

CREDIT OPINION

19 May 2025

Update

Send Your Feedback

RATINGS

Housing Bank for Trade and Finance (The)

Domicile	Amman, Jordan
Long Term CRR	Ba2
Type	LT Counterparty Risk Rating - Fgn Curr
Outlook	Not Assigned
Long Term Debt	Not Assigned
Long Term Deposit	Ba3
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

Christos Theofilou, +357.2569.3004
CFA
VP-Senior Analyst
christos.theofilou@moodys.com

George Kattos +357.2569.3043
Sr Ratings Associate
george.kattos@moodys.com

Nitish Bhojnarwala +971.4.237.9563
Associate Managing Director
nitish.bhojnarwala@moodys.com

CLIENT SERVICES

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

Housing Bank for Trade and Finance (The)

Update to credit analysis

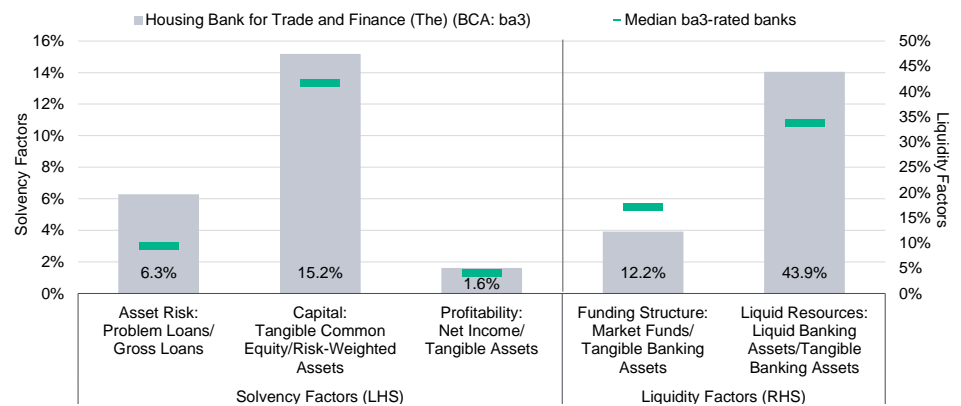
Summary

[Housing Bank for Trade and Finance \(The\)](#)'s (HBTF) Ba3 deposit ratings are derived from the bank's ba3 Baseline Credit Assessment (BCA), which is at the same level as [Jordan](#)'s Ba3 sovereign rating.

HBTF's ba3 BCA incorporates its strong capital base, with a tangible common equity (TCE) at 15.2% of our adjusted risk-weighted assets as of December 2024; strong liquidity, with liquid assets at 44% of assets as of end December 2024; a robust retail deposit-funded profile; and solid profitability.

At the same time, the BCA captures elevated asset-quality risks, with a high level of problem loans and high borrower concentrations, while geopolitical risks also remain high in the region.

Exhibit 1
Rating Scorecard - Key financial ratios



These metrics represent our Banks rating methodology scorecard ratios, whereby asset-risk and profitability ratios are the weaker of either the latest reported or the average of the latest reported and the latest three full-year ratios. The capital ratio is the latest reported, and the funding structure and liquid resources ratios are latest year-end figures.

Source: Moody's Ratings

Credit strengths

- » Strong capital base
- » Robust retail-deposit funding and strong liquidity
- » Solid profitability

Credit challenges

- » Elevated asset-quality risk, partly due to high borrower concentrations, and elevated regional geopolitical risks

Outlook

The outlook on HBTF's long-term deposit ratings remains stable, which is in line with the stable outlook on the sovereign. The outlook balances our expectations that the bank will maintain high capitalisation and liquidity buffers, and a solid loan loss provisioning coverage, against the elevated geopolitical and asset-quality risks.

Factors that could lead to an upgrade

Any upward rating pressure on HBTF's deposit ratings would need to be preceded by an upgrade in the Jordanian sovereign rating. Positive rating pressure could further result from a substantial improvement in the operating environments where the bank is present, a sustained improvement in asset quality metrics and progress with the bank's digital transformation journey.

Factors that could lead to a downgrade

A deterioration in Jordan's sovereign creditworthiness would likely lead to a downgrade. Our assessment of a high likelihood of government support is likely to mitigate the impact on the deposit ratings of a lower standalone credit assessment.

