

CREDIT OPINION

16 October 2025

Update



RATINGS

Banque Cantonale Vaudoise

Domicile	Lausanne, Switzerland
Long Term CRR	A1
Туре	LT Counterparty Risk Rating - Fgn Curr
Outlook	Not Assigned
Long Term Debt	Not Assigned
Long Term Deposit	Aa2
Туре	LT Bank Deposits - Fgn Curr
Outlook	Stable

Please see the <u>ratings section</u> at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Swen Metzler, CFA +49.69.70730.762 VP-Sr Credit Officer swen.metzler@moodys.com

Fenxu Yan +49.69.7073.0729
Ratings Associate

Alexander Hendricks, +49.69.70730.779

Associate Managing Director alexander.hendricks@moodys.com

fenxu.yan@moodys.com

Carola Schuler +49.69.7073.0766 MD-Banking

carola.schuler@moodys.com

Banque Cantonale Vaudoise

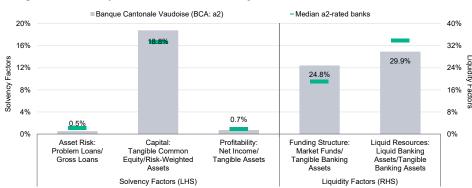
Update to credit analysis

Summary

Banque Cantonale Vaudoise's (BCV) Aa2 deposit ratings reflect the bank's a2 Baseline Credit Assessment (BCA), one notch of rating uplift from affiliate support, because of the majority ownership by the Canton of Vaud, and two notches of rating uplift from our Advanced Loss Given Failure (LGF) analysis, which incorporates the relative loss severity of a liability class. We do not incorporate any additional rating uplift from government support because of the bank's small domestic market share and low importance to the Swiss banking system.

BCV's a2 BCA reflects the bank's resilient and very stable solvency profile, displaying a strong and growing capital base and a continued sound asset quality. The BCA also takes account of the bank's high profitability and meaningful and growing dependence on confidence-sensitive wholesale funding, which is mitigated by solid liquid resources as well as its access to covered bonds and a fairly granular deposit base. BCV's BCA, however, remains constrained by potential asset quality challenges stemming from its narrow geographical footprint in the Lake of Geneva region, as well as relatively high exposures to mostly regional small and medium sized enterprises (SMEs) as well as some trade finance transactions.

Exhibit 1
Rating Scorecard Banque Cantonale Vaudoise - Key financial ratios



Source: Moody's Ratings and company filings

Credit strengths

- » Strong capitalisation provides substantial buffers against downside risks
- » Very high and stable profitability, supported by sizeable wealth management activities
- » Solid liquid resources and granular deposits mitigate potential outflow risks

Credit challenges

- » Asset concentration risks from corporate lending and regionally-focused mortgage loan concentrations which may face tail risks under prolonged adverse economic conditions
- » Moderately increasing wholesale funding dependence, mitigated by access to Switzerland's well-established covered bond market
- » Low capital generation ability reflecting BCV's high dividend payout ratios

Outlook

» The stable outlook on BCV's long-term deposit ratings reflects our expectation of the bank maintaining its current solvency and liquidity profile. The stable outlook also takes into account our expectation that BCV will maintain sufficient volumes of bail-in-able liabilities safeguarding the currently assigned rating uplift resulting from our Advanced LGF analysis.

Factors that could lead to an upgrade

- » An upgrade of BCV's long-term deposit ratings could be triggered by an upgrade of the bank's a1 Adjusted BCA, or from additional rating uplift as a result of our Advanced LGF analysis, for example because of significant issuance of instruments ranking below senior unsecured debt.
- » BCV's a2 BCA could be upgraded following a significant and sustained strengthening of its solvency and liquidity profile that could result from a combination of materially reduced concentration risks, a significantly higher profitability, and an improved combined liquidity profile.

