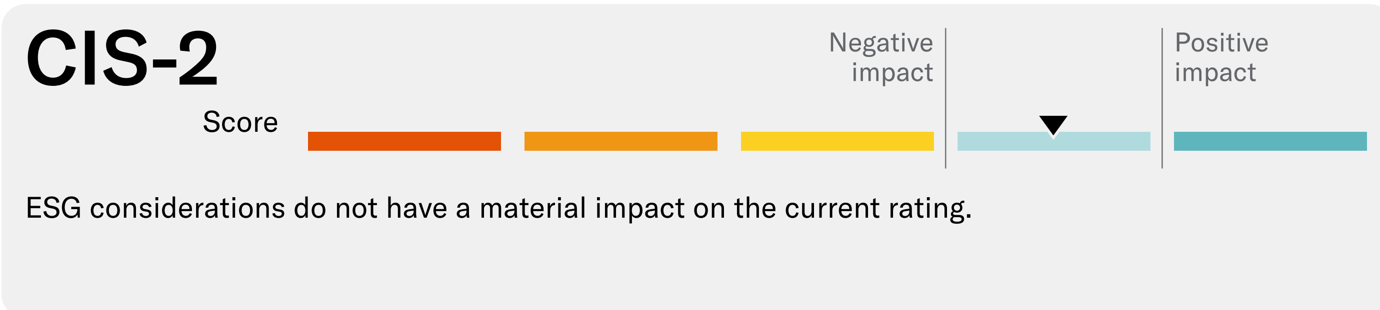
Novo Banco had a buffer of ECB-eligible liquid assets mainly in the form of sovereign bonds amounting €16.9 billion (net of haircuts) as of the end of December 2024, up €3.3 billion from year-end 2023, and including €1.2 billion in cash.

The bank reported a liquidity coverage ratio of 164% as of December 2024, compared with 163% by year-end 2023. The net stable funding ratio was 117% as of December 2024.

ESG considerations

Novo Banco, S.A.'s ESG credit impact score is CIS-2

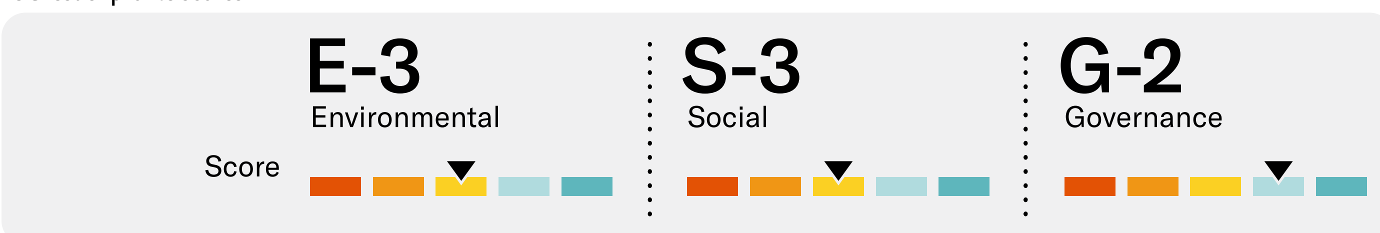
Exhibit 6
ESG credit impact score



Source: Moody's Ratings

Novo Banco's **CIS-2** indicates that ESG considerations do not have a material impact on the current rating.

Exhibit 7
ESG issuer profile scores



Source: Moody's Ratings

Environmental

Novo Banco faces moderate environmental risks primarily because of its portfolio exposure to carbon transition risk as a diversified bank. In line with its peers, the bank is exposed to mounting business risks and stakeholder pressure to meet broader carbon transition goals. In response, Novo Banco is developing its climate risk and portfolio management capabilities and is actively transitioning its lending portfolios to achieve carbon neutrality targets.

Social

Novo Banco is exposed to moderate industrywide social risks particularly related to customer relations risk and associated regulatory and litigation risks, requiring high compliance standards. These risks are mitigated by Novo Banco's developed policies and procedures. Novo Banco's high cyber and personal data risks are mitigated by the bank's sound IT framework.

Governance

Novo Banco's governance risks are low. The successful completion of restructuring program agreed with the European Commission has led to a risk management framework and corporate governance practices in line with industry practices. In recent years, the bank has been able to meet its strategic and financial targets. Novo Banco is controlled by Lone Star, which owns 75% of its capital. Therefore, the bank is exposed to potential outside influence by the controlling shareholder on the bank's management and board. The risk is however mitigated by the presence of independent directors which are majority in the board and Portugal's developed institutional framework.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on 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

Novo Banco is subject to the EU Bank Recovery and Resolution Directive, which we consider an operational resolution regime. Thus, we apply our advanced LGF analysis, using our standard assumptions. We assign a 26% proportion of junior deposits over total deposits. We also take into account full depositor preference, whereby junior deposits are preferred over senior debt creditors in accordance with the law that was passed by the Portuguese government in March 2019.

For Novo Banco's deposits, senior unsecured debt and junior senior unsecured debt, our LGF analysis reflects the likely impact on loss given failure of the combination of its own volume and subordination. Our LGF analysis indicates an extremely low loss given failure for deposits, low loss given failure for senior unsecured debt and moderate loss given failure for junior senior unsecured debt, which leads us to position these preliminary rating assessments three notches above, one notch above and in line with the Adjusted BCA, respectively. Novo Banco's LGF analysis takes into account the bank's issuance of a €500 million senior preferred bond in January 2025.

For junior securities, our LGF analysis confirms a high level of loss given failure, given the small volume of debt and limited protection from more subordinated instruments and residual equity.

Government support

We assign a low probability of government support to Novo Banco's ratings, which results in no uplift for the deposit and senior debt ratings.

