

Basel III Pillar 3 Report

Market discipline



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1. OBJECTIVE AND SCOPE OF THIS REPORT

The objective of this report is to provide in-depth information on risk management at BCV Group to investors, analysts, ratings agencies and supervisory bodies. In particular, it describes the Bank's capital adequacy, its risk-assessment methods and the level of risk taken at BCV. This document was prepared in accordance with the Pillar 3 disclosure requirements set forth under the Basel III Accord, together with Circular 2016/1 "Disclosure – banks" published by the Swiss Financial Market Supervisory Authority (FINMA).¹

1.1 Disclosure policy

For ease of access, this report is available in the investor relations section of BCV's website. It has been updated on a half-yearly basis ever since BCV became subject to Basel II on 1 January 2009. It is published within two months following the end of the first half of the financial year and within four months following the end of the financial year, in accordance with Swiss regulations (FINMA Circular 2016/1, margin number 40).

This version of the report corresponds to the closing of accounts on 31 December 2021.² The description of the Bank's governance, methods, and processes reflects the situation at 31 December 2021; subsequent changes are not included.

The Bank's external auditor verifies, as a general rule every three years, compliance with financial disclosure requirements based on FINMA Circular 2013/3 "Auditing," and states its opinion in its detailed audit report. The data contained in the Bank's Pillar 3 reports are calculated in accordance with the Basel III Accord regulatory capital requirements. This calculation process was audited during FINMA's IRB approval process and is subject to oversight as part of the regulatory supervision process. Furthermore, BCV's Internal Audit Department periodically reviews the process for calculating capital requirements (Basel III Accord, §443).

The appendix to this report contains information that is useful for understanding this document, including a description of business segments and a list of abbreviations.

The figures contained in the tables have each been properly rounded depending on the number of significant digits used for the table; this may result in discrepancies between listed column and row totals and the sum of individual column or row items.

1.2 Scope

The parent company within BCV Group is Banque Cantonale Vaudoise, a corporation organized under public law with its headquarters in Lausanne. The parent company has a branch in Guernsey.

The companies that the Group is required to include in its regulatory reporting include companies over which BCV has control and companies in which it has significant influence over operations. These companies are fully consolidated. Significant influence is generally recognized by the Bank when it makes a profit from or bears the risks of a company's operations.

Companies in which BCV has significant influence but no outright control (holdings of 20%–50%) are accounted for using the equity method.

¹The correspondence between the tables in this Pillar 3 report and those in the Basel Accord is given in the Appendix (Section 8.3.1).

²End-June figures are taken from BCV's interim financial statements, which are not audited by an independent auditor.

The following companies are not included in the scope of consolidation:

- Holdings of no material significance in terms of financial reporting and risk;
- Significant holdings not held for strategic purposes and intended to be sold or liquidated within 12 months.

Table 1. Group companies included in the regulatory scope of consolidation

At 31 December 2021, BCV Group

Group companies included in the supervisory review		Capital in millions	Shareholding (%)
Private banks			
Piguet Galland & Cie SA, Yverdon-les-Bains (Switzerland)	CHF	24.4	99.7
Fund-management companies			
Gérifonds SA, Lausanne (Switzerland)	CHF	2.9	100.0
Gérifonds (Luxembourg) SA, Luxembourg	EUR	0.1	100.0
Société pour la gestion de placements collectifs GEP SA, Lausanne (Switzerland)	CHF	1.5	100.0

The regulatory scope of consolidation did not change in 2021.

Companies taken into account for calculating capital requirements are the same as those included in the Group's consolidated accounts. All these companies are fully consolidated in the financial statements. No company is currently accounted for using the equity method. The Group has no subsidiaries in the field of insurance.

2. CAPITAL ADEQUACY AND LIQUIDITY

Monitoring capital adequacy and liquidity is a key component of BCV's financial strategy. Management carefully considers the potential impact on the Bank's capital and liquidity ratios before making any major decisions about the Bank's operations and the orientation of its business.

The Executive Board monitors the capital and liquidity ratios monthly for the parent company. Both the Executive Board and the Board of Directors monitor these ratios every quarter for the parent company and every six months for the Group as a whole. FINMA monitors the parent company's capital adequacy and liquidity each quarter and the Group's capital adequacy and liquidity every six months using regulatory-required reports.

2.1 Key ratios

FINMA's capital ratio requirement³ is based on the Basel III Accord and is set forth in Article 41 of the Capital Adequacy Ordinance (CAO). The minimum required total capital ratio for BCV was 13.0% at 31 December 2021. It comprises the permanent requirement for a category 3 bank (12%) and an additional capital requirement (1%). The permanent requirement consists of the absolute minimum requirement for a banking license (8%) and the capital buffer for a category 3 bank (4.0%). The additional capital requirement is a temporary requirement set by FINMA in light of the extremely low interest rates. Given those low rates, and BCV's interest-rate-risk exposure as determined by FINMA, FINMA has set an additional capital requirement of 1% for BCV.

BCV Group's total capital ratio was 17.3% at 31 December 2021, higher than the regulatory requirement of 13.0%. The Bank's Common Equity Tier 1 (CET1) ratio was 17.2%, also above FINMA's requirement of 8.8%. The difference between the Bank's total capital ratio and CET1 ratio is due to the fact that its Tier 2 capital comprises reserves on debt and equity securities carried under financial investments and stated at lower of cost or market, subject to a limit of 45% of unrealized gains.

The leverage ratio⁴ was 5.6% at 31 December 2021 (see tables in Section 8.2). This ratio is above the regulatory requirement of 3% effective as of 1 January 2018.

BCV Group's liquidity coverage ratio (LCR) was an average of 157% in the second half of 2021, above the minimum regulatory requirement of 100% (see Section 5.4).

BCV Group's net stable funding ratio (NSFR) was 125% at 31 December 2021, above the minimum regulatory requirement of 100% in force since 1 July 2021 (see Section 5.4).

³The capital ratio is equal to regulatory capital divided by risk-weighted assets.

⁴The leverage ratio is equal to Tier 1 capital divided by the total exposure measure.

Table 2. Key metricsIn CHF millions, BCV Group, KM1⁵

	a	c	e
	31/12/2021	30/6/2021	31/12/2020
Available capital			
1 Common Equity Tier 1 (CET1)	3,308	3,261	3,252
2 Tier 1 (T1)	3,308	3,261	3,252
3 Total capital	3,334	3,288	3,274
Risk-weighted assets (RWA)			
4 Total RWA	19,265	19,167	18,378
4a Minimum capital requirement	1,541	1,533	1,470
Risk-based capital ratios as % of RWA			
5 CET1 ratio	17.2%	17.0%	17.7%
6 Tier 1 ratio	17.2%	17.0%	17.7%
7 Total capital ratio	17.3%	17.2%	17.8%
FINMA capital ratio requirements			
Minimum total capital ratio (CAO, Art. 42)	8.0%	8.0%	8.0%
12a Total capital buffer (CAO, Annex 8)	4.0%	4.0%	4.0%
12b Countercyclical buffer (CAO, Art. 44 and 44a)	-	-	-
12e Total regulatory capital requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (CAO, Art. 44 and 44a)	12.0%	12.0%	12.0%
Additional capital requirement (CAO, Art. 45)	1.0%	1.0%	1.0%
Total FINMA capital requirement	13.0%	13.0%	13.0%
Basel III leverage ratio			
13 Total Basel III leverage ratio exposure measure	58,853	58,363	55,996
14 Basel III leverage ratio (Tier 1 capital as % of total Basel III leverage ratio exposure measure)	5.6%	5.6%	5.8%
Liquidity coverage ratio (LCR)			
15 Total high-quality liquid assets (HQLA)	13,291	12,032	11,160
16 Total net cash outflow	8,480	8,295	8,199
17 LCR	157%	145%	136%
Net stable funding ratio (NSFR)			
18 Available stable funding	37,563	36,890	35,501
19 Required stable funding	29,993	29,619	28,550
20 NSFR	125%	125%	124%

*FINMA has set a temporary additional capital requirement of 1% for BCV, given the extremely low interest-rate environment and BCV's interest-rate-risk exposure as determined by FINMA.

⁵This table is a summary version of the Table KM1 required by FINMA. Only the FINMA capital ratio requirements are shown in this table; the Basel Committee requirements are less stringent and have not been included to avoid confusion. The full Table KM1 is provided in the Appendix (Table 29). The LCR figures represent the average for the six months preceding the indicated date.

2.2 Capital structure

BCV Group's regulatory capital is composed almost entirely of CET1 capital, with a marginal amount of T2 capital. Regulatory capital is based on the Group's financial statements, which are drawn up in accordance with the FINMA Accounting Ordinance (FINMA-AO) of 31 October 2019, and the Swiss accounting rules for banks, securities firms, financial groups and financial conglomerates of 31 October 2019 (FINMA Circular 2020/1).

CET1 capital comprises paid-in capital, disclosed reserves, and minority interests. At 31 December 2021, BCV's share capital amounted to CHF 86,061,900 and consisted of 86,061,900 fully paid-in registered shares with a par value of CHF 1. CET1 capital is adjusted for regulatory deductions such as goodwill and any shortfall of provisions to regulatory expected losses. BCV has not issued any capital instruments that meet the criteria for inclusion in Additional Tier 1 (AT1) capital. In particular, BCV has no authorized or conditional capital and has not issued any dividend-right certificates. There are no outstanding convertible bonds or options issued by the Bank involving the BCV share.

T2 capital comprises reserves on debt and equity securities carried under financial investments and stated at lower of cost or market, subject to a limit of 45% of unrealized gains, and general provisions allocated under the International Standardized Approach. BCV has not issued any capital instruments that meet the criteria for inclusion in T2.

Table 3. Composition of regulatory capitalIn CHF millions, BCV Group, CC1⁶

	a		a-1	b
	Net figures		References	
	31/12/2021	30/6/2021		
Common Equity Tier 1 (CET1)				
1 Issued and paid-in capital, fully eligible	86	86		c
2 Retained earnings, including reserves for general banking risks and net profit (loss) for the period	3,219	3,159		
3 Capital reserve and currency translation reserve (+/-)	34	35		
5 Minority interests	0	0		
6 CET1 before regulatory adjustments	3,340	3,280		
CET1 regulatory adjustments				
8 Goodwill (net of related tax liability)	-	1		a
12 IRB shortfall of provisions to expected losses	17	5		
16 Net long position in own CET1 instruments	15	12		
28 Total regulatory adjustments to CET1	32	18		
29 Net CET1	3,308	3,261		
Additional Tier 1 capital (AT1)				
36 AT1 before regulatory adjustments	-	-		
43 Total regulatory adjustments to AT1	-	-		
44 Net AT1	-	-		
45 Net Tier 1 capital	3,308	3,261		
Tier 2 capital (T2)				
46 Issued and paid-in instruments, fully eligible	-	-		
48 Minority interests eligible as T2	-	-		
50 Valuation adjustments; provisions and impairments for prudential reasons; compulsory reserves on financial investments	26	26		
51 T2 before regulatory adjustments	26	26		
T2 regulatory adjustments				
52 Net long position in own T2 instruments	-	-		
57 Total regulatory adjustments to T2	-	-		
58 Net T2	26	26		
59 Total regulatory capital (Net T1 & Net T2)	3,334	3,288		

The increase in regulatory capital was due to the recognition of 2021 net profit less the recommended dividend payout (subject to approval at the Annual Shareholders' Meeting).

⁶Net profit for the current fiscal year is not included in regulatory capital at 30 June (Row 2). This table is a summary version of Table CC1, which is provided in full in the Appendix (Table 31).

2.3 Risk-weighted assets

Credit risk accounts for over 80% of the Bank's total risk exposure, in keeping with its business model and risk-taking strategy.

Table 4. Overview of RWA

In CHF millions, BCV Group, OV1⁷

	a	b	c
	RWA		Minimum capital requirements
	31/12/2021	30/6/2021	31/12/2021
1 Credit risk (excluding counterparty credit risk)	15,966	15,911	1,277
2 Of which: standardized approach (SA)	2,341	2,078	187
3 Of which: internal ratings-based approach (IRB)	7,323	7,463	586
4 Of which: supervisory slotting approach	5,765	5,852	461
Of which: assets without a counterparty	537	518	43
6 Counterparty credit risk (CCR)	312	250	25
7 Of which: standardized approach for counterparty credit risk (SA-CCR)	293	209	23
9 Of which: other CCR approach	19	42	2
10 Credit valuation adjustment (CVA)	118	89	9
11 Equity positions in banking book under market-based approach	122	123	10
13 Equity investments in funds – mandate-based approach	0	0	0
14 Equity investments in funds – fall-back approach	8	8	1
14a Equity investments in funds – simplified approach	39	41	3
15 Settlement risk	-	-	-
20 Market risk	158	218	13
21 Of which: standardized approach	158	218	13
24 Operational risk	1,758	1,745	141
25 Amounts below the thresholds for deduction (250% risk weighting)	782	780	63
26 Floor adjustment	-	-	-
27 Total	19,265	19,167	1,541

Risk-weighted assets were relatively stable in H2 2021.

Since end-2017, BCV has been using the new regulatory approaches for its holdings in investment funds (as set forth in Article 63.3^(fbis) of the CAO and in margin number 333 of FINMA Circular 2017/7). The mandate-based approach is used for holdings in real-estate funds; the simplified approach is used for holdings in non-real-estate funds with a synthetic risk indicator of between 1 and 7; the fall-back approach is used for holdings in all other funds.

⁷An additional row has been added under "Credit risk" to indicate non-counterparty-related assets, which consist primarily of real estate and other tangible assets.

3. COMPREHENSIVE RISK MANAGEMENT APPROACH

The framework for risk governance, risk exposure (risk appetite), risk-assessment principles, and risk reporting, as well as other operational guidelines relating to risk management, are defined in the Bank's Risk Management Policy and Strategy (RMPS). The RMPS is the institution-wide risk management framework. It is an internal framework document that is reviewed and approved each year by the Board of Directors.

This section of the report sets out the Bank's risk-management principles, as required by FINMA for Pillar 3 disclosure.

3.1 Risk management objectives and governance

Risk-management objectives

BCV manages all its risks in an integrated and consistent way, using a process that encompasses all of the Bank's activities. The overall goals are to ensure that:

- BCV's risk exposure is evaluated, monitored, and reported in a manner that is appropriate to the economic and regulatory environment;
- BCV's risk-taking capacity is in line with its risk profile;
- BCV earns optimal returns on the risks that it takes and hence on the equity capital committed.

Risk-management governance

All risks are managed according to the same basic principles of governance and organization. The main responsibilities can be summarized as follows:

- The Board of Directors establishes the Bank's policy for managing risk and determines the strategy the Bank will pursue in taking on risk;
- The Board of Directors' Audit & Risk Committee ensures that the risk-management policy set by the Board of Directors is implemented and operational;
- The Executive Board is responsible for ensuring that the risk-management procedures are implemented and operational, and for monitoring the Bank's risk profile. The Executive Board monitors strategic and business risk and supervises the Executive Board Risk Management Committee (EBRMC) in monitoring and reporting these risks. The EBRMC is chaired by the Chief Financial Officer (CFO), and includes the CEO, other division heads, and the head of the Risk Management Department;
- Division heads are responsible for conducting and monitoring the activities of their divisions, regardless of whether the division has a front-line, steering, or business-support role. They have initial responsibility for overseeing, identifying, and managing the strategic, business, credit, market, and operational risks arising from the activities of their divisions;
- The CFO also assumes the role of Chief Risk Officer. The CFO puts forward the risk-management policy and strategy, monitors the Bank's aggregate risk profile, is responsible for capital adequacy, and helps foster a culture of risk management among staff, with the support of the Risk Management Department. Together with the Compliance Department, the CFO ensures that due diligence is taken to combat money laundering and the financing of terrorism, monitor market abuse, and comply with economic sanctions.
- The Chief Credit Officer (CCO) is responsible for analyzing risk for all types of credit-risk exposure assumed by the Bank and, up to the limit of his approval authority (see below), for credit decisions and for monitoring risk exposure on a counterparty basis. The CCO is also responsible for developing and monitoring the models used to measure credit risk, particularly those used in the lending process, and for setting and implementing the criteria and rules governing lending decisions and monitoring.