HBTF's standalone credit assessment may be lowered if there is an escalation in the regional conflict or if we assess that there is a weakening in the operating environments where the bank is present or if we expect that its financial metrics will materially weaken.

Key indicators

Exhibit 2

Housing Bank for Trade and Finance (The) (Consolidated Financials) [1]

	12-24 ²	12-23 ²	12-22 ²	12-21 ²	12-20 ²	CAGR/Avg. ³
Total Assets (JOD Million)	9,226.7	8,676.9	8,458.6	8,245.3	8,306.0	2.7 ⁴
Total Assets (USD Million)	13,011.9	12,220.1	11,912.7	11,629.5	11,715.2	2.7 ⁴
Tangible Common Equity (JOD Million)	1,318.6	1,251.1	1,179.5	1,121.5	1,072.1	5.3 ⁴
Tangible Common Equity (USD Million)	1,859.5	1,761.9	1,661.1	1,581.8	1,512.2	5.3 ⁴
Problem Loans / Gross Loans (%)	6.3	5.5	5.1	6.1	7.2	6.0 ⁵
Tangible Common Equity / Risk Weighted Assets (%)	15.2	15.1	15.3	14.0	14.1	14.7 ⁶
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	17.7	15.9	14.9	17.2	21.6	17.4 ⁵
Net Interest Margin (%)	4.2	4.4	3.8	3.6	3.7	4.0 ⁵
PPI / Average RWA (%)	3.0	3.2	2.6	2.6	2.7	2.8 ⁶
Net Income / Tangible Assets (%)	1.6	1.6	1.6	1.3	0.5	1.3 ⁵
Cost / Income Ratio (%)	42.5	42.1	45.9	43.8	43.4	43.5 ⁵
Market Funds / Tangible Banking Assets (%)	12.2	11.7	15.1	14.7	13.2	13.4 ⁵
Liquid Banking Assets / Tangible Banking Assets (%)	43.9	41.9	41.4	43.9	42.6	42.8 ⁵
Gross Loans / Due to Customers (%)	78.6	82.8	84.1	80.2	79.6	81.1 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

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

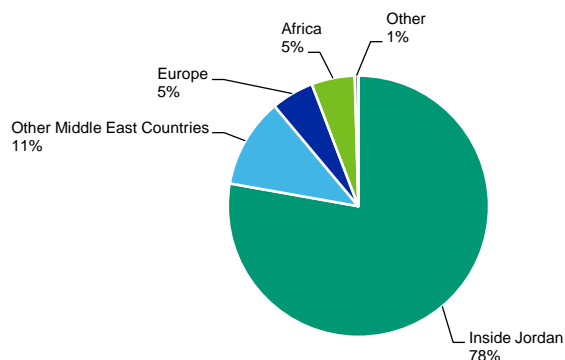
Profile

HBTF the second-largest bank in Jordan with a market share of 12% as of March 2025. The bank is a leader in mortgage lending and has the country's largest branch network with 104 branches. The bank's shares are listed on the Amman Stock Exchange, with [Qatar National Bank \(Q.P.S.C.\)](#) (QNB, Aa3 stable, baa1¹) as its largest shareholder with a 38.6% stake as of December 2024.

The concentration of HBTF's activities in Jordan (see Exhibit 3) leads us to use Jordan's [Weak+](#) Macro Profile score to derive the bank's ratings. Internationally, HBTF operates through 16 foreign branches in Bahrain (1) and Palestine (15); and 35 subsidiary bank branches in Syria (24), Algeria (10) and the UK (1); and representative offices in Libya and the UAE.

Exhibit 3

The majority of HBTF's credit exposures are in Jordan Breakdown in net Credit Facilities as of December 2024



Source: Bank's financial statements

For further information see the bank's [issuer profile](#), published on 13 May 2024.