Factors that could lead to a downgrade

- » A downgrade of BCV's long-term deposit ratings could be triggered following a downgrade of the bank's BCA or a material deterioration of the canton's creditworthiness. The bank's deposit ratings could also be downgraded in case of a sustained decline in senior unsecured debt volumes, which could lead to a lower result from our Advanced LGF analysis.
- » A downgrade of BCV's a2 BCA could result from the bank continuing to grow its dependence on market funding alongside its growth strategy or if it shrinks the level of liquid resources relative to its tangible banking assets. The BCA could further be downgraded if BCV's capital buffers decline meaningfully; its asset risk deteriorates, leading to meaningfully and sustainably higher problem loans and related loan loss charges; or its profitability deteriorates to levels well below the average of the past three years.

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
Banque Cantonale Vaudoise (Consolidated Financials) [1]

	06-25 ²	12-24 ²	12-23 ²	12-22 ²	12-21 ²	CAGR/Avg.3
Total Assets (CHF Billion)	61.2	60.6	58.9	59.4	56.0	2.6 ⁴
Total Assets (USD Billion)	76.9	66.9	69.9	64.2	61.2	6.7 ⁴
Tangible Common Equity (CHF Billion)	3.8	3.9	3.9	3.7	3.6	0.94
Tangible Common Equity (USD Billion)	4.7	4.3	4.6	4.0	4.0	5.0 ⁴
Problem Loans / Gross Loans (%)	0.5	0.5	0.5	0.6	0.5	0.5 ⁵
Tangible Common Equity / Risk Weighted Assets (%)	19.5	18.8	19.9	19.4	18.9	19.3 ⁶
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	5.0	4.5	4.7	5.6	5.1	5.0 ⁵
Net Interest Margin (%)	0.9	0.9	1.0	0.8	0.9	0.9 ⁵
PPI / Average RWA (%)	2.5	2.6	2.8	2.3	2.3	2.5 ⁶
Net Income / Tangible Assets (%)	0.7	0.7	0.8	0.7	0.7	0.75
Cost / Income Ratio (%)	56.6	54.9	53.1	56.9	57.2	55.8 ⁵
Market Funds / Tangible Banking Assets (%)	24.0	24.8	24.9	22.4	19.7	23.2 ⁵
Liquid Banking Assets / Tangible Banking Assets (%)	28.9	29.9	31.7	33.9	32.5	31.4 ⁵
Gross Loans / Due to Customers (%)	107.0	106.8	104.2	95.6	93.4	101.4 ⁵

^[1] All figures and ratios are adjusted using Moody's standard adjustments. [2] Basel III - fully loaded or transitional phase-in; LOCAL GAAP. [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

BCV is Switzerland's second-largest cantonal bank, with assets of around CHF61 billion and more than 2,100 employees as of 30 June 2025. The bank was established in 1845 by the Vaud Cantonal Parliament as a corporation organized under public law.

BCV has a corporate mandate to contribute to the economic development of its home region, the Canton of Vaud, and to provide mortgage financing there. Other than operating in its traditional areas of business, including retail banking (deposit-taking and lending) and wealth management, the bank is engaged in corporate banking and select trade financing operations in commodities. Through these activities, the bank is also exposed to other cantons in Switzerland and, to a limited extent, overseas markets.

As of 31 December 2024, the Canton of Vaud held a 67.0% stake in the bank. Unlike most Swiss cantonal banks, BCV does not benefit from an explicit guarantee of the canton.

Weighted Macro Profile of Strong (+)

BCV is focused on the Swiss market and its Weighted Macro Profile is therefore Strong (+), in line with the <u>Macro Profile</u> of Switzerland. Because of the bank's trade finance franchise, the bank also has limited exposures to the European Union, North American and other overseas markets.

Detailed credit considerations

Very strong and stable asset quality, yet regional and sector concentrations may pose tail risks

We assign an a2 Asset Risk score to BCV, four notches below the aa1 initial score. The negative adjustment reflects the bank's narrow geographical footprint in a region with elevated house prices, exposures to small and medium-sized enterprises (SMEs), moderate risks from trade finance activities, as well as interest rate risks in its banking book.

BCV's lending is focused on Switzerland's Vaud region which exhibits elevated property prices but also benefits from strong demographical factors. However, we consider the bank susceptible to shocks potentially emanating from the domestic real estate market or during a prolonged period of adverse economic conditions.

