

CREDIT OPINION

2 September 2025

Update



RATINGS

St.Galler Kantonalbank AG

Domicile	St.Gallen, Switzerland
Long Term CRR	Aa2
Туре	LT Counterparty Risk Rating - Fgn Curr
Outlook	Not Assigned
Long Term Debt	Aa2
Туре	Senior Unsecured - Dom Curr
Outlook	Stable
Long Term Deposit	Not Assigned

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

Andrea Wehmeier +49.69.70730.782 VP-Senior Analyst andrea.wehmeier@moodys.com

Alexander Hendricks, +49.69.70730.779 CFA

Associate Managing Director alexander.hendricks@moodys.com

Carola Schuler +49.69.7073.0766

MD-Banking

carola.schuler@moodys.com

St.Galler Kantonalbank AG

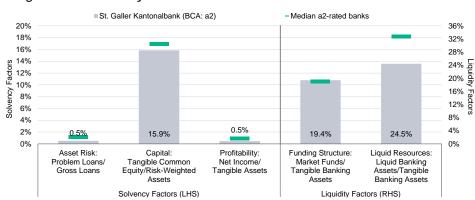
Update after rating affirmation

Summary

St. Galler Kantonalbank AG's (SGKB) Aa1 backed deposit ratings and Aa2 backed senior unsecured ratings reflect its a2 BCA, one notch of rating uplift from affiliate support because of the majority ownership by the Canton of St. Gallen and the bank's important role in the region and three notches of ratings uplift for SGKB's backed deposit ratings and one notch of ratings uplift for its backed senior unsecured debt ratings. For the backed senior unsecured debt ratings, the guarantee provided by the Canton of St. Gallen for non-subordinated liabilities provides one notch of ratings uplift, but none to the backed deposit ratings, given the already high starting point. We do not incorporate further rating uplift from sovereign government support in SGKB's deposit ratings due to the bank's small domestic market share and relatively low importance to the Swiss banking system.

SGKB's a2 BCA reflects the bank's solid capital base, its continued sound asset quality, despite geographical and sector concentrations, as well as our expectation of profitability remaining close to past years levels, underpinning the bank's contained earnings volatility. The BCA is further supported by SGKB's balanced liquidity and funding profile. The guarantee provided by the Canton of St.Gallen helps to ensure uninterrupted access to domestic and international capital markets at very attractive rates owing to the bank's status as a quasi-subsovereign issuer. The bank's recourse to Pfandbriefe and its stable and fairly granular deposit base further mitigates the bank's liquidity outflow risks.

Exhibit 1
Rating Scorecard SGKB - Key financial ratios



Source: Moody's Ratings

Credit strengths

- » The Canton of St.Gallen fully guarantees all of the bank's senior liabilities
- » The bank's solid capital ratios, albeit recently declining slightly, provide a strong buffer against downside risks
- » Strong asset quality, with a focus on collateralised lending

Credit challenges

- » Geographically concentrated loan book
- » Significant exposure to development in residential real estate markets

Outlook

» The stable outlook on the backed long-term deposit and backed long-term senior unsecured debt ratings reflects our expectation that the financial profile of SGKB, including its liability structure, will remain broadly unchanged. We further do not expect any change in the guarantee framework the canton provides to SGKB.

Factors that could lead to an upgrade

- » SGKB's long-term ratings, including its backed long-term ratings, could be upgraded if the bank's BCA was to be upgraded. The backed senior unsecured ratings and CRR could also be upgraded in case the creditworthiness of the Canton of St.Gallen improves. Further, the bank's backed CRR could be upgraded following changes in the liability structure, such that it reduces the loss severity for these liability classed from our Advanced LGF analysis.
- » The BCA could be upgraded following a combination of materially reduced concentration risks, significantly higher profitability, and an improved combined liquidity profile.