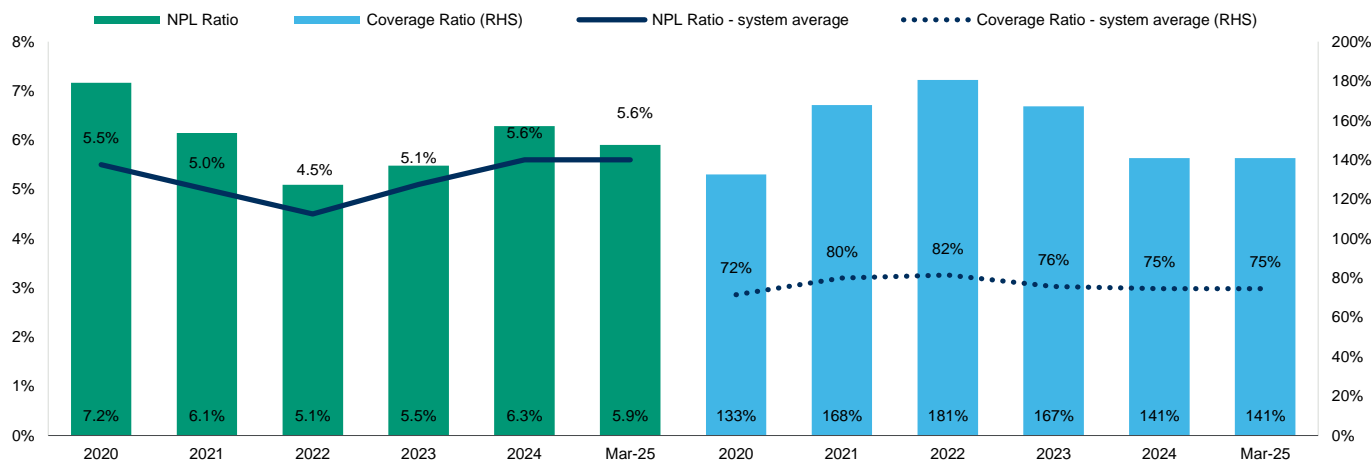
Detailed credit considerations

Elevated asset-quality risk, partly due to high borrower concentrations

HBTF's asset risks remain elevated given high problem loans and residual risks posed by foreclosed property. As of March 2025, the bank's problem loans²/gross loans were at 5.9%, down from 6.3% as of year-end 2024, yet up from 5.5% as of year-end 2023 (see Exhibit 4). Stage 2 loans were a moderate 7.4% of gross loans as of year-end 2024. Nonperforming assets (including its foreclosed assets) were 9% of gross loans and foreclosed assets, which indicates elevated residual asset risks. Positively, HBTF maintained a high loan-loss provisioning coverage of 141% as of March 2025.

Exhibit 4

HBTF's asset-quality metrics remain weak



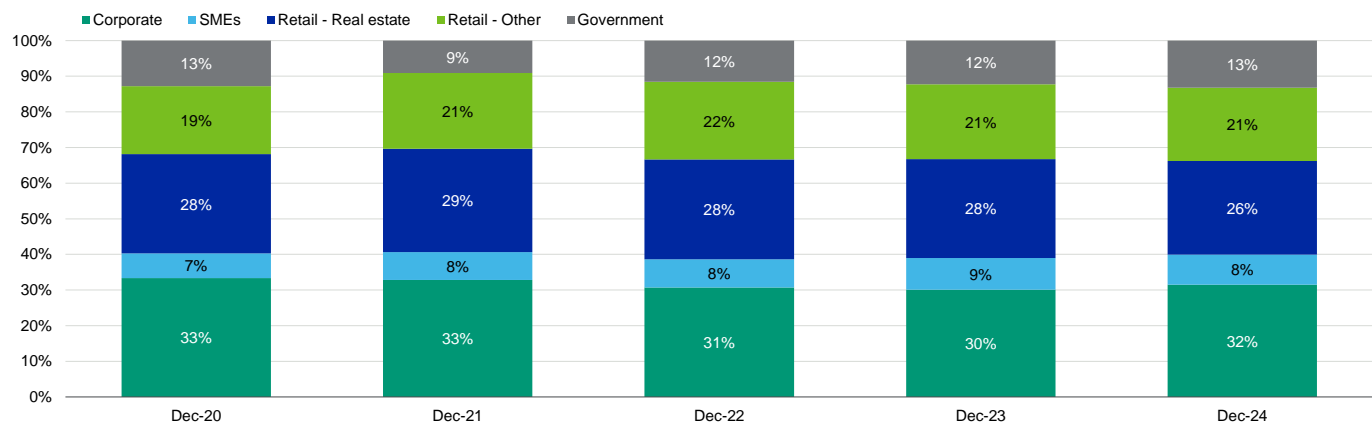
The March 2025 system averages shown correspond to December 2024
 Source: Bank's financial statements, Central Bank of Jordan data and Moody's Ratings

HBTF's loan book is skewed towards retail loans, including real estate mortgages, while it also holds a large exposure to government loans (see Exhibit 5). The retail segment has seen lower provisions because it predominantly consists of salary-assigned lending, primarily to government employees.