- The Risk Management Department is responsible for developing and improving the Bank's oversight principles and methods for credit, market, and operational risk; monitoring the Bank's risk profile; and overseeing and executing risk reporting. The Department ensures that the Bank's operational internal control system is effective and in keeping with the Bank's needs, by coordinating the work of the entities responsible for level 2 oversight; it is also in charge of submitting all risk reports to the Bank's governing bodies. Finally, it is responsible for the overnight monitoring of market risk for BCV's trading floor.
- The Compliance Department is responsible for setting up, implementing, monitoring, and adapting the internal regulations and control system needed to combat money laundering and the financing of terrorism, monitor market abuse, and comply with economic sanctions and tax law. The Department is actively involved in raising employees' awareness of the respective obligations and carries out independent checks to ensure that internal regulations are in line with the Bank's activities.
- The Security Department is responsible for setting up, implementing, monitoring, and adapting the system that keeps the Bank's operations, IT systems, and data secure, and the people, infrastructure, and assets within the Bank safe and secure. It pays particular attention to cybercrime. It also makes sure that measures put in place to manage crisis situations and ensure business continuity remain effective and adequate over time.

Audit function

The remits of the Internal Audit Department and external auditors are set out in their respective audit programs and involve assessing the Bank's functioning and processes, and the methods of levels 1 and 2 of the internal control system.

3.2 Risk-taking strategy

BCV's risk appetite (or acceptable risk profile) is determined in accordance with the Bank's business strategy and capital-management strategy. The risk appetite is set so as to be consistent with the Bank's business model as a full-service bank with strong local roots and focused on moderate-growth activities. Granting loans in Vaud Canton is a core element of the Bank's mission and strategy and one that gives rise to credit risk. Market risk arising from the trading book is intended to remain only a marginal source of risk for the Bank.

The Bank has adopted a risk-taking strategy that spells out its risk-taking principles, overall limits, and target values, in order to keep its risk profile at appropriate levels. For credit and market risk, the Bank's Risk Management Policy and Strategy (RMPS) establishes overall risk-exposure limits for a given portfolio or business line. It also includes risk-concentration limits for exposures to a given counterparty, underlying asset, or other risk-concentration factor.

The Executive Board Risk Management Committee, through the CFO, oversees compliance with the RMPS. Any crossed limits or instances of non-compliance with the principles set out in the RMPS are escalated to the Executive Board, which then reports to the Board of Directors.

3.3 Classification of risks and risk-assessment principles

Classification of risks

The Bank's approach to analyzing risk comprises four dimensions:

- Risk exposure, which relates to the fact that its activities and operations expose the Bank to risk;
- Risk factors, which are sources of uncertainty that may adversely affect the Bank's risk exposure;
- Risk events, which are triggered by a change in a risk factor, which, in turn, has an adverse effect on the Bank's risk exposure;
- Risk impact, which is the negative impact that a risk event has on the Bank's interests.

Throughout the Bank, four categories of risk are used to classify risk events:

- Strategic and business risk. Strategic risk arises from economic or regulatory changes that have an adverse effect on the Bank's strategic choices; business risk is the result of competitive or economic changes that have an adverse effect on business decisions for a given strategy;
- Credit risk. This arises from the possibility that a counterparty may default. Credit risk is inherent in all lending exposure;
- Market risk. This arises from potential adverse changes in market parameters – particularly prices and implied volatility – and other market effects (e.g., correlation between asset prices and market liquidity). Liquidity risk, both in terms of the structural funding of activities and short-term liquidity management, is also deemed to be a component of market risk. Market risk is inherent in all market exposure;
- Operational risk. This arises from a possible failure relating to inadequate processes, people, and/or information systems, or even malicious behavior. Operational risk includes the risk of non-compliance; i.e., the risk of the Bank breaching legal requirements, standards, and regulations. Operational risk is inherent in all business activity.

For all risk types, the Bank seeks to protect itself against three types of potential impact:

- The financial impact, that is, a decrease in the Bank's net profit and/or a drop in the book or economic value of the Bank's capital;
- The regulatory impact, that is, an intervention by the authorities as a result of a failure by the Bank to comply with its legal and regulatory obligations;
- The reputational impact, that is, negative publicity concerning the Bank; the severity of the impact will depend on the reaction of the Bank's main stakeholders. For example, there could be negative newsflow in the press or on social media, or a parliamentary inquiry or other major incident affecting relations between the Bank and the Vaud Cantonal Government or the general public.

Risk assessment

Throughout the Bank's businesses and portfolios and for every position and transaction, the Bank assesses and monitors its risk profile, i.e., its exposure to strategic, business, credit, market, and operational risks. The Bank assesses the potential financial, regulatory, and reputational impact of these risks.

Risk assessment generally involves analyzing the following:

- *Risk exposure*
This involves determining which risk factors the Bank is exposed to as a result of its activities or operational processes.
- *Risk factors and events*
This involves identifying relevant risk factors and determining potential risk events. For strategic and

business risk, this includes all economic and regulatory factors that may affect the Bank's business activities and its operational processes. For credit, market, and operational risk, the relevant risk factors and risk events are defined according to the nature of the Bank's activities.

These risk factors include climate-related risk factors. Details of these risk factors and how they are incorporated into the Bank's risk assessments are provided in Section 7, "Climate-related risks."

- *The impact of risks*

This involves determining the potential financial, regulatory, and reputational impact.

For risks with a potential financial impact, i.e., that may result in a decrease in the Bank's net profit and/or in the value of its capital, this means defining *loss metrics* and *risk metrics* and determining *capital requirements* (in keeping with FINMA requirements). *Loss metrics*, which are used to determine the potential financial impact, are calculated in accordance with the guidelines set out in the RMPS; they are developed for each risk category set out above.

Risk reports

Risk-related reports are intended to provide an overview of the Bank's risk profile at a given point in time, in order to identify any increases in risk exposure or changes in risk profile. The head of the Risk Management Department has overall responsibility for compiling these reports. If the reports show a material deterioration in the Bank's risk profile, the Department head informs the CFO, who then informs the Executive Board, the Chair of the Audit and Risk Committee, the Chairman of the Board of Directors, and the Internal Audit Department.

The Bank's Risk Report gives insight into the overall economic climate and trends in the Bank's business and strategic risk, credit risk, market risk, and operational risk. This report also helps assess the financial impact of those risks and determine whether risk exposure is within the limits set by the RMPS.

For credit risk, the Risk Report provides information on the following items in particular:

- For portfolios: breakdown between banks and non-banks and by industry, segment, region, and exposure to climate-related risk factors (based mainly on the energy profile of financed real estate, corporate clients' business sectors, and the type of goods involved in trade-finance transactions); impaired vs. non-impaired loans; provisions; expected losses; capital requirements; and compliance with limits in the RMPS for specific portfolios;
- For counterparties: major risks; counterparties with the largest provisions; a watchlist for each business line; and compliance with limits in the RMPS for specific counterparties.

For market risk, the Risk Report provides information on the following items in particular:

- Trading book – Value of the trading book; use of funding limits; use of VaR limits; and compliance with limits in the RMPS;
- Interest-rate risk in the banking book – Equity duration; the sensitivity of the net interest margin to major stress scenarios; and compliance with limits in the RMPS;
- Liquidity risk – Short-term funding structure; total liquidity; concentration risk on short-term deposits; and compliance with limits in the RMPS.

For operational risk, the Risk Report provides information on the following items in particular:

- Key risk indicators (KRIs) for the main operational risks;
- Provisions and losses resulting from operational risk, and risk-tolerance tracking (number of incidents having an impact each year, and the amount of the impact in Swiss francs each year);
- The most significant new provisions and losses.

Most data in the Risk Report are updated monthly. Every six months a report on the Risk Management Department's operations is included. The Executive Board Risk Management Committee reviews the Risk Report every month; the Executive Board, Audit and Risk Committee, and Board of Directors review it every quarter. Once approved, the quarterly Risk Report is also sent to the head of the Internal Audit Department, the Chief Compliance Officer, and the entity responsible for the Bank's independent audits.

4. CREDIT RISK

4.1 Credit-risk framework

Strategy and processes

Guidelines for taking on credit risk

The Bank's lending activities are focused on Vaud Canton; lending does however take place to a lesser extent in other parts of Switzerland and other countries for specific client segments and products. Through its lending activities, the Bank aims to contribute to the development of all areas of the private-sector economy, to mortgage lending, and to the financing of public-sector entities within the Canton. The Bank pays particular attention to the principles of economically, environmentally, and socially sustainable development.

Lending at the Bank is based on the principle that a borrower must be able to fully repay any loan within a given period, or that the Bank may be released from any commitments it may have in regard to counterparties, while receiving fair compensation for the risks incurred and the work undertaken.

The Bank applies a differentiated pricing policy according to the estimated degree of risk. Where preferential terms are requested due to the extent of the Bank's business relationship with the counterparty or business group, the overall return on the business relationship is taken into consideration.

The Bank does not engage in pledge financing or name lending. The lending decision takes into account the solvency of the counterparty, the project's earnings capacity, and the management's capabilities; these factors take precedence over collateral value or reputation.

The Bank avoids financing or supporting illegal or immoral activities through its lending facilities. The Bank also avoids facilitating, through its lending facilities, activities that could entail a risk of money laundering, insider trading, corruption, or activities that would breach in any other way the Swiss banks' code of conduct with regard to the exercise of due diligence. The Bank avoids operations that may damage its reputation or image.

The Bank takes account of lending-related environmental and social risks and impacts. It has put in place a set of rules to ensure that it does not finance activities, projects, or counterparties that do not comply with its related standards. It has also developed indicators that it uses to monitor the lending portfolio and track specific risks (see also Section 7, "Climate-related risks").

Standards and procedures for lending and loan renewals

Before taking on credit risk, the Bank conducts an analysis of the nature and complexity of lending commitments, using the appropriate internal methods for that type of transaction. BCV will not grant, increase, or renew loans to debtors until it has assessed solvency, i.e., until it has determined the appropriate internal counterparty rating of the probability of default using established methods. Risks relating to transactions and the return on commitments are also analyzed. It is in this context that the collateral for the commitment is identified and evaluated.

For both new and existing banking relationships, the Bank studies the economic background, the nature of and the reasons for the transaction, as well as the relationship between the parties involved. The Bank seeks to obtain a detailed view of the economic and personal situation of counterparties, and, as necessary, of the beneficial owners, the guarantors, or the beneficiaries of guarantees. The information obtained is carefully verified.

The Bank develops, reviews, and uses standard criteria for lending decisions. For financing single-family homes and income-producing real estate, these criteria were chosen, in particular, for their reliability and clarity.

Contractual documentation for standard lending operations is drawn up using models and/or guidelines that have been validated by the Bank's Legal Department. For some lending operations, the Bank's

legal department or, if necessary, external experts may be called upon. Contractual provisions aim to ensure that the funds are used in accordance with the stated purpose of the lending facility and that the Bank obtains any requested financial information within the stated deadlines. For medium- and long-term lending commitments, the contract is written in such a way as to ensure that the Bank's position as lender is not subordinated to that of other creditors without its agreement, in terms of both collateral and the counterparty's position within a business group. For long-term commitments that cannot be terminated at any time based on the Bank's General Conditions, or for which the Bank cannot call in additional collateral at any time, the Bank adds a termination clause to hedge against the increased risk.

An application is prepared for all lending decisions. The application clearly states the reasons, conditions and contractual terms associated with the risk taken, and in particular the credit limit granted to the counterparty or business group. These applications are submitted for approval to the competent body according to a defined delegation chain.

Reexamination of lending commitments and collateral

Lending commitments are reviewed to assess any change in the counterparty's solvency or the value of the collateral, and to determine whether the commitments should be maintained at the existing level or reduced. The Bank uses an internal timetable to ensure that a periodic review is conducted of all lending commitments associated with a business group together with the contractual terms. A similar timetable is also used to review the level of collateral.

In addition to these regular reviews, the Bank uses a system of alerts under which specific commitments are reviewed outside of the normal timetable if any deterioration is detected. These alerts could be triggered and a review required, for example, if payment deadlines are missed or if there is a delay in the submission of information required to properly monitor lending commitments.

Decisions made on the basis of these reviews are subject to a delegation chain similar to the one used to assess whether to grant a new line of credit.

Limits, portfolio monitoring, and special measures

Within the credit portfolio, global risk limits are defined, mainly for the purpose of tallying up exposures that taken together could have a major impact on the Bank's net profit and economic capital. These limits are defined and monitored:

- For the exposure, the expected loss and the capital requirement for various client segments and for activities outside Vaud Canton and outside Switzerland.
- For the amount and term of the lending commitments in each foreign country in which the Bank takes on credit risk. The limits are determined through an internal analysis of the financial and settlement risks associated with the financing in place in the various countries.
- For the amount of aggregate positions for a given business group in order to monitor concentration risk.

If necessary, in addition to setting and monitoring these limits, the Bank analyzes specific portfolios that are deemed to be exposed to potential or actual adverse conditions. These analyses may lead to proactive measures for a sub-grouping of the counterparties in question in order to enhance credit-risk monitoring.

Furthermore, in case of extraordinary events, such as a significant decline in the local or broader property market, the dates on which collateral is reviewed may be moved forward for groups of collateral identified in accordance with various criteria (by region, property type, age of existing valuation, etc.) to avoid a situation in which the Bank's information systems contain obsolete and overestimated amounts for the market value of properties.

Monitoring and treating counterparties reputed to be in financial difficulty and counterparties in default

Counterparties that present a particularly high risk of default but are nevertheless considered to be performing are said to be "reputed to be in financial difficulty" (RD). These counterparties, along with counterparties that are "in default" (ID), are subject to closer monitoring.

Lending commitments to RD or ID counterparties are treated by the Bank individually, quickly and with the necessary rigor, in accordance with ethical and compliance-related rules. These positions must

generally be made sound over the course of three to four years. Where this strategy cannot be applied, the Bank takes the appropriate measures to minimize its losses.

Structure and organization

Responsibilities in the credit process

In processing credit operations, the Bank as a general rule separates its client-facing divisions (Corporate Banking, Retail Banking, Private Banking, and Asset Management & Trading), which are responsible for advising, selling, selecting, pre-analyzing, and pricing the transactions, from the Credit Management Division, whose departments are in charge of the other phases of the lending process, such as analysis, granting loans, arranging the financing, and monitoring credit limits. In addition to the principle of separation, rules exist to avoid potential conflicts of interest between counterparties, on the one hand, and analysts and specialists, on the other.

Delegation chain for credit-related decisions

The decision-making process involves approving or reviewing a position and validating the internal counterparty rating of the probability of default as well as any overrides. To determine the competent body, the Bank applies a differentiated delegation chain that ensures that large and high-risk commitments are dealt with at the highest level, guaranteeing that Management is appropriately involved in taking on credit risk.

The competent body depends on the nature of the commitments and the level of credit risk of the business group to which the counterparty belongs. Decision-making authority is attributed individually or to credit committees, in accordance with a set of approval limits for each type of commitment (e.g., loans and advances to customers, interbank lending, and loans to employees and members of the governing bodies). These limits, which are different for credit decisions and reviews of existing commitments, depend on the internal counterparty rating of the probability of default, the nature, amount and term of the lending commitment, and the level and quality of the collateral for the financing. In addition, should certain lending criteria not be met, any decision to grant or increase financing for single-family homes and income-producing real estate would have to be made higher up the credit-decision-making chain. For each type of lending commitment, there is a distinct set of approval limits for decisions relating to short-term overruns or overdrafts.