Factors that could lead to a downgrade

- » The bank's backed ratings could be downgraded following a downgrade of the bank's BCA or a material deterioration of the canton's creditworthiness. The bank's backed long-term deposit ratings could also be downgraded as result of an adverse change in the bank's liability structure, potentially leading to a lower rating uplift as a result of our Advanced LGF analysis.
- » The bank's BCA could be downgraded if its capital buffers decline; its asset risk deteriorates leading to meaningfully and sustainably higher problem loans and risk costs; or its profitability deteriorates to levels below the historic levels, increasing earnings volatility. Furthermore, a declining liquidity buffer in conjunction with higher market funding dependence could lead to a BCA downgrade.

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
St.Galler Kantonalbank AG (Consolidated Financials) [1]

	12-24 ²	12-23 ²	12-22 ²	12-21 ²	12-20 ²	CAGR/Avg. ³
Total Assets (CHF Billion)	45.6	41.3	40.8	39.6	38.5	4.3 ⁴
Total Assets (USD Billion)	50.3	49.1	44.1	43.3	43.6	3.6 ⁴
Tangible Common Equity (CHF Billion)	3.0	2.9	2.8	2.7	2.6	3.8 ⁴
Tangible Common Equity (USD Billion)	3.3	3.4	3.0	2.9	2.9	3.2 ⁴
Problem Loans / Gross Loans (%)	0.5	0.4	0.6	0.9	1.1	0.75
Tangible Common Equity / Risk Weighted Assets (%)	15.9	16.0	16.3	16.6	16.6	16.3 ⁶
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	5.6	4.8	6.2	9.0	11.8	7.5 ⁵
Net Interest Margin (%)	0.8	0.9	0.8	0.8	0.8	0.85
PPI / Average RWA (%)	1.4	1.6	1.3	1.4	1.3	1.4 ⁶
Net Income / Tangible Assets (%)	0.5	0.6	0.5	0.5	0.4	0.55
Cost / Income Ratio (%)	54.9	53.1	58.3	57.3	59.2	56.5 ⁵
Market Funds / Tangible Banking Assets (%)	19.4	19.4	20.9	21.7	23.0	20.95
Liquid Banking Assets / Tangible Banking Assets (%)	24.5	20.7	24.0	25.9	25.3	24.1 ⁵
Gross Loans / Due to Customers (%)	110.7	116.0	113.1	111.0	115.5	113.2 ⁵

^[-] Further to the publication of our revised methodology in July 2021, only ratios from annual 2020 onwards included in this report reflect the change in analytical treatment of the "high-trigger" Additional Tier 1 instruments. [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

SGKB is a Swiss cantonal bank that operates mainly in the Canton of St.Gallen and Appenzell-Ausserrhoden, providing savings and credit services, as well as wealth management solutions to individuals and small and medium-sized businesses. The bank was founded in 1868 as a government-owned credit institution to promote regional economic development. As of 31 December 2024, the bank operated through a network of 40 banking outlets (including two German offices in Frankfurt and Munich) and employed 1,186 full-time equivalent employees. The Canton of St.Gallen is the largest shareholder of the bank, with a 51% stake. By law, the canton is required to hold at least 51% of the bank's shares, which have been listed on the SIX Swiss Exchange since 2001.

Weighted Macro Profile of Strong (+)

SGKB is focused on the Swiss market and its Weighted Macro Profile is therefore Strong (+), in line with the <u>Macro Profile of Switzerland</u>.

Recent developments

In the first half-year 2025, SGKB achieved an increase of its net profit by 13.6% to CHF114.1 million, supported by a 10% strong net interest income and a 9% increase in fee and commission income compared with the first six months 2024. The bank's loan book expanded by a contained 1.1%, with a focus on retail and SME/corporate clients, while commercial real estate exposures were reduced. Assets under management grew to CHF66.9 billion, supported by CHF 2.0 billion in net new money. SGKB further confirmed the 2025 targets, despite operational challenges, such as the potential impact of the increased US tariffs on the economy.