Exhibit 5

A higher-than-average percentage of retail mortgages and government-related loans

Loan-book breakdown by segment evolution



Source: Bank's financial statements and Moody's Ratings

Asset-quality risks also reflect HBTF's high credit concentrations. We adjust the bank's Asset Risk score to take into account high credit concentrations in the corporate book (top 20 on- and off-balance-sheet exposures were above 1x its Common Equity Tier 1 [CET1] capital as of the end of June 2024). Concurrently, the bank's sovereign debt holdings, including government-guaranteed bonds, and lending to government and public-sector entities, were 2.4x the bank's TCE as of December 2024. We expect HBTF to maintain its exposure to the Jordanian sovereign because of a limitation on other available lending opportunities.

Geopolitical risks remain high in the region. The hostilities between [Israel](#) (Baa1 negative) and Hamas are a near-term risk both because of the bank's exposures in Palestine, primarily the West Bank which we estimate around 6% of total loans, but also because of Jordan's proximity to the conflict. However, we expect the impact to be manageable if the conflict remains contained between Israel and Hamas.

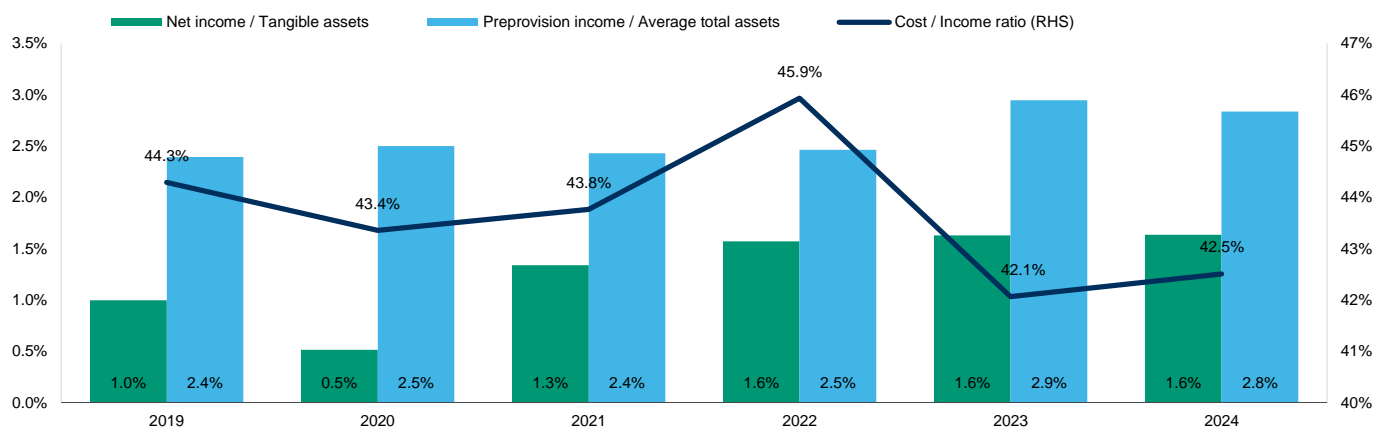
Our asset risk score also captures the recent asset quality trends and the higher historical volatility in asset quality metrics, compared to higher rated peers.

Solid profitability expected to remain stable

During 2024, pre-provision income to average total assets decreased slightly to 2.8% of average assets (2.9% in 2023), as shown in Exhibit 6. The bank's net income-to-tangible assets ratio remained stable at 1.6% during 2024 (1.6% in 2023), amid lower loan loss provisions of JOD20.0 million (0.4% of gross loans) given the bank's already high loan loss coverage levels, from a high JOD35.2 million in 2023. As per the bank's presentation profitability metrics remained broadly stable during the first quarter of 2025.