The Board of Directors is at the top of the decision-making hierarchy and systematically reviews the most important credit-related decisions. Immediately below the Board of Directors are the Executive Board's Credit Committee (EBCC) and the Chief Credit Officer (CCO), who heads the Credit Management Division. The EBCC and the CCO have widespread lending authority, which encompasses all of the Bank's activities. For lower amounts, lending authority is allocated according to the activity, beginning with the sector-specific credit committees. Lower down still, the analysts in the Credit Management Division, with different levels of authority, have certain powers that are specific to their field. Finally, some low-risk forms of lending, such as standard mortgage loans, are approved on the basis of standardized criteria through an automated credit analysis, using scores obtained from rating models defined by the Bank.

Lending commitments to counterparties "reputed to be in financial difficulty" (RD) or "in default" (ID) are subject to a separate delegation chain. There is an additional set of approval limits for decisions relating to taking on credit risk abroad.

Decisions taken at a given approval level are checked *a posteriori* by the level above, through a full or selective review of lending decisions deemed to be significant.

Responsibility for identifying and monitoring RD/ID loans

Any entity within the Bank that is involved in the lending process may suggest that a counterparty be included in the RD and ID categories on the basis of criteria that are defined in the same way for all of the Bank's activities. Entities with lending authority are authorized to decide whether to include a client in these categories.

A specialized department within the Credit Management Division monitors these commitments. It is separate from the front-line units that generate lending commitments. Once lending commitments are sound again, they are monitored by the front line.

Internal documentation and regulations

The guidelines for lending activities are set out in the Bank's Credit Policy. In particular, it sets out the basic principle for how authority for granting and reviewing loans is allocated. The delegation chain is then explained in detail in the Bank's Lending Policy Rule Book. Together with the Technical Standards (technical criteria and limits for lending), these documents form the framework for the Bank's lending activities, which is established in accordance with the Bank's Risk Management Policy and Strategy.

The Executive Board defines and develops the Credit Policy, upon the recommendation of the CCO, and submits it to the Board of Directors (BoD) for approval. The BoD reviews the Credit Policy periodically. All those involved in the lending process are responsible for monitoring the Credit Policy and ensuring that it is adhered to. The CCO oversees its application.

The Lending Policy Rule Book sets out the rules and guidelines for decisions concerning the Bank's credit risk at the parent company level (delegation chain). It is established in accordance with the Bank's by-laws and Credit Policy.

The EBCC develops and submits the Lending Policy Rule Book and its updates to the BoD.

The Technical Standards define the type of collateral recognized by the Bank and, for each type of collateral, the loan-to-value ratio required for a loan to be considered secured. The Technical Standards are subject to validation by the BoD.

At the operational level, lending activities are structured around a series of internal directives that provide details of the guidelines set forth in the framework documents.

Risk assessment

Risk event

A credit-risk event is a default by a counterparty: the Bank considers a counterparty to be in default when the counterparty is past due more than 90 days on any material credit obligation to the Bank or when the Bank considers that the counterparty is unlikely to pay its credit obligations to the Bank in full. Impaired loans are the same as defaulted loans.

Past-due loans are loans where the counterparty is more than 90 days late on a payment obligation to the Bank. Past-due loans are considered defaulted loans apart from some exceptions related to operating procedures (total volume less than CHF 1 million). The Bank does not use the concept of a restructured exposure.

Risk exposure

The Bank considers all credit-risk exposure that arises from its activities, including its activities as a custodian bank, with the following counterparties or groups of counterparties:

- Retail and private banking clients;
- Corporates, excluding trade finance;
- Trade finance;
- Fund-management companies;
- Public-sector entities (municipalities and regional, local, and national governments);
- Bank counterparties.

For any counterparty, exposure to credit risk in the trading book and banking book (both on and off the balance sheet) occurs in the following forms:

- Exposure in the form of a financial claim (mortgage loans, fixed-term advances, current accounts with credit limits, overdrafts, investments, and current accounts held by the Bank with other banks);

- Off-balance-sheet exposure resulting from undrawn portions of notified limits, contingent liabilities (guarantees) issued by the Bank on behalf of the counterparty, guarantees or other forms of commitment (letters of credit, avalized drafts) received from the counterparty as collateral or for which the Bank takes over the risk;
- Exposure resulting from forward contracts and OTC derivatives, taking into account netting agreements and collateral management agreements;
- Exposure in terms of shares and other equity securities (including equity derivatives) for which the counterparty is the issuer (in the banking book and net positions in the trading book);
- Exposure resulting from repos/reverse repos and securities lending/borrowing transactions;
- Settlement exposure, especially on currency transactions. It should be noted that when positions are unwound through a simultaneous settlement system, such as CLS (Continuous Linked Settlement), settlement risk is not considered.

The methods defined determine the amount of exposure by category.

Loss metrics

The Bank uses the following credit loss metrics:

- *Expected credit loss on non-impaired exposure*: This is the amount that the Bank expects to lose in a “normal” year as a result of its credit-risk exposure to non-defaulted counterparties. The expected loss is usually determined individually for each loan on the basis of the probability of default and the loss given default. A general description of the method used for analytical purposes is provided below.⁸
- *New provisions on impaired exposure*: The Bank sets aside provisions on newly impaired loans so that the expected credit loss over the loans’ remaining lifetime is recognized as an expense during the period in which they became impaired. This approach ensures that the Bank’s credit-risk provisions cover effective credit losses. The amount of these provisions is generally determined using a parameter-based method in which the provisioning ratio is determined and applied to credit-risk exposure. In some cases, for large commitments or for special or complex situations, the amount of the provision is based on a scenario analysis.
- *Effective credit loss*: This is the actual loss recorded by the Bank *a posteriori* on its exposure to counterparties in default. It results from the write-down or write-off of loans on the balance sheet.

For performing loans not relating to trade finance or real-estate development, the expected loss is determined on the basis of the probability of default and the loss given default.

- *Counterparties’ probability of default, and rating of default risk*

Each counterparty is assigned an internal counterparty default rating depending on its probability of default. Throughout the Bank (parent company), there are seven main internal ratings (B1 to B7) and 16 sub-ratings (B1.1 to B7).

The ratings B1 to B5.2 are used for counterparties that are neither RD nor ID; B6 is used for counterparties that are RD, which are also considered performing. Counterparties rated B7 are ID or non-performing.

A rating method is used to assign an internal rating to each performing counterparty. Counterparties (individuals, companies, banks, etc.) are distinguished by factors that may affect their solvency, the nature of available explanatory data and the level of loss-risk they represent. Rating methods are segmented into groups of counterparties so that counterparties that are deemed similar according to

⁸In order to meet the requirement to set aside provisions for inherent credit risk on non-impaired loans (Articles 25 and 28 FINMA-AO), the Bank also uses expected loss models to determine the provisions for each non-impaired credit-risk exposure. Information on provisions for inherent credit risk is provided in the Annual Report.

these analytical factors are handled in the same way.

For each rating segment the rating method for performing clients comprises a "score" and an "analyst's assessment." Considered together, the score and the analyst's assessment are used to assign an internal rating to each performing counterparty.

- For the score component of the rating method, an internal rating is identified using one of the following three procedures: applying a calculation function for the probability of default calibrated statistically or based on an expert's assessment, assigning the counterparty to a default probability slot, or transferring a counterparty from one rating to another in accordance with a system of rules. The Bank also employs standards and methods to recognize the impact on the probability of default of factors such as the business group or government support at a local, regional, or national level.
- The "analyst's assessment" component of the rating method defines the guidelines to be followed by an expert when analyzing the counterparty's debt quality, alongside the score. The competent body sets and approves the internal rating that is eventually determined as well as the override, if necessary.

Specific criteria are defined for the purpose of identifying RD counterparties. A counterparty is deemed RD when one of the following two conditions is met:

- The Bank believes there to be a high risk that part of its exposure to credit risk on the counterparty will not be recovered.
- A significant breach of the contract on any of the forms of credit extended to the counterparty by the Bank has occurred and has not been remedied without a temporary or definitive exemption being granted.
- *Loss given default*

To calculate the loss given default, the Bank takes into account the expected exposure at the time of default, the expected coverage ratio at the time of default, the nature of the collateral, and the rate of loss on secured and unsecured parts. The internal models used are calibrated so that the loss given default produced by the calibrated model corresponds to an effective loss that takes into account discounted values of all cash flows paid and collected by the Bank after the default, including fees associated with managing the loans of counterparties in default and with recovering loans.

A supervisory slot is allocated to loans relating to real-estate development and trade finance in order to estimate the expected loss. The slot assignment is based on a structured analysis of the corresponding transactions. It meets the supervisory slotting criteria for specialized lending in Annex 4 of the International Convergence of Capital Measurement and Capital Standards: a Revised Framework (Basel II Accord).

Risk metrics

The Bank's main credit-risk metrics are:

- The expected loss (see above);
- Loss under stress scenarios. The Bank applies cyclicity stress tests and global stress tests:
 - Cyclicity stress tests for credit risk indicate the extent of the change in capital requirements in the event of an economic slowdown. They are based on changes in two key credit-risk variables, which are probability of default and loss given default;
 - Global stress tests are part of the broad approach for estimating (by risk category) the impact of a number of stress scenarios on the Bank's net profit in order to assess capital adequacy. For credit risk, this allows the need for new provisions to be estimated for each stress scenario, should it occur. The stress scenarios are defined for the entire lending portfolio on the basis of historical observations (for example, the property market correction in the early 1990s) and macroeconomic analyses.

Unless otherwise indicated, credit-risk metrics address a risk horizon of 12 months.

Capital requirements for credit risk

For most of its credit-risk exposure (around 90% of risk-weighted assets), the Bank determines its regulatory capital requirements (Pillar 1) using the Foundation Internal Ratings-Based approach (F-IRB). For exposure outside the scope of the F-IRB approach, capital requirements are determined using the International Standardized Approach (SA-BIS).

Table 5. Credit-risk exposure by approach applied
In CHF millions, at 31 December 2021, BCV Group, CRE⁹

Category	Credit risk		Counterparty credit risk		Total
	F-IRB	SA-BIS	F-IRB	SA-BIS	
Central governments and central banks	-	100%	-	0%	13,987
Banks and securities firms	47%	30%	23%	0%	2,343
Non-central govt. public-sector entities; multilateral development banks	47%	52%	0%	-	1,790
Corporates	79%	20%	1%	0%	17,197
Retail	96%	4%	0%	0%	21,048
Total	63%	35%	1%	0%	56,365

Exposures outside the scope of the F-IRB approach include those for which the Bank does not intend to put in place a rating model. These exposures include the Swiss National Bank, the Swiss Federal Government, Swiss cantonal governments, the Mortgage-Bond Bank of the Swiss Mortgage Institutions, the Central Mortgage-Bond Institution, some foreign bank and sovereign bond issuers, SMEs that do not have financial statements or that only have loans that are fully secured by cash, securities or a joint and several loan guarantee as described in Article 3 of the Covid-19 Joint and Several Loan Guarantee Ordinance, insurance companies, investment funds, counterparties with no loan agreement (i.e., for overdrafts), and exposures at the Bank's subsidiaries.

Table 6. Risk-weighted assets by approach applied
In CHF millions, at 31 December 2021, BCV Group, CRE

Category	Credit risk		Counterparty credit risk		Total
	F-IRB	SA-BIS	F-IRB	SA-BIS	
Central governments and central banks	-	100%	-	-	12
Banks and securities firms	61%	31%	8%	0%	938
Non-central govt. public-sector entities; multilateral development banks	57%	43%	0%	-	489
Corporates	84%	15%	0%	0%	9,744
Retail	93%	7%	0%	0%	4,402
Total	84%	15%	1%	0%	15,585

⁹Exposure at default (EAD) after applying credit conversion factors. Credit risk and counterparty credit risk excluding non-counterparty-related assets, credit valuation adjustments, and central counterparties. Categories defined by FINMA (Tables CR4 and CR7), also described in Section 8.3.2.

4.2 Loans and debt securities

This section covers loans to customers and banks (excluding securities financing transactions and derivatives) and debt securities in the financial investments portfolio. These loans and debt securities correspond to the credit-risk exposure set out in FINMA Circular 2016/1 “Disclosure – banks.” Securities financing transactions (repo and reverse repo agreements) and derivatives are discussed in Section 4.3, “Counterparty credit risk.”

4.2.1 Portfolio quality

Most loans to customers are located in Vaud Canton (80%). They are composed primarily of on-balance-sheet exposure in the form of mortgage loans and various financing in the form of current accounts (e.g., loans for construction, operational, investment, or cash-management purposes).

Most of the exposure to banks and debt securities is in Switzerland (87%) but outside of Vaud Canton. These exposures mainly comprise cash held with the SNB, investments with the Central Mortgage-Bond Institution and the Mortgage-Bond Bank of the Swiss Mortgage Institutions, and exposures to other Swiss banks. Exposure in the European Union arises mainly from cash-management and trading transactions, whereas exposure in the rest of the world is a result of trade-finance activities.

Table 7. Credit-risk exposure by type of exposure and region

In CHF millions, at 31 December 2021, BCV Group, CRB¹⁰

Region	Exposure			Provisions and impairments		
	Total	Non- impaired	Impaired	Total	Non- impaired	Impaired
Customer loans	42,440	42,251	189	114	37	78
Vaud Canton	33,995	33,846	149	68	20	48
Rest of Switzerland	6,640	6,623	17	15	9	7
European Union and North America	333	332	1	2	2	0
Rest of world	1,473	1,450	23	29	6	23
Bank loans and debt securities	18,153	18,153	-	3	3	-
Vaud Canton	10	10	-	0	0	-
Rest of Switzerland	15,780	15,780	-	0	0	-
European Union and North America	1,417	1,417	-	0	0	-
Rest of world	946	946	-	3	3	-
Total	60,593	60,404	189	117	39	78

¹⁰Tables 7 through 9 show exposure at default (EAD) before applying credit conversion factors. Non-counterparty-related assets are not included.

Table 8. Credit-risk exposure by risk segment

In CHF millions, at 31 December 2021, BCV Group, CRB

Risk segment	Exposure			Provisions and impairments		
	Total	Non- impaired	Impaired	Total	Non- impaired	Impaired
On- and off-balance-sheet exposure	56,412	56,222	189	117	39	78
Retail	12,253	12,209	44	11	3	7
Private banking	7,625	7,574	51	14	2	12
SMEs	5,727	5,668	59	34	9	26
Real-estate professionals	9,425	9,425	-	4	4	-
Large corporates	3,377	3,365	12	22	12	10
Public-sector entities	2,454	2,454	-	0	0	-
Trade finance	1,557	1,534	23	30	7	22
Banks	13,994	13,994	-	3	3	0
Debt securities	4,181	4,181	-	-	-	-
Total	60,593	60,404	189	117	39	78

The Bank classifies counterparties into eight risk segments according to their type, main business, and extent of the banking relationship with BCV.¹¹

A large percentage of the Bank's exposure (33%) represents lending to retail and private banking customers in the form of mortgages and Lombard loans.

Companies account for 33% of total exposure, which is divided among SMEs, real-estate professionals, large corporates, and trade-finance counterparties.

Public-sector exposure mainly consists of limits granted to the Swiss Federal Government, municipalities, and the Vaud Cantonal Government.

Bank counterparties account for 23% of total exposure, comprised mostly of cash deposited with the SNB.

Debt securities account for 7% of total exposure and include investments with the Mortgage-Bond Bank of the Swiss Mortgage Institutions and the Central Mortgage-Bond Institution in the amount of CHF 2.3bn.

¹¹Risk segments are described in Section 8.3.2.