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 8

Rating Factors

Macro Factors		
Weighted Macro Profile	**Strong**	**100%**

Factor	Historic Ratio	Initial Score	Expected Trend	Assigned Score	Key driver #1	Key driver #2
Solvency						
Asset Risk						
Problem Loans / Gross Loans	4.3%	baa2	↔	baa2	Quality of assets	Expected trend
Capital						
Tangible Common Equity / Risk Weighted Assets (Basel III - fully loaded)	22.4%	aa2	↓↓	a3	Expected trend	
Profitability						
Net Income / Tangible Assets	1.5%	a3	↔	a3	Expected trend	
Combined Solvency Score		a2		baa1		
Liquidity						
Funding Structure						
Market Funds / Tangible Banking Assets	10.4%	a3	↔	baa2	Deposit quality	
Liquid Resources						
Liquid Banking Assets / Tangible Banking Assets	23.4%	baa2	↔	baa3	Asset encumbrance	
Combined Liquidity Score		baa1		baa2		
Financial Profile		a3		baa1		
Qualitative Adjustments				Adjustment		
Business Diversification				0		
Opacity and Complexity				0		
Corporate Behavior				0		
Total Qualitative Adjustments				0		
Sovereign or Affiliate constraint				A3		
BCA Scorecard-indicated Outcome - Range				a3 - baa2		
Assigned BCA				baa2		
Affiliate Support notching				0		
Adjusted BCA				baa2		

Balance Sheet	**in-scope (EUR Million)**	**% in-scope**	**at-failure (EUR Million)**	**% at-failure**
Other liabilities	7,832	18.5%	10,395	24.6%
Deposits	30,033	71.0%	26,970	63.8%
Preferred deposits	22,225	52.5%	21,113	49.9%
Junior deposits	7,809	18.5%	5,856	13.8%
Senior unsecured bank debt	2,666	6.3%	3,166	7.5%
Dated subordinated bank debt	500	1.2%	500	1.2%
Equity	1,269	3.0%	1,269	3.0%
Total Tangible Banking Assets	42,300	100.0%	42,300	100.0%

Debt Class	De Jure waterfall		De Facto waterfall		Notching		LGF Notching Guidance vs. Adjusted BCA	Assigned LGF notching	Additional Notching	Preliminary Rating Assessment
	Instrument volume + subordination	Sub-ordination	Instrument volume + subordination	Sub-ordination	De Jure	De Facto				
Counterparty Risk Rating	25.5%	25.5%	25.5%	25.5%	3	3	3	3	0	a2
Counterparty Risk Assessment	25.5%	25.5%	25.5%	25.5%	3	3	3	3	0	a2 (cr)
Deposits	25.5%	4.2%	25.5%	11.7%	2	3	3	3	0	a2
Senior unsecured bank debt	25.5%	4.2%	11.7%	4.2%	2	1	1	1	0	baa1
Junior senior unsecured bank debt	4.2%	4.2%	4.2%	4.2%	0	0	0	0	0	baa2
Dated subordinated bank debt	4.2%	3.0%	4.2%	3.0%	-1	-1	-1	-1	0	baa3

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	a2	0	A2	A2
Counterparty Risk Assessment	3	0	a2 (cr)	0	A2(cr)	
Deposits	3	0	a2	0	A2	A2
Senior unsecured bank debt	1	0	baa1	0	Baa1	(P)Baa1
Junior senior unsecured bank debt	0	0	baa2	0	(P)Baa2	(P)Baa2
Dated subordinated bank debt	-1	0	baa3	0	Baa3	(P)Baa3

[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 9

Category	Moody's Rating
NOVO BANCO, S.A.	
Outlook	Positive
Counterparty Risk Rating	A2/P-1
Bank Deposits	A2/P-1
Baseline Credit Assessment	baa2
Adjusted Baseline Credit Assessment	baa2
Counterparty Risk Assessment	A2(cr)/P-1(cr)
Senior Unsecured -Dom Curr	Baa1
Junior Senior Unsecured MTN	(P)Baa2
Subordinate -Dom Curr	Baa3
Commercial Paper -Dom Curr	P-2
NOVO BANCO S.A., LUXEMBOURG BRANCH	
Outlook	Positive
Counterparty Risk Rating	A2/P-1
Bank Deposits	A2/P-1
Counterparty Risk Assessment	A2(cr)/P-1(cr)
Senior Unsecured -Dom Curr	Baa1
NB FINANCE LTD.	
Outlook	Positive
Bkd Senior Unsecured	Baa1

Source: Moody's Ratings

Endnotes

1 The sale process of Novo Banco was closed on 18 October 2017, after Lone Star (through its subsidiary Nani Holdings S.à r.l.) acquired a 75% stake in Novo Banco's capital, becoming its majority shareholder. As part of Novo Banco's sale process a "contingent capital agreement" (CCA) was set up and managed by the Resolution Fund. Under this mechanism, Novo Banco could be compensated up to a limit of €3.89 billion for losses related to a predefined portfolio of problematic assets, subject to the breach of a capital ratio trigger (Common Equity Tier 1 [CET1] capital ratio below 12%) and some additional requirements.

2 Per our criteria.

3 Source: European Banking Authority's Risk Dashboard.

4 Measured as loan loss provisions/gross loans.

5 Including management overlays.

6 Including the introduction of a 0.5% Other Systemically Important Institutions (O-SII) buffer of which 50% is applicable from 1 July 2024 (100% applicable from 1 July 2025), a 0.3% buffer related to exposures secured by residential real estate (applicable from 1 October 2024) and a 0.75% countercyclical buffer in Portugal (applicable from 1 January 2026).

7 Excluding markets and other operating results.

© 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.moodys.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 Calificadora 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 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 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 1446651

CLIENT SERVICES

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