Detailed credit considerations

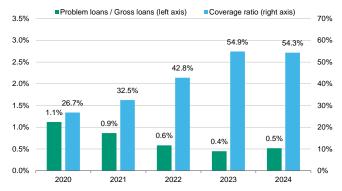
Narrow geographical focus and sector concentrations in real estate are key drivers for asset risk

We assign an a2 Asset Risk score, three notches below the aa2 initial score. The adjustment reflects the bank's narrow geographical footprint and sector concentrations, although the loan book is dominated by low risk residential mortgages.

SGKB's asset quality is strong and reflects stringent underwriting standards. In addition, its coverage ratio of 54.3% as of December 2024 provides a sufficient buffer to cover potential losses from its very small portfolio of non-performing loans, that are largely secured by mortgages. The bank's exposure to regional larger corporates as well as small and medium-sized enterprises provides a fair degree of diversification, while not impacting the overall level of non-performing loans negatively, thanks to SGKB's good risk management.

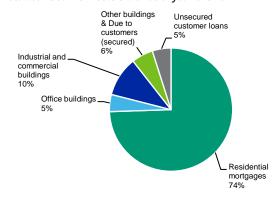
SGKB's residential and commercial mortgage loan book (CHF31.2 billion as of 31 December 2024), which is concentrated in the Canton of St.Gallen and Appenzell-Ausserrhoden, grew by 11.7% from year-end 2022 to 2024, above market average. The expansion of SGKB's mortgage book in recent years has increased the bank's susceptibility to potential shocks from the domestic real estate markets. However, we believe the bank would be well positioned to absorb any potential weakening of the Swiss housing market as its mortgage loan book is highly granular, with only a small proportion exhibiting a loan-to-value ratio above 60%.

Exhibit 3
SGKB's problem loan ratio and coverage ratio improved in recent years



The problem loan ratio is in accordance with our definition. Source: Moody's Ratings and company filings

Exhibit 4
SGKB's loan book largely consists of residential mortgages
Total loan book: CHF33.8 billion as of year-end 2024



Source: Moody's Ratings and company filings

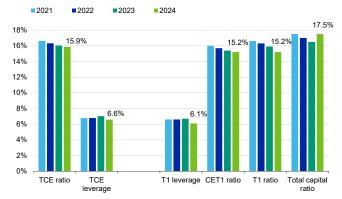
Solid capital ratios provide strong investor protection

We assign a aa3 Capital score, in line with the initial score. Our evaluation reflects the bank's tangible common equity (TCE) ratio of 15.9% as of 31 December 2024, as well as solid leverage ratios and our expectations that the capital ratios for the bank will remain stable in 2025.

SGKB's capital ratios provide a strong, buffer against the bank's regulatory requirements¹ set by the Swiss Financial Market Supervisory Authority (FINMA). Growth in loans (+5.0% year-over-year) and risk weighted assets (RWA, +4.8%) outpaced capital accumulation via retained earnings (the bank's TCE grew 3.6%), leading to a further slight decline in capital ratios in 2024. During 2023, SGKB benefitted from growth opportunities arising from the situation around Credit Suisse AG.

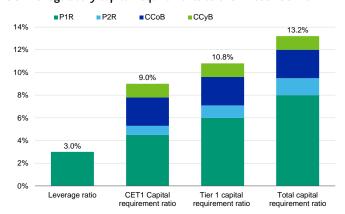
Similar to the bank's risk-based capital ratios, SGKB's leverage ratios deteriorated marginally in 2024, however remained solid, a situation that we do not expect to change.