Table 9. Breakdown of exposure by residual contractual maturity

In CHF millions, at 31 December 2021, BCV Group, CRB

Category	< 1 yr	1-5 yrs	> 5 yrs	No maturity	Subsidiaries	Total Group
Central governments and central banks	844	290	251	12,266	370	14,020
Banks and securities firms	1,218	412	194	533	27	2,384
Non-central govt. public-sector entities; multilateral development banks	710	580	923	591	2	2,806
Corporates	5,149	2,061	1,962	10,853	1	20,026
Retail	859	81	230	19,331	856	21,357
Total	8,779	3,424	3,559	43,574	1,257	60,593

There is no contractual maturity date for repayment on 72% of the Bank's exposure. This is the case for cash held with the SNB, all mortgage loans, and some credit limits. Most mortgage loans are currently fixed-rate loans, which means there are maturity dates on which the loans can be renewed. At the maturity dates, most fixed-rate loans are renewed with new interest rates. For tax reasons, it is rare for clients residing in Switzerland to fully pay down their mortgage loan.

Table 10. Credit quality of assets

In CHF millions, BCV Group, at 31 December 2021, CR1

	a	b	c	d
	Gross carrying value of			
	Defaulted exposure	Non-defaulted exposure	Provisions and impairments	Net value
1 Loans (excl. debt securities)	176	48,918	103	48,992
2 Debt securities	-	4,181	-	4,181
3 Off-balance-sheet exposure	13	7,305	14	7,304
4 Total	189	60,404	117	60,477

Impaired or defaulted loans amounted to CHF 189m at 31 December 2021 and accounted for 0.3% of total exposure. A provision of CHF 78m was recognized for these loans; this represents an average provisioning rate of 41%, reflecting the high quality of the collateral provided on these loans. Provisions are determined individually for each defaulted loan, taking into account the liquidation value of collateral and the characteristics of the counterparty.

Non-impaired loans amounted to CHF 60.404bn. Provisions for inherent credit risks on those loans stood at CHF 39m. The provisions were calculated based on the 12-month expected loss for loans relating to B1 to B5 counterparties (CHF 32m at 31 December 2021) and on the expected loss at maturity for high-risk loans to counterparties "reputed to be in financial difficulty" (CHF 7m at 31 December 2021). Provisions for country risk (zero at 31 December 2021) cover non-defaulted exposure in countries where the financial or settlement risk rating is below a given threshold.

Table 11. Changes in the stock of defaulted loans and debt securities

In CHF millions, BCV Group, CR2

	a
	Defaulted loans
1 Defaulted loans and debt securities at end of previous reporting period	249
2 Loans and debt securities that have defaulted since the last reporting period	27
3 Amounts returned to non-defaulted status	30
4 Amounts written down or written off	35
5 Other changes	-22
6 Defaulted loans and debt securities at end of reporting period	189

Defaulted loans and debt securities fell CHF 60m over the period, mainly due to reduced exposure to defaulted corporate loans. 88% of defaulted loans relate to counterparties that went into default in or after 2014.

4.2.2 Risk mitigation

The Bank seeks to appropriately secure its exposure through the use of collateral. Various types of collateral are recognized. They include:¹²

- Pledges on real estate (primarily mortgage deeds on various types of real estate);
- Pledges on financial assets (mainly cash and securities accounts);
- Guarantees (mainly loan guarantees and bank guarantees).

The valuation of collateral recognized by the Bank is based on the principle of market value, and is carried out as often as appropriate for the type of collateral. Pledges on real estate and financial assets are valued as follows:

- The valuation of pledged real estate is carried out using methods appropriate to the type of real estate: models are used for standard real estate like houses and apartments, while other types of properties, like hotels, are appraised. The frequency at which real estate is valued depends on the type of property, as do the standard loan-to-value ratios for the loans secured by this collateral.
- Securities portfolios and other financial assets pledged as collateral for Lombard loans are valued daily. Loan-to-value ratios are defined by type (shares, debt securities, fund units, fiduciary accounts, precious metals, or structured products), country of domicile, currency risk, the liquidity of the security, the counterparty's default risk, and the residual term for debt securities, together with portfolio diversification.

¹²BCV does not net out on- or off-balance-sheet items (except for securities financing transactions and derivatives, which are discussed in the "Counterparty credit risk" section).

Table 12. Credit-risk mitigation techniques – overview

In CHF millions, at 31 December 2021, BCV Group, CR3

	a	b1	b	d
	Exposures unsecured: carrying amount	Exposures secured	Exposures secured by collateral	Exposures secured by financial guarantees
1 Loans (excl. debt securities)	18,776	30,216	29,009	1,207
2 Debt securities	4,115	66	-	66
3 Total	22,891	30,282	29,009	1,272
4 Of which: defaulted	15	89	79	10

4.2.3 IRB approach

4.2.3.1 IRB approach (excluding specialized lending)

BCV obtained approval from FINMA to use the Basel Foundation IRB approach (F-IRB) to determine regulatory capital requirements for credit risk beginning on 1 January 2009.

Structure of IRB rating systems

The rating system for default risk is composed of a series of rating models. In all cases, the aim is to assess the one-year probability of default, in the form of an internal counterparty default rating. The following models are used for the categories for which the Bank obtained F-IRB approval (they are named after the population to which they apply):

- BCV staff (default probability pool);
- Private banking (default probability pool);
- Retail (default probability statistical scores);
- SMEs (several default probability statistical scores, depending on the nature of the client and the data available);
- Large corporates (expert default-probability scores);
- Banks (expert default-probability scores);
- Municipalities in Vaud Canton (expert default-probability scores).

The Bank has also defined and implemented a system of rules governing the transmission of internal ratings for counterparties that are related in terms of credit risk. The scores are accompanied by the analyst assessment rules.

All these models, with the exception of the rating model for bank counterparties, generate an estimate of the probability of default without using external ratings. When assessing default risk, the rating model used for bank counterparties takes into account, among other factors, the ratings issued by the main ratings agencies (Moody's, Fitch, and Standard & Poor's).

The Bank determined the scope of application of its models by grouping together similar counterparties; i.e., counterparties that could all default for related reasons and for which the Bank has a set of common data that can be used for modeling. The scope of its models matches these groups where they present a material, coherent risk.

Internal loss given default (LGD) and exposure at default (EAD) models are used to calculate regulatory capital requirements for retail portfolios.

LGD is the economic loss to the Bank if a counterparty defaults. The economic loss is calculated as the difference between the Bank's exposure to the counterparty at the time of default and the present value of all cash flows that the Bank stands to receive from the counterparty after its default. The Bank's internal LGD model factors in both the loss on the exposure and the workout costs. LGD is calculated by loan tranche, as each tranche is secured by different collateral (e.g., real estate, other securities, and guarantees); there may also be a portion not secured by collateral. Each tranche is given a loss rate. The LGD for the total loan is generally the weighted average of the loss rates for each tranche, including any unsecured tranches. The loss rates for each type of collateral are determined using data from a recessionary period in Vaud Canton (the early 1990s) to include the downturn characteristics required by regulators. A counterparty's LGD is separate from its probability of default (PD).

The credit conversion factors (CCFs) used for the Bank's internal EAD model are either calculated using a conservative approach (100% for undrawn credit limits) or based on prudential CCFs (contingent liabilities).

Use of ratings

In addition to being used to calculate regulatory capital requirements under the F-IRB approach, internal ratings are used for numerous purposes (in the front, middle, and back offices). Here are the main uses:

- Decision-making support when credit facilities and other commitments are granted or renewed;
- Defining lending authority and the intensity of monitoring;
- Setting risk-adjusted prices;
- Creating provisions;
- Monitoring the performance of business units;
- Analyzing risk on the lending book;
- Strategic planning.

The scope of application of certain models for internal needs goes significantly beyond the scope of the corresponding F-IRB approval. Internal LGD/EAD models are used to estimate the expected loss on most of the Bank's credit portfolios and not only on the retail portfolios. Furthermore, internal rating models for default risk are used for a number of portfolios for which the Bank does not intend to seek IRB approval.

Managing and integrating the reduction in credit risk

The principles used to recognize and value collateral are the same for the portfolios for which BCV has obtained F-IRB approval for calculating regulatory capital requirements as for the rest of its lending portfolio.

Rating system's control mechanism

The rating system's control mechanism obeys the principles of the Bank's internal control system. It is composed of three levels of internal oversight. The first two levels are under the responsibility of the Executive Board, while the third level falls under the Board of Directors:

- Level 1: operational and managerial oversight of business activities, in accordance with the chain of command.
- Level 2: monitoring the appropriateness and effectiveness of level 1 by independent entities.
- Level 3: periodic independent review of levels 1 and 2 by the Internal Audit Department.

For the rating models (PD, LGD, and EAD), or other models affecting the assessment of credit risk, three steps are defined. The objectives and responsibilities for each step are as follows:

Step 1: initial validation

Key components of the initial validation include monitoring the following: the logic of the design; the quality of the data; the selection of variables; the modeling process; the development of results; documentation; programming; and implementation.

Preparatory work for the initial validation is conducted by the units responsible for developing the models as part of their development and improvement work. Operational and managerial oversight of this work (level 1) is also done by these units.

The Validation of Rating Models unit, under the CFO's responsibility, challenges and monitors in both qualitative and quantitative terms the development and improvement work and the initial validation (level 2 oversight) and issues an opinion for the purposes of the initial validation by the Executive Board's Risk Management Committee (EBRMC).

The unit does this using documents drawn up by the unit responsible for developing the models, explaining the main choices made in the design process and describing the quantitative methods used and the results obtained. The documents also indicate the results expected from the models using a set of standardized indicators for explanatory power (for PD models) and indicators of the degree of prudence. The design document for each model is tailored to the type and complexity of the model in question (i.e., whether it is based on a statistical calculation or an expert assessment).

As part of its monitoring work, the Validation of Rating Models unit issues a report of this assessment and its conclusions.

The EBRMC is responsible for the initial validation of a new or improved model, and, by extension, for authorizing its implementation. It bases its validation decisions on reports from the unit responsible for developing the models that summarize the design documents, and on reports from the Validation of Rating Models unit that summarize the findings of the unit's independent assessment and include a recommendation for the initial validation.

Step 2: monitoring the use of models

This refers to the application of models in the Bank's credit and piloting processes.

For the credit process, analysts from the Credit Management Division and the front office are responsible for using the models and thus for calculating the estimators produced by the models. Analysts and the front office are also responsible for ensuring that the estimators are appropriately used in the context of credit decisions (decisions to grant credit as well as pricing decisions). These activities are subject to operational and managerial oversight which is defined by the analysts and the front office (level 1).

For piloting needs, various departments use the estimators produced by these models in the lending process. The Risk Management Department in particular uses rating models to analyze and monitor risk on the loan book and to calculate capital requirements.

Step 3: ongoing validation

Key components of ongoing validation include ensuring appropriate use of the models and compliance with structural and design-related hypotheses, and backtesting performance (precision and discriminating capacity).

Preparatory work for ongoing validation is conducted by the units responsible for developing the models. These units also propose any necessary measures to be taken in response to the results obtained. Operational and managerial oversight of this work (level 1) is carried out by these units.

As during the initial validation, the Validation of Rating Models unit, under the supervision and responsibility of the CFO, challenges and monitors in both qualitative and quantitative terms the ongoing validation (level 2) and issues an opinion on the results of the ongoing validation and the measures proposed, for ongoing validation by the EBRMC.

The unit does this using documents drawn up by the unit responsible for developing the models that describe all the models and characterize their results using a set of standardized indicators for explanatory power (for PD models) and indicators of the degree of prudence.

As part of its monitoring work, the Validation of Rating Models unit issues a report of this assessment and its conclusions.

The EBRMC is responsible for the ongoing validation of a model and for possible measures to be taken in this regard. It is therefore responsible for authorizing a model's continued use, including constraints and measures to be taken. It bases its validation decisions on reports from the unit responsible for developing the models that summarize the ongoing-validation documents, and on reports from the Validation of Rating Models unit that summarize the findings of the unit's independent assessment and include a recommendation for the ongoing validation.

Operational principle behind model validation

The core principle underlying the activities of the Validation of Rating Models unit is "close, but independent." Proximity is achieved by involving the unit in the entire process, starting with the initial steps taken by the design teams, both through regular support and regular discussions. Independence is achieved through the use of operational principles overseen by the EBRMC itself.

Table 13. IRB – Credit-risk exposure by portfolio and PD range

In CHF millions, at 31 December 2021, BCV Group, CR6

	a	b	c	d	e	f	g	h	i	j	k	l
PD range	On-balance-sheet exposure	Off-balance-sheet exposure	Average CCF	EAD post-CRM and post-CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Provisions
3 Banks and securities firms (F-IRB)												
0.00 to <0.15	708	409	23%	802	0.04%	135	45%	2.05	166	21%	0	
0.15 to <0.25	14	42	20%	22	0.21%	18	45%	1.00	10	44%	0	
0.25 to <0.50	32	19	20%	36	0.37%	11	45%	1.01	22	62%	0	
0.50 to <0.75	9	38	29%	20	0.57%	12	45%	1.00	16	77%	0	
0.75 to <2.50	55	17	20%	59	0.92%	25	45%	1.00	56	95%	0	
2.50 to <10.00	136	137	21%	165	6.33%	50	45%	1.00	299	182%	5	
10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	954	663	23%	1,104	1.05%	250	45%	1.77	569	52%	5	3
5 Non-central gov. public-sector entities; multilateral development banks (F-IRB)												
0.00 to <0.15	832	467	0%	809	0.06%	229	45%	3.73	253	31%	0	
0.15 to <0.25	36	31	-	35	0.21%	15	45%	4.11	23	64%	0	
0.25 to <0.50	0	0	-	0	0.37%	1	45%	5.00	0	93%	0	
0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	
0.75 to <2.50	1	0	-	0	0.86%	1	45%	1.93	0	85%	0	
2.50 to <10.00	-	-	-	-	-	-	-	-	-	-	-	
10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	869	498	0%	845	0.07%	246	45%	3.74	276	33%	0	0
9 Corporates - other lending (F-IRB)												
0.00 to <0.15	1,686	1,259	20%	1,934	0.09%	352	44%	2.30	538	28%	1	
0.15 to <0.25	497	211	24%	546	0.21%	106	44%	2.42	248	45%	1	
0.25 to <0.50	399	199	20%	432	0.37%	114	44%	2.11	252	58%	1	
0.50 to <0.75	383	137	33%	424	0.57%	74	45%	2.79	344	81%	1	
0.75 to <2.50	734	285	29%	808	1.43%	220	44%	2.02	794	98%	5	
2.50 to <10.00	106	26	53%	119	5.18%	37	44%	1.82	171	143%	3	
10.00 to <100.00	16	0	-	16	21.00%	8	45%	2.31	37	235%	1	
100.00 (default)	45	2	19%	45	100.00%	12	-	2.19	20	45%	26	
Sub-total	3,866	2,119	23%	4,325	0.66%	922	44%	2.28	2,403	56%	39	38

	a	b	c	d	e	f	g	h	i	j	k	l
PD range	On-balance-sheet exposure	Off-balance-sheet exposure	Average CCF	EAD post-CRM and post-CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Provisions
11 Mortgage-backed retail exposure												
0.00 to <0.15	8,215	68	100%	8,283	0.10%	18,106	13%	2.50	490	6%	1	
0.15 to <0.25	4,118	33	100%	4,152	0.21%	6,808	16%	2.51	533	13%	1	
0.25 to <0.50	3,033	61	100%	3,094	0.37%	4,225	20%	2.53	750	24%	2	
0.50 to <0.75	1,009	34	100%	1,043	0.57%	1,501	20%	2.56	343	33%	1	
0.75 to <2.50	1,921	51	100%	1,972	1.33%	2,728	20%	2.53	1,082	55%	5	
2.50 to <10.00	356	6	96%	361	4.83%	420	19%	2.52	416	115%	3	
10.00 to <100.00	43	1	80%	43	21.00%	42	20%	2.47	81	188%	2	
100.00 (default)	62	0	100%	62	100.00%	55	-	2.50	58	94%	7	
Sub-total	18,755	254	100%	19,008	0.46%	33,885	16%	2.52	3,755	20%	23	11
13 Other retail exposure												
0.00 to <0.15	405	336	99%	737	0.11%	1,780	23%	1.43	53	7%	0	
0.15 to <0.25	33	72	97%	103	0.21%	886	62%	1.49	32	31%	0	
0.25 to <0.50	24	39	96%	61	0.37%	390	79%	1.65	35	58%	0	
0.50 to <0.75	16	27	95%	42	0.57%	209	74%	1.52	29	70%	0	
0.75 to <2.50	58	72	94%	126	1.47%	643	74%	1.55	125	99%	1	
2.50 to <10.00	14	8	96%	22	4.97%	145	66%	1.97	26	119%	1	
10.00 to <100.00	4	3	94%	7	21.00%	51	72%	2.02	13	197%	1	
100.00 (default)	20	2	95%	21	100.00%	247	-	2.41	7	31%	15	
Sub-total	575	558	98%	1,119	0.53%	4,351	39%	1.50	319	29%	19	19
Total	25,019	4,092	35%	26,401	0.51%	39,655	24%	2.44	7,323	28%	86	71

In Tables 13 and 15, the average PD and average LGD subtotals do not include defaulted exposure. In the "Mortgage-backed retail exposure" category in Table 13, risk-weighted assets relating to residential mortgage loans to personal banking clients were calculated using an IRB multiplier of 1.9, pursuant to a ruling by FINMA. In categories 9, 11 and 13 in Tables 13 and 15, risk-weighted assets relating to SME counterparties rated using the latest approved models were calculated using an IRB multiplier of 1.165, pursuant to FINMA's decision.