This vulnerability is, however, mitigated by BCV's conservative lending criteria and solid risk management, as demonstrated by an average loan-to-value ratio for its residential mortgage book of around 50%. Our assessment is further underpinned by the bank's stable and very low non-performing loan (NPL) ratio of 0.5% as of 30 June 2025, as well as solid on-balance sheet reserves of around 50% since 2021.

Exhibit 3
BCV's problem loan ratio remains very low Data in %

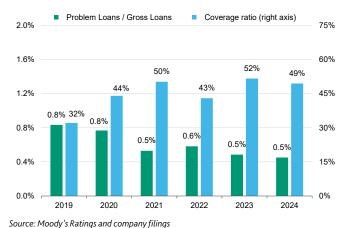
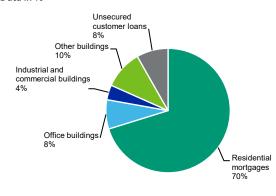


Exhibit 4
BCV's loan book breakdown as of year-end 2024
Data in %



Source: Moody's Ratings and company filings

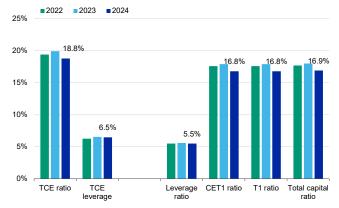
Robust capitalisation balanced by limited earnings retention

We assign an aa2 Capital score to BCV, in line with the initial score. The assigned score reflects our expectation of a moderate decline in the bank's capital ratios as the bank continues to grow, leading to higher risk-weighted assets (RWA) over time. Furthermore, BCV's relatively high dividend payout ratio, which ranged between 79%-94% in 2020-24, has limited earnings retention and the subsequent support of its tangible common equity (TCE).

As of 30 June 2025, BCV's TCE ratio increased to 19.5% from 18.8% in 2024, largely driven by lower RWA, reflecting the first-time application of new rules from the Capital Requirements Regulation 3 (CRR3), which took effect 1 January 2025. Over the same period, the bank's Common Equity Tier 1 (CET1) also increased to 18.4% from 16.9%, mainly reflecting around 7.8% lower RWA over that period.

Our TCE ratio is higher than the bank's CET1 ratio because we include expected dividends in our capital metric until payout, while dividends are immediately deducted from regulatory capital. We expect that BCV will maintain its strong capital ratios and keep significant buffers above its long-term CET1 ratio target of 13.0% as well as its regulatory requirements as a Category 3 institution.¹

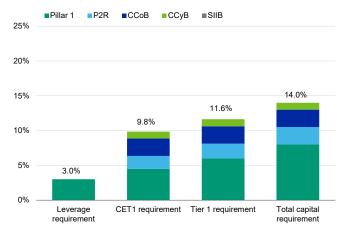
Exhibit 5
BCV comfortably exceeds its capital requirements
Data in %



TCE = Tangible Common Equity (Moody's calculation); CET1 = Common Equity Tier 1 capital; T1 = Tier 1 capital

Source: Moody's Ratings and company filings

Exhibit 6 BCV's regulatory capital requirements Data as of 31 December 2024



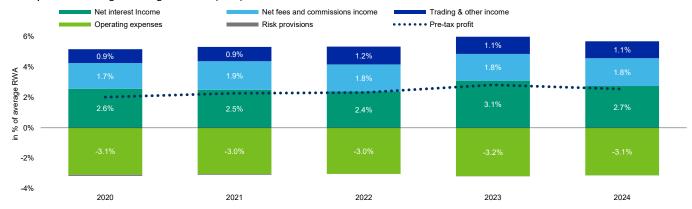
CCOB = Capital conservation buffer; CCyB = Countercyclical capital buffer; SIIB = Systemically important institutions buffer Source: Moody's Ratings and company filings

BCV's strong and stable profitability is supported by wealth management and solid operating efficiency

We assign a Profitability score of baa2 to BCV, in line with the initial score. Our assessment reflects the bank's strong and stable profitability, which compares favorable to its regional and cantonal banking peers, and benefits from meaningful wealth management activities, as well as solid operational efficiency.