Exhibit 5
SGKB well exceeds its regulatory capital requirements



TCE = Tangible Common Equity (Moody's calculation); CET1 = Common Equity Tier 1 Source: Moody's Ratings and company filings

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



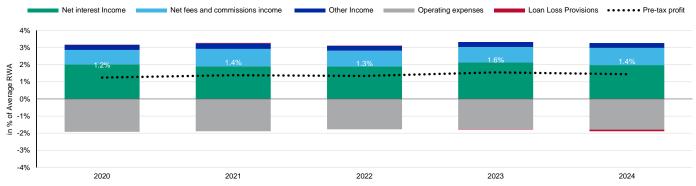
P1R = Pillar 1 requirement; P2R = Pillar 2 requirement; CCoB = Capital conservation buffer requirement; CCyB = Countercyclical capital buffer requirement Source: Moody's Ratings and company filings

SGKB's stable earnings support its capital generation capacity

We assign a baa3 Profitability score, one notch above the initial score, reflecting the bank's 0.5% net income to tangible assets ratio in 2024 and the bank's track record of very stable returns over the past decade. We expect that in 2025 and potentially beyond, SGKB's return on assets will soften somewhat, largely to the effect of lower rates, a gradual increase in loan loss provisions and a declining positive effect on earnings from the SNB carry trade².

In 2024, SGKB recorded a slight decline in net income, driven by lower net interest income. The less favorable interest-rate environment pressured revenue generation, despite continued loan growth, particularly as funding costs increased. The rise in net fee and commission income was not able to fully balance the impact. Combined with cost pressures, driven by second round inflation effects and IT investments, and slightly rising loan loss provisions, lead to a decline of the bank's pre-tax profit by 7% to CHF254 million. The trend is also reflected in SGKB's weaker cost-income ratio of 54.9%, up from 53.1% in the previous year.

Exhibit 7
SGKB's revenue is driven by net interest income



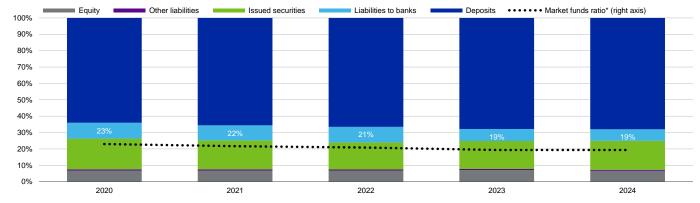
Source: Moody's Ratings and company filings

Excellent access to capital markets and strong deposit base

The a1 assigned Funding Structure score is positioned two notches above the a3 initial score. The score takes into account the guarantee provided by the Canton of St. Gallen on the bank's senior obligations, safeguarding the bank's access to more confidence-sensitive wholesale funding even under more adverse market conditions.

SGKB's main funding source is its customer deposit base, which amounted to CHF 30.6 billion as of 31 December 2024 (67% of total assets; including Kassenobligationen). The bank's largest market funding source is covered bonds, which amounted to CHF4.8 billion as of 31 December 2024, limiting potential interest-rate and refinancing risks for the bank owing to its better matched asset-liability profile. Additionally, market funding also comprised CHF3.2 billion of interbank liabilities and CHF3.1 billion of senior unsecured funding as of 31 December 2024.

Exhibit 8
SGKB's strong deposit franchise and long tenor of issued securities limits refinancing risks



*Market funds ratio = Market funds/tangible banking assets. Source: Moody's Ratings and company filings

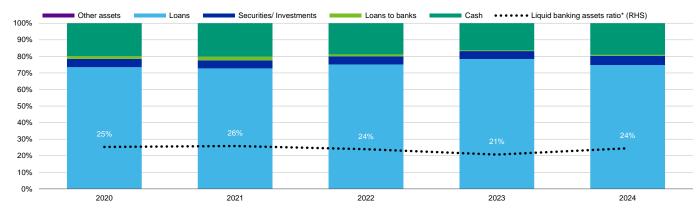
SGKB's liquid resources are sound, considering its moderate market funding reliance

We assign a baa1 Liquid Resources score, in line with the initial score, taking into account some limited asset encumbrance. With the SNB carry trade opportunity to fade out, bank's liquid resources are expected to decline in tandem with market funding dependence.