The segmentation of the Bank's default rating system into groups of counterparties is adapted to the Bank's risk management needs and to its business activities. Within the Bank, both the initial and ongoing model validations are conducted according to these groups. The validation process is distinct from the exposure categorization set forth under Basel III.

The "Banks and securities firms (F-IRB)" portfolio is covered by the bank rating model. The "Non-central government public-sector entities; multilateral development banks (F-IRB)" portfolio is covered by the rating model for Vaud municipalities. The "Corporates – other lending (F-IRB)" portfolio is covered by three rating models (for large corporates, SMEs, and joint and several co-debtors). The "Mortgage-backed retail exposure" portfolio is covered by three rating models (one for retail customers, one for BCV employees, and one for private banking clients). The "Other retail exposure" portfolio is covered by four rating models (one for retail customers, one for BCV employees, one for private banking clients, and one for SMEs).

Table 14. RWA flow statements of credit-risk exposure
In CHF millions, BCV Group, CR8

	a
	RWA amount
1 RWA at end of previous reporting period	7,463
2 Asset size	-72
3 Asset quality	-51
4 Model updates	0
5 Methodology and policy	0
6 Acquisitions and disposals	0
7 Foreign exchange movements	-16
8 Other	0
9 RWA at end of reporting period	7,323

The amount of risk-weighted assets determined using the IRB approach (excluding specialized lending) fell by CHF 139m in the second half of 2021, mainly due to a decrease in exposure to bank counterparties.

Table 15. IRB – Backtesting of PD per portfolio

In CHF millions, at 31 December 2021, BCV Group, CR9

a	b	d	e	f	g	h	i	j
PD range	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate, 2010-2021	
			End of previous year	End of year				
3 Banks and securities firms (F-IRB)								
0.00 to <0.07	0.04%	0.04%	122	116				-
0.07 to <0.28	0.15%	0.16%	34	37				-
0.28 to <1.44	0.68%	0.75%	30	48				-
1.44 to <4.30	3.41%	3.41%	16	11				-
4.30 to <8.99	7.08%	7.08%	46	39				-
8.99 to <100.00	-	-	-	-				-
100.00 (default)	-	-	-	-				-
Sub-total	1.05%	1.44%	248	250	-	-		-
5 Non-central govt. public-sector entities; multilateral development banks (F-IRB)								
0.00 to <0.07	0.05%	0.05%	200	186				-
0.07 to <0.28	0.13%	0.14%	45	58				-
0.28 to <1.44	0.56%	0.61%	5	2				-
1.44 to <4.30	-	-	-	-				-
4.30 to <8.99	-	-	-	-				-
8.99 to <100.00	-	-	-	-				-
100.00 (default)	-	-	0	-				-
Sub-total	0.07%	0.07%	250	246	-	-		-
9 Corporates – other lending (F-IRB)								
0.00 to <0.07	0.05%	0.05%	74	64				-
0.07 to <0.28	0.14%	0.14%	259	394				0.04%
0.28 to <1.44	0.66%	0.68%	440	317				0.13%
1.44 to <4.30	2.16%	2.26%	134	106				2.03%
4.30 to <8.99	6.11%	6.40%	29	22				9.92%
8.99 to <100.00	21.00%	21.00%	7	8				21.92%
100.00 (default)	100.00%	100.00%	14	12				-
Sub-total	0.66%	0.90%	956	922	4	-		0.60%

a	b	d	e	f		g	h	i	j
PD range	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate, 2010-2021		
			End of previous year	End of year					
11 Mortgage-backed retail exposure									
0.00 to <0.07	0.05%	0.05%	6,968	6,849				0.05%	
0.07 to <0.28	0.15%	0.15%	17,059	18,065				0.07%	
0.28 to <1.44	0.56%	0.56%	7,930	7,606				0.23%	
1.44 to <4.30	2.33%	2.29%	1,036	1,071				1.09%	
4.30 to <8.99	6.31%	6.30%	246	197				3.99%	
8.99 to <100.00	21.00%	21.00%	50	42				14.62%	
100.00 (default)	100.00%	100.00%	75	55				-	
Sub-total	0.46%	0.35%	33,364	33,885	23	-	0.19%		
13 Other retail exposure									
0.00 to <0.07	0.05%	0.05%	67	69				0.28%	
0.07 to <0.28	0.12%	0.14%	2,172	2,597				0.15%	
0.28 to <1.44	0.67%	0.66%	1,236	955				0.64%	
1.44 to <4.30	2.26%	2.30%	503	357				2.31%	
4.30 to <8.99	6.25%	6.21%	116	75				6.32%	
8.99 to <100.00	21.00%	21.00%	45	51				19.21%	
100.00 (default)	100.00%	100.00%	286	247				-	
Sub-total	0.53%	0.82%	4,425	4,351	99	5	0.96%		
Total	0.51%	0.42%	-	39,655	126	5	0.32%		

b		c
Internal rating	PD range	External rating equivalent
B1	0.00 to <0.07	AAA/Aaa to A-/A3
B2	0.07 to <0.28	BBB+/Baa1 to BBB/Baa2
B3	0.28 to <1.44	BBB-/Baa3 to BB-/Ba3
B4	1.44 to <4.30	B+/B1
B5	4.30 to <8.99	B/B2 to B-/B3
B6	8.99 to <100.00	CCC+/Caa1 to C/C
B7	100.00 (default)	D

Within the IRB scope, the average number of defaults in the period analyzed (2010 to 2021) was lower than the expected number based on the PD rating models. The difference is mainly due to the conservative nature of the models and to general economic growth during the period.

4.2.3.2 Slotting approach for specialized lending

The Bank uses slotting criteria for the financing of income-producing real estate (real-estate professionals) and for commodities financing (trade finance). For these two categories, FINMA has authorized BCV to assign preferential risk weights to “strong” and “good” exposures (Basel III Accord, §277).

For real-estate professionals (except real-estate development), the slots are determined on the basis of the probability of default (PD), loss given default (LGD), and exposure at default (EAD) models that are internally applied to each credit exposure in the real-estate professionals category. A specific mechanism used to calculate capital requirements has been set up to determine the PD of real-estate professionals in order to reduce the sensitivity of regulatory capital to the business cycle.

For real-estate development projects intended for sale, a slot is allocated directly to each credit exposure without applying the PD, LGD, and EAD models used for other exposures in the real-estate professionals category. A similar direct slotting system is in place for trade finance transactions.

These slotting systems meet the supervisory slotting criteria for specialized lending in Annex 4 of the International Convergence of Capital Measurement and Capital Standards: a Revised Framework (Basel II Accord).

Table 16. IRB – Specialized lending under the simple risk-weight method

In CHF millions, at 31 December 2021, BCV Group, CR10¹³

Regulatory category	On-balance-sheet amount	Off-balance-sheet amount	RW	Exposure amount			RWA	Expected loss
				CF	IPRE	Total		
Strong	5,326	972	50%	631	5,118	5,749	3,047	1
Good	2,822	436	70%	766	2,375	3,141	2,330	13
Satisfactory	272	60	115%	136	169	305	371	9
Weak	6	-	250%	0	6	6	16	0
Default	14	8	-	22	-	22	-	11
Total	8,440	1,475		1,555	7,667	9,222	5,765	33

Lending to real-estate professionals under the slotting criteria method amounted to CHF 7.667bn at 31 December 2021. The vast majority (98%) of the Bank’s real-estate exposure is in the “strong” and “good” slots. This is because this exposure is mainly associated with financing for real-estate investors that is adequately secured by property.

The Bank’s trade-finance exposure decreased by CHF 177m in the second half of 2021. 90% of trade-finance transactions are in the “strong” and “good” slots, as they are secured by recognized collateral (especially cash and merchandise).

¹³Table CR10 of the Basel Accord covers specialized lending and equities under the simple risk-weight method. In this report, specialized lending is covered in this table while equities are covered in Table 24 (in Section 5.2, “Risk on equity securities in the banking book”). This table does not include remaining maturities since preferential weights have been applied.

4.2.4 Standardized Approach

FINMA defines the risk weightings to be applied for exposure treated using the SA-BIS by type of counterparty (CAO, Annex 2). In this case, FINMA authorizes the use of external ratings (CAO, Article 64) provided that:

1. The ratings are supplied by ratings agencies recognized by FINMA.
2. External ratings are applied systematically by the Bank using a precise and specific approach.
3. Where the Bank uses external ratings to determine the risk weightings for a category of positions, the entire category must in principle be weighted through the use of external ratings.

The Bank uses, where available, Standard & Poor's ratings to determine the risk weightings of almost all counterparties for which the SA-BIS is applied. These counterparties are essentially counterparties for debt securities in the financial investments portfolio. For corporate clients with no external rating, a weighting of 100% ("no rating") is used.

Corporate clients make up 19% of the portfolio that is assessed using the SA-BIS. This category includes bonds from the Central Mortgage-Bond Institution and the Mortgage-Bond Bank of the Swiss Mortgage Institutions (weighting of 20%), commercial loans that are outside the scope of the parent company's F-IRB approach (i.e., SMEs that do not have financial statements or that only have loans that are secured by cash, securities or a joint and several loan guarantee as described in Article 3 of the Covid-19 Joint and Several Loan Guarantee Ordinance, insurance companies, and investment funds), and corporate exposures at the Bank's subsidiaries.

The category "Central governments and central banks" consists primarily of exposure to the SNB (weighting of 0%) and the Swiss Federal Government (weighting of 0%).

Table 17. Standardized Approach – Credit-risk exposure and credit-risk mitigation (CRM) effectsIn CHF millions, at 31 December 2021, BCV Group, CR4¹⁴

Category	a		b		c		d	e	f
	Exposure before CCF and CRM		Exposure post-CCF and post-CRM		On-balance-sheet amount	Off-balance-sheet amount	RWA	RWA density	
	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount					
1 Central governments and central banks	13,879	140	13,879	66	12	0%			
2 Banks and securities firms	629	138	629	69	294	42%			
3 Non-central govt. public-sector entities; multilateral development banks	936	502	936	1	212	23%			
4 Corporates	3,496	625	3,420	86	1,501	43%			
5 Retail	864	342	864	34	322	36%			
8 Total	19,805	1,748	19,728	256	2,341	12%			

The impact of risk mitigation measures is low in the scope of the SA-BIS. This is due to the predominance of exposure to the SNB, the Central Mortgage-Bond Institution, the Mortgage-Bond Bank of the Swiss Mortgage Institutions, and the Swiss federal and cantonal governments, which are generally not secured by financial guarantees. The Bank recognizes the Export Risk Guarantees provided by the Swiss Export Risk Insurance (SERV) program. The amount covered by these guarantees is less than CHF 10m.

¹⁴Equities (row 6 in the FINMA table) are not included in this table because they are covered in Table 16 (IRB).

Table 18. Standardized Approach – Exposure by asset class and risk weight
In CHF millions, at 31 December 2021, BCV Group, CR5

	a	c	d	e	f	g	h	j
Category/Risk weight	0%	20%	35%	50%	75%	100%	150%	Total credit exposure post-CCF and post-CRM
1 Central governments and central banks	13,933	-	-	-	-	12	-	13,945
2 Banks and securities firms	-	496	-	20	-	182	-	698
3 Non-central govt. public-sector entities; multilateral development banks	-	856	-	81	-	-	-	937
4 Corporates	-	2,378	151	-	16	961	-	3,506
5 Retail	0	-	520	-	127	250	-	898
7 Other assets	-	-	-	-	-	-	-	-
8 Total	13,933	3,730	671	101	143	1,406	-	19,984
9 Of which: secured by residential property	-	-	671	-	36	12	-	719
10 Of which: past-due loans	3	-	-	-	0	0	-	3

4.3 Counterparty credit risk

The Bank's counterparty credit risk (CCR) exposure includes securities financing transactions and derivative transactions. The framework for such exposure is set forth in the RMPS as well as in a BCV directive on collateralized contracts, which addresses governance, risk-taking limits, collateral eligibility, monitoring, and reporting.

Securities financing transactions (SFTs)

The majority of the Bank's SFTs are repo and reverse repo agreements. The Bank also began conducting securities borrowing transactions in 2017, but this is a marginal activity.

The Bank uses repo and reverse repo agreements to manage liquidity. These agreements are processed using a triparty system in which the triparty agent (SIX or Euroclear) is responsible for clearing. Throughout the lifetime of a repurchase agreement, the triparty agent carries out margin calls at least once per day to account for any change in the market value of the securities and any thresholds, and directly carries out any necessary transfers using securities or cash held with the triparty agent.

The Bank's repo and reverse repo agreements are based on standard contracts such as the GMRA or the Swiss Master Agreement for Repo Trades. Collateral eligibility is determined by SIX when it is the triparty agent (SNB basket) or agreed upon by the counterparties when Euroclear is the triparty agent. Collateral must meet the eligibility criteria set forth in the BCV directive (e.g., be a readily marketable stock, a bond with a rating of at least BBB- or equivalent, or a security independent of the counterparty's solvency).

SFT counterparties are banks, insurance companies, and large corporates. Limits are granted according to the lending process and lending authority described in Section 4.1. They are monitored daily on an individual basis. The Bank monitors the quality of securities received daily as collateral using a portfolio approach, with particular attention paid to risk concentration.

When calculating capital requirements, the Bank's exposure is determined using the comprehensive approach (CAO, Article 62.1(b)). Capital requirements are determined using the IRB or SA-BIS approach depending on the type of counterparty.

Non-centrally cleared OTC derivatives

Limits for OTC derivatives (including forward contracts) that are not centrally cleared (cleared bilaterally) are mainly granted to bank counterparties in order to carry out trading operations and interest-rate-risk hedging transactions. They are also granted to companies or public-sector entities so that they can hedge typically against exchange-rate and interest-rate risk.

These limits are granted according to the lending process and lending authority described in Section 4.1. They are monitored daily on an individual basis.

In principle, the Bank handles OTC derivative transactions only on the basis of ISDA netting agreements or an equivalent agreement. For its main bank counterparties in terms of pre-settlement exposure, the Bank takes the necessary measures to ensure that OTC derivative transactions can be carried out in accordance with a credit support annex (CSA) for collateral management. Alternatively, blocked cash deposits can be set up as a risk mitigant for OTC derivative exposure.