Exhibit 6

Profitability metrics remain solid



Source: Bank's financial statements and Moody's Ratings

The bank's efficiency metrics remained relatively stable with cost to income ratio for 2024 being a fairly low 42.5% (2023: 42.1%), despite operating expenses to total assets at a fairly high 2.0%. Non-interest income however remains fairly low contributing just 0.7% of assets, or 35% of operating expenses.

Going forward, we expect profitability to remain broadly stable in spite of lower interest rates, as the bank continues to focus more on the underserved SME segment, and the high-net-worth and younger individuals segment to expand its client base while strengthening its auxiliary services, like trade finance and cash management, to strengthen its non-interest income. Despite higher costs in short-term, HBTF's longer-term profitability will also be supported by its digital transformation journey to strengthen its service and product offering as well as efficiency, and the ongoing launch of various digital and electronic channels.

Strong capital levels

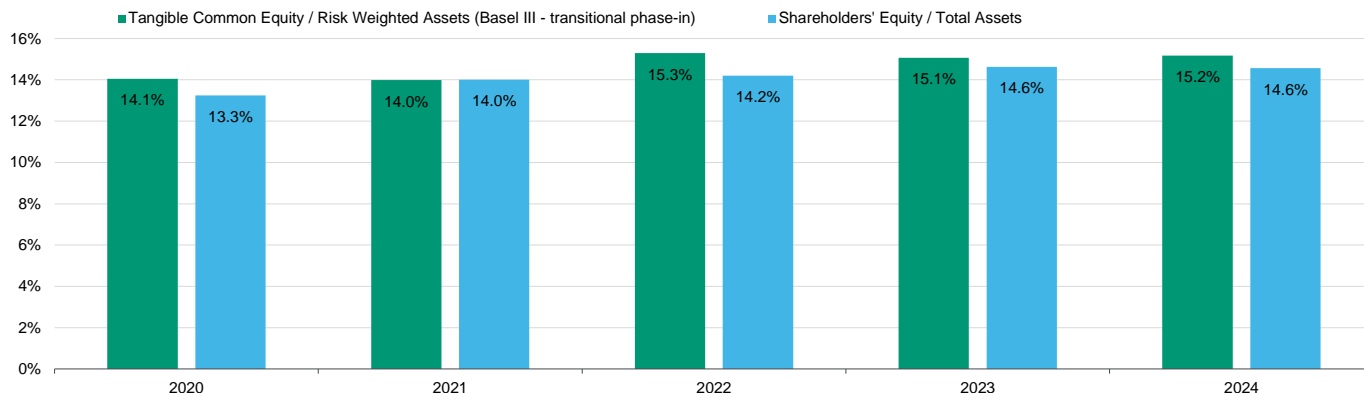
We expect HBTF's capital ratios to remain strong supported by the bank's internal capital generation and prudent approach to capital. As of December 2024, the bank reported a Basel III CET1 ratio of 17.4%, above the 8.5% regulatory minimum, and a total capital adequacy ratio of 18.6% (18.3% by March 2025), above the 14.5% regulatory minimum (including a 2% buffer for banks with offshore operations and a 0.5% domestically systemically important bank add-on) and its own internal buffer.

The bank's shareholder's equity was a strong 14.6% of total assets and its tangible common equity was 15.2% of our adjusted risk-weighted assets as of December 2024 as shown in Exhibit 7, whereby we risk-weight Jordanian government securities by 100%³.

While low by global peers, the bank has a higher risk-weighted assets density compared to other domestic banks despite its mortgage focus, with RWAs/Total assets of 67% as of year-end 2024, a reflection of the conservative regulatory risk weights in Jordan with most of its mortgages having a 100% risk-weight due to their higher loan-to-values.