Over more than a decade, BCV's annual net income to tangible assets ratio (NI/TA, our measure of return on assets or ROA) was around 70 bps, a high level compared with peers. It also displayed limited volatility over the 2013-24 period with a range of 62-80 bps. We believe that BCV's sizable wealth management activities are a key driver for its strong earnings generation because it adds meaningful fee income to its overall revenues. For the years 2022-24, BCV's wealth management segment accounted for around 43% of revenues and pretax profits, based on Assets under Management of between CHF113 to CHF124 billion over that period (1H25: CHF127 billion).

Exhibit 7
BCV exhibits very solid and stable profitability
Data in percent of average risk-weighted assets (RWA)



Source: Moody's Ratings and company filings

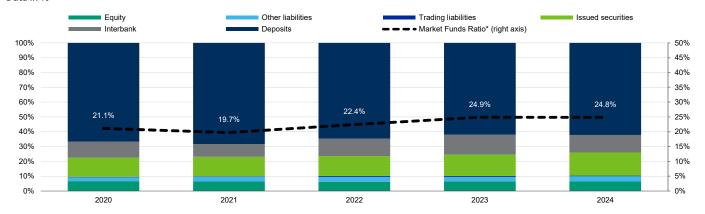
Moderately increasing wholesale funding dependence, mitigated by Switzerland's well-established covered bond market

We assign a baa1 Funding Structure score to BCV, in line with the initial score. Our assessment takes into account BCV's strong and granular deposit franchise as well as access to Switzerland's well-established covered bond market via Pfandbriefzentrale, which allows the cantonal bank to issue covered bonds with medium- to long-term tenures to reduce refinancing risks.

Over the last five years, BCV's market funding dependence has somewhat increased, as expressed by our market funds ratio of 24.8% in 2024, up from 21.1% in 2020. The higher dependence is driven by the declining share of deposits, which decreased to 62% as percent of total liabilities in 2024, compared with 65% in 2022 and 68% in 2020. At the same time, interbank liabilities remained broadly unchanged at around 12% of total liabilities.

Supporting BCV's growth plans, we expect a rising share of covered bonds and senior unsecured debt, leading to further gradually rising market funding dependence. BCV has also issued structured products with an outstanding volume of CHF2.3 billion as of year-end 2024. These liabilities have accounted for a relatively stable share of liabilities, around 3% since 2018, and rather reflect the investment appetite of the bank's customers.²

Exhibit 8
Since 2020, BCV's market funding dependence has gradually increased
Data in %



^{*}Market funds ratio = Market funds / Tangible banking assets Source: Moody's Ratings and company filings

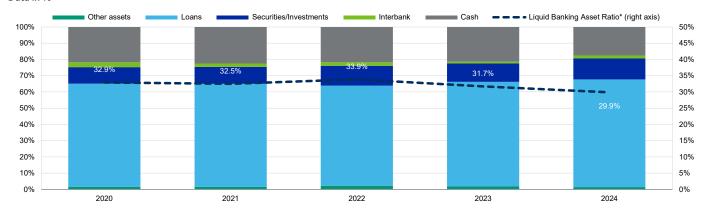
Solid liquid resources which exceed market funding

BCV's assigned Liquid Resources score is a2, one notch above the initial score. The assigned score considers the bank's solid liquid resources, which we expect to somewhat decrease over the next 12-18 months as the bank continues to grow and invest into loans and a moderate level of asset encumbrance. In our assessment we also reflect that the bank could source additional liquidity at short notice, in case of need, by pledging additional mortgages to Pfandbriefzentrale.