Credit-risk exposure is measured according to the principle of "positive mark-to-market value plus add-on." The add-on is determined by type of underlying and by maturity, on the basis of internal models. These models are based on the SA-CCR but are slightly more conservative. Where the Bank has entered into an ISDA netting agreement with the counterparty, contracts with negative mark-to-market values can be taken into account to reduce credit-risk exposure. Where the Bank has entered into a CSA collateral management agreement with the counterparty, credit-risk exposure is determined according to the same principle, taking into account the amount of the cash collateral and based on a reduced add-on, in order to take into consideration the frequency of revaluation and the option to make margin calls.

When calculating capital requirements, the Bank's derivatives exposure is determined according to the SA-CCR (as specified in FINMA Circular 2017/7, "Credit risk – banks," margin number 32 *et seq.*), taking account of netting and collateral management agreements. Capital requirements are determined according to the appropriate approach (IRB or SA-BIS), which since 1 January 2013 includes the credit valuation adjustment (CVA).

Table 19. IRB – CCR exposure by portfolio and PD range

In CHF millions, at 31 December 2021, BCV Group, CCR4¹⁵

	a	b	c	d	e	f	g
PD range	EAD post-CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
3 Banks and securities firms (F-IRB)							
0.00 to <0.15	528	0.20%	63	45%	0.69	68	13%
0.15 to <0.25	9	0.33%	4	45%	0.13	3	32%
0.25 to <0.50	4	0.37%	2	45%	1.27	3	66%
0.50 to <0.75	0	7.61%	1	45%	0.22	0	64%
0.75 to <2.50	-	-	-	-	-	-	-
2.50 to <10.00	-	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (default)	-	-	-	-	-	-	-
Sub-total	541	0.21%	69	45%	0.69	74	14%
9 Corporates - other lending (F-IRB)							
0.00 to <0.15	60	0.10%	22	45%	0.69	10	17%
0.15 to <0.25	1	0.21%	4	45%	0.83	0	31%
0.25 to <0.50	25	0.37%	10	45%	0.96	12	47%
0.50 to <0.75	4	0.57%	3	45%	0.49	2	54%
0.75 to <2.50	7	1.20%	11	45%	2.16	7	99%
2.50 to <10.00	1	3.83%	2	45%	0.07	1	112%
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (default)	-	-	-	-	-	-	-
Sub-total	97	0.30%	52	45%	0.85	32	32%
13 Other retail exposure							
0.00 to <0.15	8	0.12%	35	75%	0.93	2	21%
0.15 to <0.25	0	2.36%	3	75%	0.95	0	39%
0.25 to <0.50	1	0.37%	93	75%	0.33	0	51%
0.50 to <0.75	1	0.57%	4	74%	0.52	1	69%
0.75 to <2.50	1	1.75%	19	75%	0.63	1	94%
2.50 to <10.00	0	4.00%	1	75%	0.68	0	133%
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (default)	-	-	-	-	-	-	-
Sub-total	11	0.35%	155	75%	0.84	4	33%
Total	656	0.22%	278	45%	0.72	110	17%

¹⁵The following portfolio is not shown in the table because it does not have a material amount of RWA: "Non-central government public-sector entities; multilateral development banks" (RWA < CHF 1m).

Table 20. Standardized Approach – CCR exposure by regulatory portfolio and risk weight
In CHF millions, at 31 December 2021, BCV Group, CCR3

Category	a	b	c	d	e	f	g	h	i
	Risk weight								
	0%	10%	20%	50%	75%	100%	150%	Other	Total credit exposure
1 Central governments and central banks	41	-	-	-	-	-	-	-	41
2 Banks and securities firms	-	-	-	-	-	0	-	-	0
3 Non-central gov't. public-sector entities; multilateral development banks	-	-	-	-	-	-	-	-	-
4 Corporates	-	-	-	-	-	29	-	-	29
5 Retail	-	-	-	-	1	1	-	-	2
6 Equity	-	-	-	-	-	-	-	-	-
7 Other assets	-	-	-	-	-	-	-	-	-
9 Total	41	-	-	-	1	31	-	-	72

Counterparty-credit-risk exposure determined using the Standardized Approach consists of derivative positions and repo agreements with supranational institutions, insurance companies and investment funds.

Table 21. Composition of collateral for CCR exposure
In CHF millions, at 31 December 2021, BCV Group, CCR5¹⁶

	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
Type of collateral	Segregated	Non-segregated	Segregated	Non-segregated		
1 Cash in CHF	161	-	4	-	350	-
2 Cash in other currencies	105	-	104	-	1,270	228
3 Swiss sovereign debt	-	-	30	6	14	233
4 Other sovereign debt	-	-	-	21	67	131
5 Government agency debt	-	-	173	26	3	995
6 Corporate bonds	-	-	11	-	126	430
7 Equity securities	-	-	-	-	3	-
8 Other collateral	-	-	-	-	-	-
9 Total	266	-	321	53	1,834	2,017

¹⁶This table includes collateral received and posted for securities financing transactions (SFTs) and derivative transactions. It does not include collateral posted to central banks and other institutions that form part of the financial market infrastructure for the purposes of securing credit lines and payment and settlement transactions.

Centrally cleared derivatives

Centrally cleared derivatives include exchange-traded derivatives (ETDs) and OTC derivatives cleared by a central counterparty.

Exchange-traded derivatives whose settlement is guaranteed by a central counterparty (see Table 22, row 4) mainly relate to transactions on behalf of clients (investment funds, banks, companies, and individuals). Nostro positions make up a small portion of the total exposure to central counterparties. The contracts traded are mainly options and futures on equities and major indexes. The major organized markets are Eurex, the Chicago Mercantile Exchange, and LIFFE.

OTC derivatives cleared by a central counterparty are interest-rate swaps used to manage the Bank's interest-rate risk and cleared by Eurex (see Table 22, row 3).

The Bank's exposure to central counterparties results from derivative positions, initial margins, variation margins, and default fund contributions. For derivatives, the exposure is determined according to the SA-CCR (as specified in FINMA Circular 2017/7, "Credit risk – banks," margin number 32 *et seq.*); other exposures are determined using the comprehensive approach (as specified in FINMA Circular 2017/7, "Credit risk – banks," margin number 191 *et seq.*). This type of exposure is subject to a credit limit if it gives rise to credit risk for the Bank.

Capital requirements for these positions have been calculated since Basel III came into force on 1 January 2013.

Table 22. Exposure to central counterparties (CCPs)

In CHF millions, at 31 December 2021, BCV Group, CCR8

	a	b
	EAD post-CRM	RWA
1 Total exposure to qualified central counterparties (QCCPs)		157
2 Exposure for trades at QCCPs (excl. initial margin and default fund contributions)	218	134
3 Of which: OTC derivatives	58	1
4 Of which: exchange-traded derivatives	161	133
7 Segregated initial margin	272	
8 Non-segregated initial margin	40	18
9 Pre-funded default fund contributions	42	5

5. MARKET RISK

5.1 Market risk in the trading book

Strategy and process

All trading activities are managed within the Asset Management & Trading Division. A distinction is made between the trading portfolio, which includes all the trading teams' positions, and the financial management nostro portfolio, which is composed of the nostro positions managed by the Asset Management Department.

The Trading Department carries out market transactions in equities, fixed-income instruments, forex, and precious metals on behalf of internal and external counterparties. It has also acquired expertise in structured products. The Trading Department is active along the entire structured product value chain, from issuing to market-making. Since BCV completely withdrew from proprietary equity-derivative trading at the end of 2009, the Trading Department has focused primarily on customer-driven transactions.

The Asset Management Department is responsible for the financial management nostro portfolio. While this portfolio used to focus on providing a return, it was given a new role under the Bank's strategy and significantly reduced in 2009 and early 2010. It is now used to assist in the creation of new Asset Management funds, while keeping risk-taking to a minimum. This portfolio may be invested in stocks, bonds, simple derivatives, structured products, funds, and funds of funds. All of these positions (apart from those in funds and funds of funds) are on recognized exchanges or representative markets.

Structure and organization

All new Asset Management & Trading products and instruments must be approved by the Division's Product and Instrument Committee (PIC). This committee is chaired by the Executive Board member in charge of the Asset Management & Trading Division and includes the Division's department heads, the head of the Risk Management Department (right of veto), and the head of the Back Office Department (right of veto). The process ensures that before a product is launched, all requirements have been met in the areas of risk management, ALM, treasury management, back offices, legal, compliance, tax, and IT.

For all trading positions, the overnight monitoring of market risk is under the responsibility of the Market Risk Unit within the Risk Management Department. The Market Risk Unit also defines the risk control measures and monitors the appropriateness of risk control for new trading products.

Risk assessment

Various techniques are used to measure risk exposure on the Asset Management & Trading Division's trading portfolio:

- Historical overnight Value-at-Risk (VaR) with a one-day time horizon and a confidence level of 99%;
- Analysis of potential losses using static stress tests;
- Sensitivity metrics such as delta, gamma, vega, theta, and rho.

Limit utilization is controlled and reported daily by the Market Risk Unit.

Various techniques are used to measure risk in the Asset Management & Trading Division's financial management nostro portfolio:

- Historical VaR with a six-month time horizon and a confidence level of 99%;
- Analysis of potential losses using static stress tests and dynamic six-month stress tests.

Market-risk-weighted assets correspond to the minimum capital requirements multiplied by 12.5. Minimum capital requirements for market risk on BCV's trading book are determined based on market values (mark-to-market) and in accordance with the Standardized Approach (CAO, Article 84) without the use of in-house models. For options trading, the calculation is based on the delta-plus method: the market value of the underlying is multiplied by the delta for the options positions. This method also takes gamma and vega into account. Hedge-fund positions in the financial management nostro portfolio are not included in the capital-requirement calculations for the trading book. Instead, these positions are included in the Bank's financial investment portfolio and treated as equity securities.

Assets weighted for interest-rate risk accounted for the largest portion of risk-weighted assets at 31 December 2021. Of these assets, the largest portion was made up of currency swaps for customer-driven forex trading. Assets weighted for equity risk result from remaining positions held as part of the Bank's structured products business, from the Bank's role as market maker for real-estate investment funds, and from nostro positions managed by the Asset Management Department.

Table 23. Market risk under the Standardized Approach (SA)

In CHF millions, BCV Group, MR1

	a	a-1
	RWA	
	31/12/2021	30/6/2021
Outright products	157	216
1 Interest-rate risk (general and specific)	134	196
2 Equity risk (general and specific)	16	15
3 Foreign-exchange risk	7	5
4 Commodity risk	-	-
Options	1	2
5 Simplified approach	-	-
6 Delta-plus method	1	2
7 Scenario approach	-	-
8 Securitization	-	-
9 Total	158	218

5.2 Risk on equity securities in the banking book

Equity securities in the banking book are recorded on the balance sheet in the line items Financial investments and Non-consolidated holdings.

Strategy and processes

Financial investments are composed of strategic holdings with a long time horizon that are acquired in accordance with the Bank's strategy. The Bank defined an upper limit of CHF 200m for these equity securities and, in principle, does not invest directly in private-equity positions.

The authority to acquire and change long-term holdings is held by the Executive Board for holdings of up to CHF 20m and the Board of Directors for larger amounts. The Board of Directors has responsibility for setting up and selling subsidiaries.

Risk assessment

Equity securities included in Financial investments are mainly listed or unlisted shares and fund units that are not held for trading purposes or for long-term investment. They are valued at lower of cost or market.

The "Non-consolidated holdings" line item comprises corporate equity securities, which are held as long-term investments irrespective of voting rights. It also includes the Group's infrastructure-related holdings, particularly joint ventures. They are stated at cost, less any required impairment. The Group's main non-consolidated holdings at 31 December 2021 were investments in financial companies (a 13.6% stake in the Swiss Central Mortgage-Bond Institution, a 4.8% stake in Viseca Holding (formerly Aduno), a 3.2% stake in TWINT, and a 2.5% stake in SIX).

Capital requirements are determined for both equity securities recorded under Financial investments and those entered under Non-consolidated holdings. A 250% risk weighting is applied to shareholdings of more than 10% in financial companies (below threshold 3 under Article 40 of the CAO), while the simple risk-weight method is applied to all other equity securities included in Financial investments and Non-consolidated holdings.

Table 24. IRB – Equities under the simple risk-weight method

In CHF millions, at 31 December 2021, BCV Group, CR10¹⁷

Regulatory category	RW	Exposure amount	RWA
Exchange-traded equity exposure	300%	10	31
Other equity exposure	400%	22	91
Total		31	122

¹⁷Table CR10 in the Basel Accord covers specialized lending and equities under the simple risk-weight method. In this report, equities are covered in this table while specialized lending is covered in Table 16 (in Section 4.2.3.2, "Slotting approach for specialized lending").

5.3 Interest-rate risk in the banking book

5.3.1 Management of interest-rate risk in the banking book

Interest-rate risk in the banking book (IRRBB) is defined here as the potential loss in the Bank's net interest income (NII) or economic value of equity (EVE) arising from the effects that an adverse change in interest rates could have on the Bank's banking-book positions (on- and off-balance sheet).

The main IRRBB risk factors for the Bank are:

- Instantaneous and progressive changes in the yield curve;
- Changes in customer behavior, including customer allocation among different financial instruments.

The Bank's IRRBB exposure is of three types:

- Gap risk – Mismatches within the term structure of banking-book positions (i.e., among volumes and repricing maturities) for the assets, liabilities, and off-balance-sheet positions in the Bank's banking book;
- Behavioral option risk – Positions, especially non-maturity deposits, that could be affected by competitive pricing practices or changes in customer behavior;
- Basis risk – The risk arising from an imperfect correlation in the adjustment of rates earned and paid on different instruments with otherwise similar rate-change characteristics.

Strategy and processes

The Board of Directors establishes the Bank's principles for managing risk and decides on the risk-taking strategy it will pursue, which includes the target profile for IRRBB. This target profile is defined in the Bank's Financial Strategy and reviewed annually as part of its Financial Management Policy (FMP). The target profile is defined within limits that are expressed in the form of equity duration. Those limits are approved by the Board of Directors.

Structure and organization

The Executive Board is responsible for organizing and implementing IRRBB management. The Executive Board delegates management of this type of risk to its Asset and Liability Management Committee (ALCO). This committee meets monthly. It is chaired by the CEO and comprises four other Executive Board members, including the CFO.

In the Finance & Risks Division, IRRBB management is centralized within the ALM & Financial Management (ALM-FM) Department, which reports directly to the CFO. This department is responsible for:

- Defining and maintaining the models and principles used to manage IRRBB as part of the Bank's Financial Strategy. These models and principles are approved by the Model Validation team, the Executive Board's Risk Management Committee, and the Board of Directors.
- Producing monthly reports on IRRBB management and presenting them to the ALCO. This report is also presented to the Executive Board and the Board of Directors each quarter.

Risk assessment

The ALM-FM Department continuously manages interest-rate risk for the parent company's entire banking book, and, at each month-end, calculates the sensitivity indicators for its equity capital. Interest-rate risk in the trading book represents a market risk and is outside the scope of IRRBB.

Interest-rate risk relating to the activities of Piguet Galland & Cie SA is managed independently by its Executive Board under the supervision of BCV Group. Each quarter, the interest-rate position for the entire Group is determined by the ALM-FM Department, in accordance with the approach used by the parent company. It is then presented to the ALCO, the Executive Board, and the Board of Directors. At 31 December 2021, in terms of sensitivity, the parent company's IRRBB accounted for 98% of the Group's IRRBB exposure.

Risk measurement

The Bank measures and monitors IRRBB using two types of indicators:

- Static indicators, which measure the sensitivity of the net present value of the banking book:
 - The present value of equity;
 - The sensitivity of the economic value of equity to a 100bp change in interest rates;
 - The duration of equity;
 - The VaR of the net present value of equity;
 - Key rate durations;
 - Future changes in the value and duration of equity.
- Dynamic indicators, which are based on interest-rate and balance-sheet scenarios for the current year and subsequent two years. The results of these simulations are used to calculate NII forecasts and the NII at risk over rolling 12-, 24-, and 36-month periods. The NII at risk is a measure of the sensitivity of NII to fluctuations in interest rates.