Exhibit 7

HBTF maintains strong capital levels



Source: Bank's financial statements and Moody's Ratings

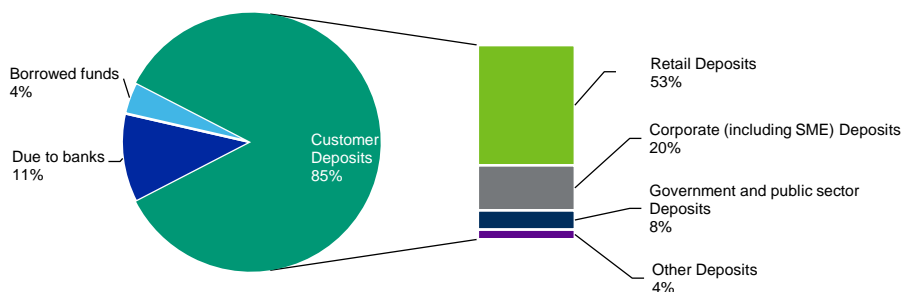
Given the operating environment risks and relatively high credit concentrations, high capitalisation levels are warranted to absorb any unforeseen losses. In the event of need, a potential capital increase may be facilitated by the bank's strong shareholders, including Qatar's largest bank QNB.

Robust retail-deposit funded profile and strong liquidity levels

HBTF's conservative balance-sheet structure places an emphasis on liquidity protecting against operating environment risks. HBTF's balance sheet is primarily retail deposit funded, supported by an extensive branch network and its leading mortgage lending franchise. As of December 2024, granular retail deposits accounted for 62% of customer deposits and 53% of total funding (see Exhibit 8). The bank also has 52% of its customer deposits in the form of low-cost current account and savings deposits.

Exhibit 8

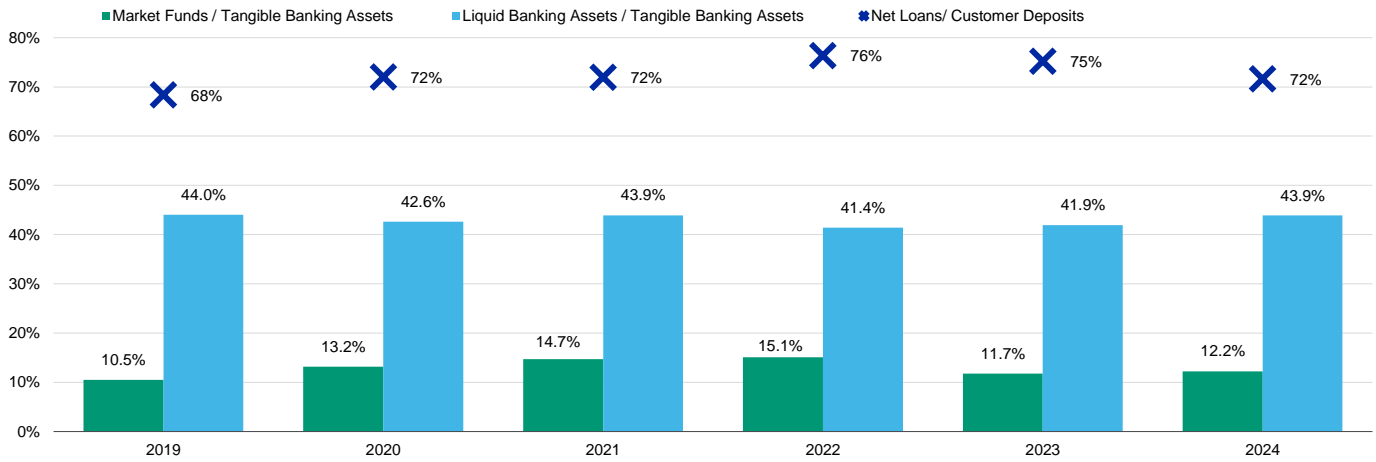
Retail deposits dominate HBTF's funding structure
Breakdown of non-equity funding as of December 2024



Source: Bank's financial statements and Moody's Ratings

As of December 2024, the bank's liquid assets-to-tangible banking assets ratio was at a high 43.9% as shown in Exhibit 9. Cash and interbank placements accounted for 12.7% of total assets, and the majority of the remaining liquid assets were held in government securities. Net loans were at a fairly low 72% of customer deposits as of the same date, although they have been coming up gradually.

Exhibit 9
HBTF maintains a fairly low loans to deposit ratio, and high liquid assets



Source: Bank's financial statements and Moody's Ratings

The bank's market funding reliance is limited and, as of December 2024, was 12% of tangible banking assets. The bank's major source of long-term funding is Jordan Mortgage Refinancing Company with a total facility of JOD90 million, which the bank uses to fund its long-term mortgage lending portfolio.