As a share of tangible banking assets, SGKB's liquid banking assets of 24% exceed the bank's market funds of 19% as of 31 December 2024, in line with many domestic peers. The bank's liquid resources as sound, also in light of the favourable term structure of SGKB's market funding and the canton's guarantee, both limiting refinancing risks.

As of 31 December 2024, SGKB's liquid banking assets were largely comprised of CHF8.7billion of cash and central bank deposits and CHF2.2 billion of liquid investment securities. SGKB's Liquidity Coverage Ratio (LCR), stood at a solid 138.5% as of 31 December 2024, and the bank's Net Stable Funding Ratio (NSFR) was 130.2%.

Exhibit 9
SGKB's liquid resources are well balanced compared with its market funding profile



*Liquid banking assets ratio = Liquid banking assets/tangible banking assets. Source: Moody's Ratings and company filings

ESG considerations

St.Galler Kantonalbank AG's ESG credit impact score is CIS-2

Exhibit 10

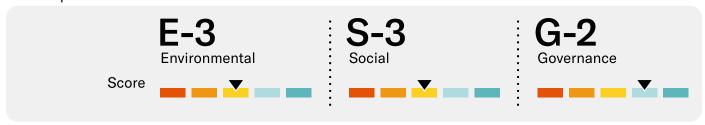
ESG credit impact score



Source: Moody's Ratings

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

Exhibit 11
ESG issuer profile scores



Source: Moody's Ratings

Environmental

SGKB 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 quarter of the bank's lending portfolio, with the remainder comprising residential real estate. In line with its peers, SGKB is facing mounting business risks and stakeholder pressure to meet broader carbon transition goals.

Social

SGKB faces moderate social risks related to customer relations and associated regulatory risks, litigation exposure, and high compliance standards. These risk exposures emerge primarily from its retail as well as its wealth and asset management operations and they are mitigated by the bank's developed policies and procedures. Furthermore, 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

SGKB 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 51% owned by the Canton of St.Gallen, seven of the nine members of its board of directors are considered independent.

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

SGKB benefits from parental support from the Canton of St.Gallen. Parental support 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 St.Gallen owns 51% of the share capital of SGKB, 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 SGKB prior to failure, in case of need. In this assessment, we also consider the deficiency guarantee, which is an incentive for the canton to inject capital prior to failure. Parental support provides one notch of rating uplift from the a2 BCA, leading to an a1 Adjusted BCA.

Loss Given Failure analysis

SGKB is subject to Swiss banking regulations, which we consider an operational resolution regime. We therefore apply our Advanced LGF analysis, which takes into consideration the risks faced by the different debt and deposit classes across the liability structure at failure. In our Advanced LGF analysis, we assign a 100% probability to deposits being preferred to senior unsecured debt, thereby reflecting depositor preference by law in Switzerland, otherwise we apply our standard assumptions.

For deposits, our LGF analysis indicates an extremely low loss given failure, leading to three notches ratings uplift from the a1 Adjusted BCA. For senior unsecured debt, our LGF analysis indicates a low loss given failure, leading to one notch of ratings uplift from the a1 Adjusted BCA.

Government support

We assess SGKB as government-backed by its regional authority, the Canton of St.Gallen, since it provides an explicit deficiency guarantee for all of the bank's unsubordinated obligations.

However, since we expect that the Canton of St.Gallen will provide some support to SGKB prior to failure, and given the uplift provided by our Advanced LGF analysis for the bank's senior obligations, SGKB's backed deposit ratings, its backed CRR and its backed Counterparty Risk Assessments do not benefit from further (regional) government support. The bank's Aa2 backed senior unsecured debt rating, however, incorporates one notch of (regional) government support uplift because of the deficiency guarantee. Since SGKB's subordinated Tier 2 instruments are not covered by the deficiency guarantee, they do not benefit from any uplift.

Further, we do not incorporate rating uplift from sovereign government support for SGKB's senior ratings due to the bank's small domestic market share and low importance to the Swiss banking system.