Scenarios

IRRBB is measured using standard scenarios that combine an interest-rate scenario with a balance-sheet simulation that considers the impact of new business production in order to incorporate assumptions about customer behavior. The projected interest rates are calculated at various confidence intervals so as to cover a wide range of possible interest-rate movements; these confidence intervals are based on historical interest-rate data dating back to 1988. The interest-rate scenarios that the Bank uses are:

- Spike scenario: A spike in interest rates, with a 99% confidence interval;
- Probable scenario: The most likely movements in interest rates over the next three years, according to expert estimates. The Bank also generates Probable+ and Probable- scenarios at 66% confidence intervals around the Probable scenario;
- Crash scenario: A sharp decrease in interest rates, with a 99% confidence interval;
- Inversion scenario: An inversion of the yield curve based on expert estimates.

To measure its ability to withstand extreme changes in interest rates, the Bank also conducts ad-hoc stress tests in response to market conditions. In addition, the ALM-FM Department conducts stress tests every year using the stress scenarios specified in the Swiss National Bank's Financial Stability Report.

Risk mitigation

IRRBB hedging decisions are made by the ALCO and executed on the market by the ALM-FM Department's Treasury team. Interest-rate swaps are currently the main type of hedging instrument used. Any options positions in the banking book are systematically hedged through market transactions.

All hedging instruments must be matched to a fixed-rate position in the banking book; these hedges are recognized under accrual accounting.

Every quarter, the ALM-FM Department tests the effectiveness of the hedges by making sure that the hedge ratio is high enough for the associated derivatives to be classified as hedging instruments.

Table 25. Interest-rate risk – Quantitative information on the structure of positions, and maturity repricingAt 31 December 2021, parent company, IRRBBA1¹⁸

		a	b	c	d	e	f	g
		Volume in CHF millions			Average repricing maturity (in years)		Longest repricing maturity (in years) assigned to non-maturity positions	
		Total	Of which CHF	Of which other currencies	Total	Of which CHF	Total	Of which CHF
Positions with a set repricing maturity	Due from banks	537	5	-	0.1	0.1		
	Loans and advances to customers	4,932	4,277	-	3.4	3.8		
	Money-market mortgage loans	-	-	-	-	-		
	Fixed-rate mortgage loans	28,560	28,543	-	4.1	4.2		
	Financial investments	4,165	3,379	-	4.4	4.5		
	Other assets	-	-	-	-	-		
	Receivables on interest-rate derivatives	21,659	16,126	-	0.5	0.7		
	Due to banks	-3,456	-1,086	-	0.1	0.1		
	Customer deposits	-4,228	-2,613	-	0.2	0.3		
	Medium-term notes	-2	-2	-	0.4	0.4		
	Bonds and mortgage-backed bonds	-7,445	-7,339	-	6.4	6.5		
	Other liabilities	-	-	-	-	-		
Liabilities on interest-rate derivatives	-21,698	-20,926	-	1.9	1.8			

¹⁸As the Bank's swap positions (interest-rate and FX swaps) have two legs – a receivables leg and a payables leg – they are recorded under both “Receivables on interest-rate derivatives” and “Liabilities on interest-rate derivatives.” Column c (“Of which other currencies”) gives positions in other currencies that account for over 10% of balance-sheet assets or liabilities.

		a	b	c	d	e	f		g
		Volume in CHF millions			Average repricing maturity (in years)		Longest repricing maturity (in years) assigned to non-maturity positions		
		Total	Of which CHF	Of which other currencies	Total	Of which CHF	Total	Of which CHF	
Positions with no set repricing maturity	Due from banks	467	7	-	0.0	0.0	-	-	-
	Loans and advances to customers	1,055	255	-	0.3	0.8	7.0	7.0	7.0
	Variable-rate mortgage loans	168	168	-	2.7	2.6	10.0	10.0	10.0
	Other sight receivables	12,894	12,591	-	-	-	-	-	-
	Customer sight deposits	-22,097	-18,829	-	1.6	1.7	7.0	7.0	7.0
	Other sight liabilities	-1,678	-828	-	-	-	-	-	-
	Callable but non-transferrable customer savings deposits	-10,579	-10,474	-	1.8	1.8	5.0	5.0	5.0
Total	3,256	3,256	-	6.6	7.3	-	-	-	-

5.3.2 Prescribed modeling and parametric assumptions used to calculate the values in Table IRRBB1

The values given in Table IRRBB1 (Table 26) have been calculated in accordance with FINMA Circular 2016/1, “Disclosure – banks.” The six interest-rate scenarios used are those given in FINMA Circular 2019/2, “Interest-rate risk – banks.” The following sections describe the key modeling and parametric assumptions used to calculate changes in the economic value of equity (ΔEVE) and changes in net interest income (ΔNII) as per regulatory requirements.

Calculation of ΔEVE

Cash flows from fixed-rate positions are calculated using the interest rates on these positions. These calculations are aggregated by month using a median date.

The Bank includes non-maturity exposures in its calculation of static indicators using replication models. The main features of these models are:

- A parameter designed to smooth out the monthly volatility inherent in these types of exposures. This parameter is calculated using the monthly volume above the 3-month or 12-month rolling average (depending on the type of exposure). It is updated at one-month intervals.
- A simulation of the core stable volume of exposures, which is done using an interest-rate replication model for the rates applied to customers.
- This interest-rate replication model is based on market interest rates with repricing maturities spanning from one month to ten years (the average and the longest repricing maturities are given in Table IRRBBA1).
- The models are calibrated every year using a 10-year calculation window. Periods when a zero interest rate is applied to customers are omitted.

The benchmark interest rates used to discount the cash flows for the calculation of EVE are based on the interest-rate-risk hedging instruments used. For the Swiss franc, the interest rates used are the SAR up to 1 month and the SARON-based mid-swap rate beyond 1 month. For the euro, the interest rates used are the Euribor up to 12 months and the Euribor mid-swap rate beyond 12 months. For the US dollar, the interest rates used are the Libor up to 12 months and the Libor-based mid-swap rate beyond 12 months. For pound sterling, the interest rates used are the Sterling Overnight Index Average (SONIA) and the SONIA-based mid-swap rate. For the Japanese yen, the interest rates used are the Tokyo Overnight Average Rate (TONAR) and the TONAR-based mid-swap rate.

Intermediate interest rates are calculated using linear interpolation.

Calculation of ΔNII

For each interest-rate scenario, ΔNII is calculated based on a different assumption about the SNB’s exemption threshold. In the core scenario, the assumption is that the exemption threshold will remain the same; in the “parallel up” scenario, that it will be removed; and in the “parallel down” scenario, that it will be reduced substantially. It is also assumed that amounts due to banks will decline to offset these reductions in the exemption threshold.

The repricing of fixed-rate exposures is based on the initial maturities of exposures that will reach their term in the next 12 months.

Cash flows from new fixed-rate positions are calculated using the interest rates on the new positions as follows:

Market interest rate for the term of the position + Additional funding rate + Expected margin

Where:

-
- Market interest rate is the rate taken from the simulated rate curve (same benchmark interest rates as for the calculation of EVE)
 - Additional funding rate is the spread at each maturity that the Bank must pay above the benchmark interest rates for its senior and covered debt funding
 - Expected margin is based on recent and projected trends, taking into account business objectives and competitive pressure

For exposures with variable rates set by the Bank (mainly sight deposits and savings accounts), the interest rates are modeled using historical data that compare market rates to customer rates. These historical data are used in stress tests to determine the interest rate that would be applied to customers after an interest-rate shock.

Behavioral and automatic option risks

Customers who pay a loan off early are charged an early redemption fee, which is calculated by multiplying the outstanding amount on the loan by an interest rate equal to the difference between the rate on the loan and the Bank's replacement rate for the remaining term of the loan. This policy ensures that that Bank does not incur any losses when customers pay off their loans early. As a result, the Bank does not use any specific models for early repayments.

The Bank applies the same policy to early withdrawals on term deposits, meaning the Bank does not use any specific models for these deposits either.

The Bank currently has no on- or off-balance-sheet positions that include embedded automatic options such as loans with a cap or floor, interest-rate options, and swaptions.

Any instruments on the balance sheet that include embedded automatic options would be accounted for as delta-weighted positions.

Foreign currencies

The vast majority of positions on the Bank's balance sheet are in CHF. The main foreign currencies are EUR and USD, which accounted for 4.5% and 5.5% of balance-sheet positions, respectively, at 31 December 2021. All foreign-currency exposures are fully included in the calculation of static indicators (as are CHF exposures). For dynamic indicators, a simplified calculation is used, although in keeping with FINMA Circular 2016/1, "Disclosure – banks." In the second half of 2021, the NII from foreign currencies amounted to 5.8% of total NII.

Differences in the assumptions used to calculate indicators

The main differences in the assumptions used to calculate the Bank's internal indicators vs. those used to calculate the indicators given in Table IRRBB1 are as follows:

- The NII values in Table IRRBB1 are calculated using a constant balance sheet (except for the assumptions related to the SNB exemption threshold), but internal indicators are calculated using a range of different balance-sheet scenarios based on different interest rates. This enables the Bank to account for how customer behavior may change in response to higher or lower interest rates;
- The NII values in Table IRRBB1 are calculated to reflect the effects of an instantaneous interest-rate shock, while internal indicators are calculated assuming the upwards or downwards pressure on interest rates occurs linearly over the first six months of the simulation;
- The NII values in Table IRRBB1 are calculated for a rolling 12-month period, while internal NII indicators are calculated for the current year and the subsequent two years.

Table 26. Interest-rate risk – Quantitative information on the economic value of equity and net interest income

In CHF millions, at 31 December 2021, parent company, IRRBB1

	a	b	c	d
	ΔEVE		ΔNII	
	31/12/2021	30/6/2021	31/12/2021	30/6/2021
Parallel up	-544	-560	3	6
Parallel down	631	661	-35	-33
Steeper	-325	-319		
Flattener	213	209		
Short rate up	-18	-31		
Short rate down	19	32		
Maximum	-544	-560	-35	-33
	31/12/2021		30/6/2021	
Tier 1 capital	3,295		3,254	

The economic value of equity is sensitive to a rise in interest rates. This sensitivity decreased slightly in H2 2021.

The maximum possible loss as measured by a change in NII remained stable across interest-rate scenarios in the second half of 2021.

5.4 Liquidity risk

Strategy and processes

The Board of Directors sets out the principles for managing liquidity risk and the target liquidity-risk profile. The liquidity-risk profile is expressed through metrics such as the liquidity coverage ratio (LCR) and other indicators used to analyze the balance sheet's structure. The target liquidity-risk profile is reviewed annually by the ALCO.

Structure and organization

The Executive Board delegates responsibility for managing liquidity risk to the ALCO, which does so in accordance with the principles set out by the Board of Directors. Every month, the ALCO monitors liquidity risk via the monthly ALCO report. The reports are also submitted to the Executive Board and the Board of Directors every quarter.

Within the Finance & Risks Division, the ALM-FM Department, which includes ALM and Treasury, is responsible for the centralized and operational management of liquidity risk.

- Treasury manages the parent company's liquidity position on a daily basis and ensures that the internal LCR limit is complied with. Treasury is also the counterparty for Group subsidiaries when managing their liquidity positions.
- ALM submits proposals to the ALCO concerning strategic balance-sheet management (e.g., long-term borrowings and financial investments) and draws up the ALCO reports.
- ALM is also in charge of determining and maintaining liquidity-risk management principles and models. The principles are approved by the ALCO and the Board of Directors, while models are approved by the EBRMC.

Risk assessment

There are two types of liquidity-risk metrics:

- Static metrics, which calculate the risk on a given date in order to assess the risk level instantaneously and monitor changes over time;
- Dynamic metrics, which calculate the risk on future dates in order to anticipate changes in the risk level. Dynamic metrics are determined by simulating changes in balance-sheet items over the following three years using three different scenarios of how the Bank's business could develop.

The following metrics are calculated both statically and dynamically and analyzed by the ALCO in order to assess the Bank's liquidity position and the robustness of its balance sheet:

- Basel III liquidity ratios (LCR and NSFR);
- The net funding requirements of the Bank's business lines;
- The long-term funding plan.

Other static indicators are also monitored by the ALCO:

- Maturities distribution/concentration for long-term borrowings;
- Funding costs on the interbank and bond markets.

In addition to these risk metrics, stress tests are conducted to quantify the impact that different adverse scenarios would have on the Bank's liquidity position over a given time. These stress tests are the starting point for determining the target liquidity-risk profile.

Funding structure

BCV is funded primarily by client deposits. These account for 68% of total liabilities and shareholders' equity and come in the form of savings, sight deposits, term deposits, and medium-term notes.

Long-term borrowings account for 13% of total liabilities and shareholders' equity. Most long-term borrowings are mortgage-backed bonds issued through the Central Mortgage-Bond Institution, which represents a stable source of long-term funding. Other long-term borrowings (e.g., structured products and bonds) are made for diversification purposes.

Unsecured amounts due to banks make up 6% of total liabilities and shareholders' equity. Secured amounts due to banks (i.e., repurchase agreements) account for 3%.

The remaining items are shareholders' equity (7%) and other liabilities (4%).

Contingency funding plan

Pursuant to Article 10 of the Swiss Federal Liquidity Ordinance, the Bank has a contingency funding plan in place to cover a potential liquidity shortage. The plan has three components:

- An early warning system that determines the risk level using specific and systemic risk indicators;
- Escalation rules stipulating the management level that must be informed depending on how the situation develops;
- Checklists setting out the procedure to be followed, the measures to be taken by each business line, and the responsibilities of those tasked with managing the liquidity shortage.

The contingency funding plan is reviewed annually by the ALCO.

Liquidity coverage ratio (LCR)

The LCR is an international regulatory standard set out in the Basel III Accord. It became mandatory on 1 January 2015. The LCR ensures that a bank has enough liquidity to withstand a 30-calendar-day liquidity stress scenario. It is the ratio between the amount of high-quality liquid assets (HQLA) available and potential net cash outflows over a 30-day period. The term net cash outflows is defined as the total potential cash outflows (such as withdrawals from sight deposits and non-renewals of borrowings with a maturity of less than 30 days) less the total potential cash inflows (such as the repayment of receivables with a maturity of less than 30 days) in a stress situation. The minimum requirement for the LCR is 100%.

The average LCR for all BCV Group currencies was 155% in Q3 2021 and 158% in Q4 2021.

The Bank's SIC account makes up 77% of its HQLA. The remaining HQLA are primarily Swiss-issued securities that have a credit rating of between AAA and AA- (Central Mortgage-Bond Institution, the Mortgage-Bond Bank, the Swiss Federal Government and cantonal governments) and that are eligible as collateral for SNB open-market transactions.

Withdrawals from retail and corporate client deposits account for around 90% of total potential cash outflows. This reflects the fact that client deposits are the Bank's primary source of funding and also therefore the primary source of potential fund outflows in the event of a liquidity run.

Other cash outflows relate mainly to:

- Derivatives maturing within 30 days and margin calls relating to credit support annexes;
- The undrawn part of credit facilities granted to clients;
- Contingent liabilities (e.g., guarantees and letters of credit).

Loans to clients and banks maturing within 30 days account for around 92% of potential cash inflows.

The remaining cash inflows primarily come from derivatives maturing within 30 days.

The LCR in CHF is higher than the LCR for all currencies combined, as almost all HQLA are denominated in CHF (cash deposited at the SNB). Conversely, the LCR in EUR and USD is lower than the LCR for all currencies combined.