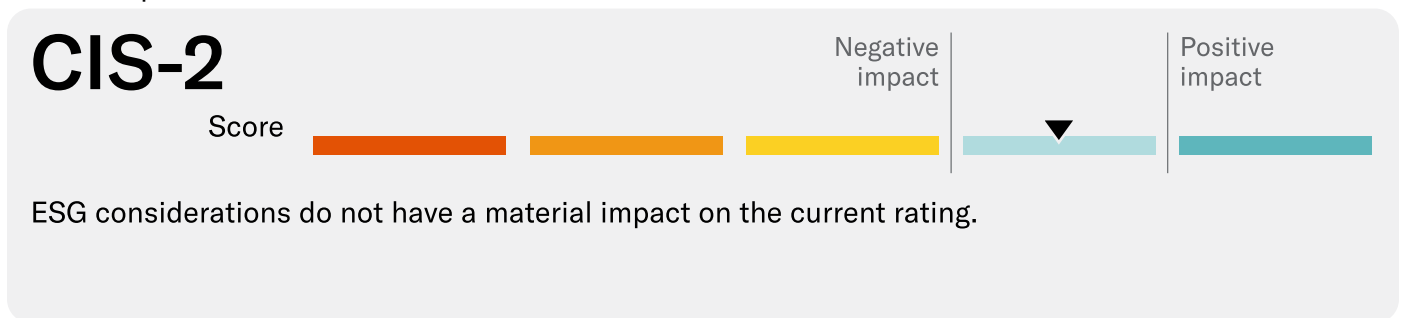
While we view funding and liquidity as a credit strength for the bank, we negatively adjust our scorecard ratios to capture some contractual asset-liability maturity mismatches, due to a lack of other long-term funding options in the market, and the fact that there is no secondary market for Jordanian government securities, despite local-currency securities being repo-able with the central bank.

Overall, our assigned BCA of ba3 is in line with both the bank's scorecard financial profile score and our scorecard-indicated outcome.

ESG considerations

Housing Bank for Trade and Finance (The)'s ESG credit impact score is CIS-2

Exhibit 10
ESG credit impact score

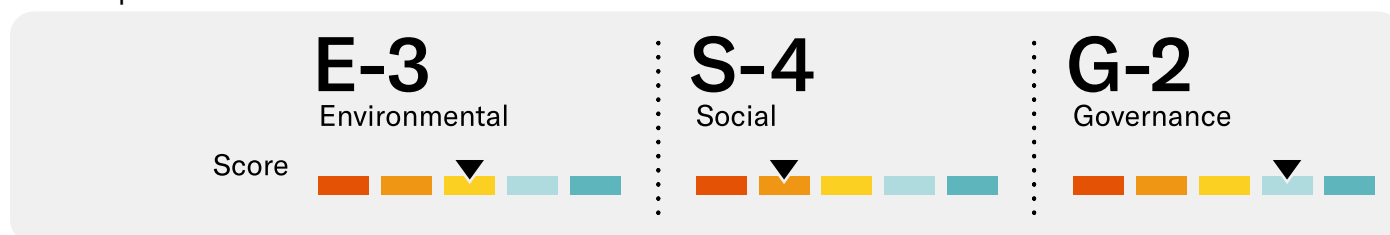


Source: Moody's Ratings

HBTF's **CIS-2** indicates that ESG considerations do not have a material impact on the current rating as moderate environment risks and high social risks are mitigated by the bank's solid governance structure.

Exhibit 11

ESG issuer profile scores



Source: Moody's Ratings

Environmental

HBTF faces moderate environmental risks reflecting its portfolio exposure to physical climate risks and Jordan's water management challenges. In line with global peers, HBTF is facing mounting business risks and stakeholder pressure to meet broader carbon transition goals. In response, the bank is engaging in developing its climate risk and portfolio management capabilities.

Social

HBTF faces high social risks related to regulatory risk, litigation exposure, and high compliance standards. Data security and customer privacy risk are also high, partly mitigated by sizeable technology investments and banks' long track record of handling sensitive client data. Fines and reputational damage because of product mis-selling or other types of misconduct are a further social risk. While a relatively young and growing regional population affords business opportunities for the bank, this is outweighed by potential social unrest in countries with high unemployment rates or in countries affected by geopolitical issues.