Over the last decade, BCV's liquid resources have constantly exceeded its market funding. Between 2020-23, the bank's liquid banking assets ratio remained broadly stable at around 31%, with very little change over that period, even during times when the SNB offered the opportunity to deposit additional funds in order to generate carry income.³

In 2024, BCV's liquid banking assets somewhat declined to 29.9% reflecting strong loan growth of 5.9% in that year. At the same time, BCV operated with slightly lower high-quality liquid assets (HQLA) of CHF11.8 billion, leading to a moderately lower Liquidity Coverage Ratio (LCR) of 124%, compared with 129% in 2023.

Exhibit 9
BCV exhibits moderately lower liquid resources reflecting strong loan growth in 2024
Data in %

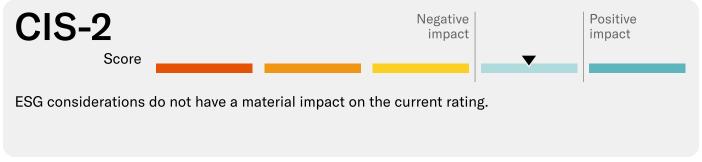


^{*}Liquid banking assets ratio = Liquid assets / Tangible banking assets Source: Moody's Ratings and company filings

ESG considerations

Banque Cantonale Vaudoise's ESG credit impact score is CIS-2

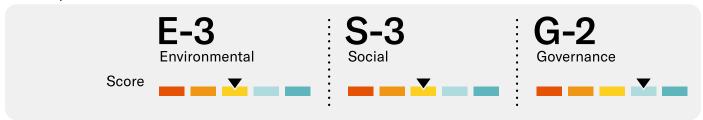
Exhibit 10
ESG credit impact score



Source: Moody's Ratings

BCV's CIS-2 indicates that ESG considerations have no material impact on the current ratings.

Exhibit 11
ESG issuer profile scores



Source: Moody's Ratings

Environmental

BCV faces moderate exposure to environmental risks primarily because of its loan portfolio exposure to carbon transition risks as a diversified regional banking group. Carbon transition risks relate mostly to its corporate loan book, which represents about a third of the bank's lending portfolio, with the remainder comprising residential real estate. In line with its peers, BCV is facing mounting business risks and stakeholder pressure to meet broader carbon transition goals.

Social

BCV faces moderate social risks related to customer relations and associated regulatory risks and exposure to litigation and it is required to meet high compliance standards. The bank's strong conduct track record demonstrates the effective management of conduct risks by developed policies and procedures as well as its focus on simple financial products and services for its domestic clientele. Further, the bank's long track record of handling sensitive customer data as well as technology solutions and organizational measures to prevent data breaches and business disruption help to manage high cyber and personal data risks

Governance

BCV faces low governance risks, and its risk management, policies and procedures are in line with industry best practices and commensurate with its universal banking model. Also, even though the bank is 67% owned by the Canton of Vaud, all seven members of its board of directors are considered independent, despite four of them being appointed by the cantonal government.

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

Affiliate support

BCV benefits from parental support from the Canton of Vaud. Parental support materially reduces the probability of default, as it would be available to stabilise a distressed bank and not just compensate for losses in resolution.

We consider a high level of support, reflecting that the Canton of Vaud owns 67% of the share capital of BCV, which, combined with the bank's economic and social role as a cantonal bank in the region, provides an incentive for the canton to inject capital into BCV prior to failure, in case of need. Because of a lack of an explicit guarantee to support the bank, we limit the parental support to one notch of rating uplift from the a2 BCA, leading to an a1 Adjusted BCA.

Loss Given Failure analysis

BCV is subject to Swiss banking regulation, which we consider an operational resolution regime (ORR). Thus, we apply our Advanced Loss Given Failure (LGF) analysis, using our standard assumptions, assigning a 100% probability that deposits are being preferred to senior unsecured debt, reflecting depositor preference by law in Switzerland.

Our LGF analysis indicates that deposits are likely to face very low loss-given-failure, resulting in a two-notch uplift from the bank's a1 Adjusted BCA.

Government support

Because of the BCV's low nationwide market share, we do not consider BCV to be of domestic systemic importance and therefore only assume a low likelihood of government support, which results in no rating uplift.

Methodology and scorecard

Methodology

The principal methodology we used in rating BCV was Banks Methodology, published in November 2024.