Methodology and scorecard

Methodology

The principal methodology we used in rating SGKB was our 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 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%	aa2	\leftrightarrow	a2	Geographical concentration	Sector concentration
Capital						
Tangible Common Equity / Risk Weighted Assets (Basel III - transitional phase-in)	15.9%	aa3	\leftrightarrow	aa3	Risk-weighted capitalisation	Expected trend
Profitability						
Net Income / Tangible Assets	0.5%	ba1	\leftrightarrow	baa3	Return on assets	Earnings quality
Combined Solvency Score		a1		a2		
Liquidity						
Funding Structure						
Market Funds / Tangible Banking Assets	19.4%	a3	\leftrightarrow	a1	Market funding quality	Expected trend
Liquid Resources					<u> </u>	
Liquid Banking Assets / Tangible Banking Assets	24.5%	baa1	\leftrightarrow	baa1	Stock of liquid assets	Expected trend
Combined Liquidity Score		a3		a2		
Financial Profile		a2		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 is not applicable.

Financial Institutions Moody's Ratings

Debt Class	De Jure wat	erfall	De Facto wate	erfall	Not	ching	LGF	Assigned	Additiona	Preliminary
	Instrument : volume + ord subordination	linatio	Instrument Su on volume + ordin subordination		De Jure	De Facto	Notching Guidance vs. Adjusted BCA		Notching	Rating Assessment
Counterparty Risk Rating	-	-	-	-	-	-	-	2	0	aa2
Counterparty Risk Assessment	-	-	-	-	-	-	-	3	0	aa1 (cr)
Deposits	-	-	-	-	-	-	-	3	0	aa1
Senior unsecured bank debt	-	-	-	-	-	-	-	1	0	aa3
Dated subordinated bank debt	_	-	_	-	-	_	_	-1	0	a2

Instrument Class	Loss Given	Additional Preliminary Rating		Government	Local Currency	Foreign
	Failure notching	notching	Assessment	Support notching	Rating	Currency Rating
Counterparty Risk Rating	2	0	aa2	-	Aa2	Aa2
Counterparty Risk Assessment	3	0	aa1 (cr)	-	Aa1(cr)	
Deposits	3	0	aa1	-	Aa1	Aa1
Senior unsecured bank debt	1	0	aa3	-	Aa2	Aa2
Dated subordinated bank debt	-1	0	a2	-	A2	A2

^[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			
ST.GALLER KANTONALBANK AG				
Outlook	Stable			
Bkd Bank Deposits	Aa1/P-1			
Baseline Credit Assessment	a2			
Adjusted Baseline Credit Assessment	a1			
Bkd Senior Unsecured -Dom Curr	Aa2			
Subordinate -Dom Curr	A2			

Endnotes

1 SGKB is classified as a Category 3 banking institution by FINMA. As such, it has to hold Common Equity Tier 1 of at least 9.0% of risk-weighted assets.

2 Swiss banks could hold sight deposits at 0% interest at the SNB in past years, which have been refinanced by market funding sources at negative rates in order to generate carry income. With the increase in interest rates starting in 2022, this carry trade opportunity declined but not disappeared because the SNB continued to remunerate banks' sight deposits at rates that remained above market funding rates. Starting 1 December 2023, the SNP no longer remunerates sight deposits up to the level of the minimum reserve requirement (minus cash holdings), and that the amount of sight deposits above that level that is remunerated at the SNB policy rate was lowered to 25 times the minimum reserve requirement from 28 times previously. Any sight deposits beyond that is remunerated at the SNB policy rate minus a discount of 0.5 percentage points. Hence, the carry trade opportunity has declined significantly for all Swiss banks.

11

© 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 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

1449927

Contacts

Francesco Masciandaro +49.69.86790.2142

Sr Ratings Associate

francesco.masciandaro@moodys.com

CLIENT SERVICES

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