Governance

HBTF has an appropriate risk function and board structure with effective oversight. The bank has consistently maintained sound solvency and liquidity profiles. The organisational structure is in line with best practices and appropriate for its size. Qatar National Bank owns 39% of the bank, also reflected in the composition of its board of directors. However, this does not result in incremental governance risks because of the country's overall institutional framework.

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

HBTF is domiciled in Jordan, which we do not consider to have an operational resolution regime (ORR). Thus, we apply our basic Loss Given Failure (LGF) analysis, which results in a preliminary rating assessment (PRA) for the bank's long-term deposit in line with the bank's Adjusted BCA of ba3, before government support considerations. The PRA for the bank's Counterparty Risk Ratings (CRRs) and Counterparty Risk (CR) Assessment is placed one notch higher than the bank's Adjusted BCA of ba3, before government support considerations.

Government support

The Ba3/Not Prime deposit ratings of HBTF are derived from the bank's ba3 BCA, which is at the same level as the Ba3 issuer rating assigned to the Jordanian government.

Although HBTF is systemically important and we attach a very high probability of government support in case of need, the bank's ratings do not benefit from any uplift as its standalone credit profile is already on par with the government's credit profile. Our view of a very high likelihood of government support reflects the bank's double digit market shares in Jordan, its importance to the country's national payment system and the authorities' track record of supporting local banks when necessary.

Source of facts and figures cited in this report

Unless noted otherwise, we have sourced data relating to systemwide trends and market shares from the central bank. Bank-specific figures originate from banks' reports and our Banking Financial Metrics. All figures are based on our own chart of account and may be

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 12

Rating Factors

Macro Factors							
Weighted Macro Profile	Weak +	100%					
Factor	Historic Ratio	Initial Score	Expected Trend	Assigned Score	Key driver #1	Key driver #2	
Solvency							
Asset Risk							
Problem Loans / Gross Loans	6.3%	b2	↔	b3	Single name concentration	Long-run loss performance	
Capital							
Tangible Common Equity / Risk Weighted Assets (Basel III - transitional phase-in)	15.2%	baa3	↔	baa3	Risk-weighted capitalisation		
Profitability							
Net Income / Tangible Assets	1.6%	ba1	↔	ba1	Return on assets		
Combined Solvency Score		ba2		ba3			
Liquidity							
Funding Structure							
Market Funds / Tangible Banking Assets	12.2%	ba2	↔	ba2	Extent of market funding reliance		
Liquid Resources							
Liquid Banking Assets / Tangible Banking Assets	43.9%	baa3	↔	ba1	Expected Trend		
Combined Liquidity Score		ba1		ba2			
Financial Profile							
Qualitative Adjustments				Adjustment			
Business Diversification				0			
Opacity and Complexity				0			
Corporate Behavior				0			
Total Qualitative Adjustments				0			
Sovereign or Affiliate constraint				Ba3			
BCA Scorecard-indicated Outcome - Range				ba2 - b1			
Assigned BCA				ba3			
Affiliate Support notching				0			
Adjusted BCA				ba3			
Instrument Class	Loss Given Failure notching	Additional notching	Preliminary Rating Assessment	Government Support notching	Local Currency Rating	Foreign Currency Rating	
Counterparty Risk Rating	1	0	ba2	-	Ba2	Ba2	
Counterparty Risk Assessment	1	0	ba2 (cr)	-	Ba2(cr)		
Deposits	0	0	ba3	-	Ba3	Ba3	

[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 13

Category	Moody's Rating
HOUSING BANK FOR TRADE AND FINANCE (THE)	
Outlook	Stable
Counterparty Risk Rating	Ba2/NP
Bank Deposits	Ba3/NP
Baseline Credit Assessment	ba3
Adjusted Baseline Credit Assessment	ba3
Counterparty Risk Assessment	Ba2(cr)/NP(cr)

Source: Moody's Ratings

Endnotes

- 1 The bank ratings shown in this report are the bank's deposit rating and the BCA.
- 2 Stage 3 loans less interest in suspense.
- 3 Banks calculate capital ratios according to the Central Bank of Jordan's rules, assigning a zero risk weight to domestic government securities (both in local and foreign currency). A risk-weighting of 100% is more in line with the global standards for a Ba3 sovereign rating.

© 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 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 1445051