About Moody's Bank Scorecard

Our Bank Scorecard is designed to capture, express and explain in summary form our Rating Committee's judgment. When read in conjunction with our research, a fulsome presentation of our judgment 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	100%					
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	0.5%	aa1	\leftrightarrow	a2	Geographical concentration	Quality of assets
Capital						
Tangible Common Equity / Risk Weighted Assets (Basel III - transitional phase-in)	19.5%	aa2	\leftrightarrow	aa2	Risk-weighted capitalisation	Capital retention
Profitability						
Net Income / Tangible Assets	0.7%	baa2	\leftrightarrow	baa2	Return on assets	Expected trend
Combined Solvency Score		aa3		a2		
Liquidity						
Funding Structure						
Market Funds / Tangible Banking Assets	24.8%	baa1	\leftrightarrow	baa1	Extent of market funding reliance	Market funding quality
Liquid Resources						
Liquid Banking Assets / Tangible Banking Assets	29.9%	a3	\leftrightarrow	a2	Stock of liquid assets	Quality of liquid assets
Combined Liquidity Score		baa1		a3		
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				-		
Adjusted BCA				a1		
Balance Sheet		in-scope % in-scope (CHF Million)		% in-scope	at-failure (CHF Million)	% at-failure
Other liabilities		17	,440	28.8%	22,656	37.4%
Deposits		37	,676	62.1%	33,833	55.8%
Preferred deposits		27	,880	46.0%	26,486	43.7%
Junior deposits		9,	796	16.2%	7,347	12.1%
Senior unsecured bank debt		3,	694	6.1%	2,321	3.8%
Equity		1	91Ω	2 00/	1 01Ω	2 00/

1,819

60,629

Equity
Total Tangible Banking Assets

3.0%

100.0%

1,819

60,629

3.0%

100.0%

Debt Class	De Jure	waterfall	De Facto waterfall		Not	Notching		Assigned	Additiona	al Preliminary
	Instrument volume + subordination	ordinatio	Instrument on volume + o subordinatio	ordination	-	De Facto	Notching Guidance vs.		Notching	g Rating Assessment
							Adjusted BCA			
Counterparty Risk Rating	6.8%	6.8%	6.8%	6.8%	0	0	0	0	0	a1
Counterparty Risk Assessment	6.8%	6.8%	6.8%	6.8%	1	1	1	1	0	aa3 (cr)
Deposits	18.9%	6.8%	18.9%	6.8%	2	2	2	2	0	aa2

Instrument Class	Loss Given Failure notching	Additional Preliminary Rating notching Assessment S		Government Support notching	Local Currency Rating	Foreign Currency Rating
Counterparty Risk Rating	0	0	a1	0	A1	A1
Counterparty Risk Assessment	1	0	aa3 (cr)	0	Aa3(cr)	
Deposits	2	0	aa2	0	Aa2	Aa2

^[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		
BANQUE CANTONALE VAUDOISE			
Outlook	Stable		
Counterparty Risk Rating	A1/P-1		
Bank Deposits	Aa2/P-1		
Baseline Credit Assessment	a2		
Adjusted Baseline Credit Assessment	a1		
Counterparty Risk Assessment	Aa3(cr)/P-1(cr)		
Source: Moody's Ratings			

Endnotes

- 1 According to the FINMA definition, BCV must maintain a CET1 ratio of 9.8%, a Tier 1 ratio of 11.6%, and a Total Capital ratio of 14.0% (Exhibit 6). The introduction of a 2.5% countercyclical capital buffer (CCyB) requirement for domestic real estate loans effective 30 September 2022 has resulted in an additional capital-add on of 100 basis points (bps) for BCV. Since 2016, FINMA's Pillar 2 requirements also include a 100 bps add-on for BCV's heightened interest rate risk.
- 2 Issued structured products with and without an interest-rate component.
- 3 With the increase in interest rates since 2022, bank had the opportunity to generate carry income from holding sight deposits at 0% at the SNB while sourcing funding in the capital market at negative rates.

© 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 crudian 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 irmoodys.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

1462202