Table 27. Liquidity coverage ratio (LCR)
In CHF millions, BCV Group, LIQ1

	Q4 2021		Q3 2021	
	Total unweighted value	Total weighted value	Total unweighted value	Total weighted value
High-Quality Liquid Assets (HQLA)				
1 Total HQLA		13,446		13,136
Cash outflows				
2 Retail deposits	23,340	2,065	23,502	2,089
3 Of which: stable deposits	5,967	298	5,967	298
4 Of which: less-stable deposits	17,373	1,766	17,535	1,790
5 Unsecured wholesale funding	15,994	7,423	15,558	7,438
6 Of which: operational deposits (all counterparties) and deposits in networks of cooperative banks	1,962	490	1,927	482
7 Of which: non-operational deposits (all counterparties)	14,015	6,915	13,600	6,925
8 Of which: unsecured debt	17	17	31	31
9 Secured wholesale funding		98		81
10 Additional requirements	2,418	774	2,347	764
11 Of which: cash outflows related to derivative exposure and other collateral requirements	897	423	775	374
12 Of which: cash outflows related to loss of funding on debt products	-	-	-	-
13 Of which: cash outflows related to credit and liquidity facilities	1,521	351	1,572	389
14 Other contractual funding obligations	105	94	76	66
15 Other contingent funding obligations	2,652	133	2,789	139
16 Total cash outflows		10,586		10,576
Cash inflows				
17 Secured lending (e.g., reverse repos)	86	76	296	129
18 Inflows from fully performing exposure	2,414	1,945	2,475	1,919
19 Other cash inflows	74	74	59	59
20 Total cash inflows	2,573	2,095	2,829	2,107
Adjusted values				
21 Total HQLA		13,446		13,136
22 Total net cash outflows		8,491		8,469
23 Liquidity coverage ratio		158%		155%

Net stable funding ratio (NSFR)

The NSFR is the other liquidity-related international regulatory standard set out in the Basel III Accord. It became mandatory on 1 July 2021. The NSFR is the ratio of available stable funding, in the form of deposits, wholesale funding, and capital, to required stable funding for assets, primarily in the form of loans, over a one-year time horizon. It limits overreliance on short-term wholesale funding, and encourages better assessment of funding risk across all on- and off-balance-sheet items. The minimum requirement for the NSFR is 100%.

BCV Group's NSFR was 126% at 30 September 2021 and 125% at 31 December 2021.

Around 71% of available stable funding is in the form of deposits from private clients, SMEs, and non-financial companies. Interbank borrowing and other liabilities account for around 20%, and shareholders' equity makes up the remaining 9%. Close to 87% of required stable funding is in the form of mortgage loans and loans to non-financial companies. The remaining 13% is made up of off-balance-sheet assets and other on-balance-sheet assets.

Table 28. Net stable funding ratio (NSFR)

In CHF millions, BCV Group, LIQ2

	31/12/2021				Weighted value	30/9/2021				Weighted value	
	Unweighted value by residual maturity					Unweighted value by residual maturity					
	No maturity	< 6 months	≥ 6 months to < 1 year	≥ 1 year		No maturity	< 6 months	≥ 6 months to < 1 year	≥ 1 year		
Available stable funding (ASF)											
1	Capital:										
2	Regulatory capital	-	-	-	3,357	3,357	-	-	-	3,357	3,357
3	Other capital instruments	-	-	-	-	-	-	-	-	-	-
4	Retail deposits and deposits from small business customers:										
5	Stable deposits	-	5,967	-	0	5,669	-	5,967	-	-	5,669
6	Less stable deposits	-	15,923	14	1,049	15,392	-	16,505	22	996	15,871
7	Wholesale funding:										
8	Operational deposits	-	1,788	-	-	894	-	1,293	-	-	647
9	Other wholesale funding	-	10,025	388	-	4,860	-	8,877	607	-	4,361
10	Liabilities with matching interdependent assets	-	-	-	-	-	-	-	-	-	-
11	Other liabilities:										
12	NSFR derivative liabilities			437				280			
13	All other liabilities and equity not included in the above categories	-	9,627	395	6,942	7,390	-	9,565	514	6,707	7,245
14	Total ASF					37,563					37,149

		31/12/2021				30/9/2021					
		Unweighted value by residual maturity				Weighted value	Unweighted value by residual maturity				Weighted value
		No maturity	< 6 months	≥ 6 months to < 1 year	≥ 1 year		No maturity	< 6 months	≥ 6 months to < 1 year	≥ 1 year	
Required stable funding (RSF)											
15	Total NSFR high-quality liquid assets (HQLA)					835					801
16	Deposits held at other financial institutions for operational purposes	-	104	-	-	52	-	136	-	-	68
17	Performing loans and securities:										
18	Performing loans to financial institutions secured by Level 1 and 2a HQLAs	-	-	-	-	-	-	-	-	-	-
19	Performing loans to financial institutions secured by non-Level 1 and 2a HQLAs and unsecured performing loans to financial institutions	-	1,049	30	590	770	-	1,673	18	441	707
20	Performing loans to nonfinancial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and PSEs, of which:	-	2,210	462	9,454	9,371	-	2,144	367	9,448	9,287
21	With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk	-	-	-	-	-	-	-	-	-	-
22	Performing residential mortgages, of which:	-	-	-	-	-	-	-	-	-	-
23	With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk	-	339	92	21,942	16,593	-	359	30	21,708	16,363
24	Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	-	290	19	932	946	-	357		816	872
25	Assets with matching interdependent liabilities	-	-	-	-	-	-	-	-	-	-
26	Other assets:										
27	Physical traded commodities, including gold	-				167	-				190
28	Assets posted as initial margin for derivative contracts and contributions to default funds of central counterparties		-	-	-	-		-	-	-	-
29	NSFR derivative assets		627	-	-	-		613	-	-	12
30	NSFR derivative liabilities before deduction of variation margin posted		53	-	-	53		37	-	-	37
31	All other assets not included in the above categories	-	837	0	213	1,051	-	817	2	216	1,035
32	Off-balance-sheet items		6,010	-	-	154		6,472	-	-	179
33	Total RSF					29,993					29,551
34	NSFR					125%					126%

6. OPERATIONAL RISK

The Bank takes a comprehensive approach to managing operational risk in general (see Section 6.1), and compliance risk (see Section 6.2) and physical and IT security risk (see Section 6.3) in particular.

6.1 Overview

Strategy and processes

The Bank's operational-risk management concept is based on the Basel Committee's principles of best practice and is in keeping with FINMA Circular 2008/21 on operational risks. In particular, the Bank aims to reduce its exposure to:

- breaches of laws, regulations, standards, and Bank directives, including the potential occurrence of a control-related risk event (i.e., resulting from a design flaw in the internal control system, non-compliant implementation of that system, or a lack of rigor in carrying out internal controls);
- erroneous or malicious actions taken by employees, suppliers, bank counterparties, customers, or other parties external to the Bank;
- inadequacies of IT systems (e.g., applications, interfaces, and hardware) and communication systems (e.g., telephone, fax, email, and social networks);
- inappropriate infrastructure;
- an organizational structure that is not adapted to the Bank's activities, both in terms of processes (methods, procedures, organizational structure, etc.) and governance (rules, policies, directives, manuals, etc.);
- natural hazards.

Operational risk factors can give rise to risk events. The Bank categorizes potential risk events as follows:

- non-compliance, that is, a failure to comply with laws, regulations, standards, and Bank directives;
- internal and external fraud, including cybercrime;
- events related to human resources;
- events linked to customer relations and business practices, including money laundering and the financing of terrorism, market abuse, and non-compliance with economic sanctions;
- loss of operating resources;
- failure of information systems;
- events related to transaction and process management.

Structure and organization

The Operational Risk Unit within the Finance & Risks Division's Risk Management Department is in charge of conducting periodic analyses to monitor the Bank's operational-risk profile and gathering and analyzing information on operational incidents that have occurred. This unit develops the methods used for managing operational risk and submits them for approval to the Executive Board's Risk Management Committee. The unit is also responsible for implementing these methods. In addition, the Operational Risk Unit contributes to creating and implementing assessment methods and tools for the Bank's operational internal control system.

Risk reviews and analysis of incidents

Periodic reviews are carried out to identify the main operational risks. These are supplemented by ad-hoc reviews, for instance if a potential new threat arises, if FINMA submits a specific request, or if a major risk event materializes at another bank. These reviews and analyses are conducted by Management and by functional skills centers (e.g., the Compliance and Security departments) with support from the Operational Risk Unit within the Risk Management Department. The aim of the reviews is to reveal possible improvements to the Bank's risk-management system, and particularly to operational and managerial controls.

In addition to identifying risks, the Bank exhaustively and systematically gathers information on and analyzes the main operational events arising from the Bank's activities. These events are recorded in a dedicated operational-risk-management application and analyzed on a monthly basis. In order to monitor the Bank's operational-risk profile, tolerance limits are set for operational events in general and for each category of event.

If an important operational-risk event occurs, the Bank bases its response on clearly defined incident-management measures, such as the Business Continuity Plan (BCP).

Since the Basel II Accord came into force, the Bank has determined its regulatory capital requirements for operational risk in accordance with the Standardized Approach (CAO, Article 93). Under this approach, the Bank allocates income to the eight risk segments set forth by the regulator.

6.2 Compliance risk

Strategy and processes

Compliance risk relates to the risks inherent in money laundering and the financing of terrorism, in market abuse, and in conducting a business relationship with – or receiving or transferring funds for – an individual or legal entity that is subject to economic sanctions. It also covers the respective control-related risks, such as the possibility that there is a design flaw in the internal control system, that implementation of the internal control system is non-compliant, or that internal controls are not rigorously carried out. These control-related risks stem from the Bank's regulatory requirement to have due diligence systems in place in order to mitigate compliance risk.

The Bank's approach to these inherent risks is in line with its position as a full-service bank with solid local roots. BCV's client relationships are representative of its locally focused core businesses and the other business activities that BCV conducts as a full-service bank, either because these activities offer strong synergies with the Bank's core businesses or because they offer solid profitability (e.g., trade finance). In all its business activities, the Bank prioritizes high-quality client relationships and does not enter into client relationships if there is a higher inherent risk in terms of money laundering and the financing of terrorism, market abuse, and economic sanctions.

To manage control-related risks, the Bank makes sure that the internal control system it sets up and implements is in line with its risk profile and relevant reference standards. It also ensures that the system is properly applied throughout the Bank. The internal control system is periodically reviewed so that it remains adapted to the above inherent risks as they evolve.

Structure and organization

The Compliance Department is responsible for setting up, implementing, monitoring, and adapting the internal regulations and control system needed to combat money laundering and the financing of terrorism, monitor market abuse, and comply with economic sanctions. The Department is actively involved in raising employees' awareness of the respective obligations and carries out independent checks to ensure that internal regulations are in line with the Bank's activities.

Risk reviews and analysis of incidents

The Bank is inherently exposed to compliance risks (i.e., money laundering and the financing of terrorism, market abuse, and economic sanctions) when it provides banking services such as administering accounts, accepting funds, and executing transactions for clients. The Bank is also exposed to these risks when it decides whether to take on a client based on characteristics such as the client's place of domicile, the size of their assets, their lending commitments, and their business activities.

The Bank assesses its exposure to the risks inherent in money laundering and the financing of terrorism, economic sanctions, and market abuse on a yearly basis. As part of this process, it categorizes client relationships and transactions based on money-laundering and terrorist-financing risk factors.

The Bank is also exposed to control-related compliance risks arising from the choices it makes concerning:

- the principles and methods used to detect, record, categorize, analyze, and clarify compliance risks;
- its expertise in accepting and reviewing client relationships and transactions, and the related support and control processes;
- the skills and experience of those involved in the control system, and the tools made available to them.

The Bank periodically assesses its control-related compliance risks based on key performance indicators. It looks in particular at the level of compliance with quality standards and money-laundering and terrorist-financing clarification deadlines; how operational-risk controls are carried out and any related delays or non-compliance issues; and the internal and external audits, particularly in terms of criticality, specific issues that arise, and any postponements.

6.3 Security risk

Strategy and processes

Security risk covers risks to IT security, particularly risks relating to cybercrime, and to physical security, which involves keeping people and infrastructure safe. These risks arise from exposure to:

- the IT systems, data, and operations needed for the Bank to run smoothly;
- stakeholders such as clients, employees, partners, and external service providers;
- infrastructure, i.e., buildings and other premises containing Bank property, and all of the equipment the Bank needs to operate.

The Bank works to ensure that it has a security system in place that can respond to identified threats and that can be constantly updated to keep pace with these threats. To respond adequately to threats, the Bank needs to develop and apply sufficiently mature technical and procedural measures, while mitigating the risk against the attack surface.

Structure and organization

The Security Department is responsible for setting up, implementing, monitoring, and adapting the system that keeps the Bank's operations, IT systems, and data secure, and the people, infrastructure, and assets within the Bank safe and secure. It also makes sure that measures put in place to manage crisis situations and ensure business continuity remain effective and adequate over time.

Risk reviews and analysis of incidents

The Bank's level of exposure to each of the main types of risk event is assessed in terms of risk type.

In particular, cyberattack scenarios are identified, compiled, and mapped out by network zone (i.e., the internet, the demilitarized network zone, and the Bank's internal network). In this way, any weaknesses or shortcomings in the security system can be detected and recorded. The Security Department re-assesses the Bank's level of exposure on a quarterly basis. Data-breach scenarios are also identified and recorded. A catalog is kept of security measures and controls used to reduce the likelihood of risk events occurring and mitigate their impact. The controls needed for each data-breach scenario are identified from this catalog, and the residual risk is determined. The scenarios and catalog of measures and controls are reviewed annually.

6.4 Principles governing the Bank's internal control system (ICS)

The Bank's internal control system (ICS) was developed in accordance with the recommendations of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and the Basel

Committee, and pursuant to FINMA Circulars 2017/1 on corporate governance and 2008/21 on operational risk. The purpose of the ICS is to ensure that the Bank's activities are in line with its overall objectives. More specifically, the ICS enables the Bank to:

- achieve its performance objectives in terms of both profit and controlling profit fluctuations;
- provide reliable information both internally and externally;
- comply with legal, regulatory, and self-regulatory requirements.

The Bank has an overall ICS along with an operational ICS.

The overall ICS is designed to ensure that the Bank's risk appetite is in keeping with its risk-taking capacity and that the overall risk-management framework appropriately addresses the risks identified. It comprises a set of measures and procedures that structure the Bank's operations and the orientation of its business. They include: robust governance mechanisms; a clearly defined organizational structure; coherent business goals that will ensure the Bank's longevity; established operating procedures for the Executive Board, the Board of Directors, and their committees; regular reviews of the Bank's overall and business-specific strategies, financial strategy, and risk policy (including key risk limits); and reports that are in line with the Bank's business activities and risk-management framework.

In terms of procedures, implementing an overall risk-management framework involves assigning tasks, responsibilities, and decision-making authority to employees and managers, and setting out the limits, deadlines, procedures, and rules to be followed and the forms and other documents to be used. The overall risk-management framework therefore touches upon all aspects of the Bank's operations.

The operational ICS ensures that managers and other employees comply with the operational procedures governing their work. Department heads are responsible for implementing and updating the procedures for their department and the related operational ICS, with the relevant Division head having ultimate responsibility in this regard.

The operational ICS covers execution-related operational risks (EOR) and the controls put in place to mitigate them. An EOR arises from potential errors, failures or non-compliance with rules, limits or documentation requirements. EORs with Bank-wide relevance are referred to as key EORs. Controls are set up and documented at Bank level for each key EOR. These controls always include operational oversight by employees, conducted in the course of their work, and managerial oversight, conducted at each management level (up to the department head) to ensure that the previous level of oversight was properly carried out.

The ICS comprises three levels. The Executive Board is responsible for the first two levels (the Executive Board's ICS), while the Board of Directors oversees the third level:

- Level one: operational oversight (1a) and managerial oversight (1b) based on the chain of command
- Level two: controlling the appropriateness and effectiveness of level-one oversight by entities independent of the chain of command (e.g., Risk Management and Compliance)
- Level three: periodic reviews of levels one and two by the Internal Audit Department, which is responsible for determining the principles, content, and schedule for these reviews.

The Executive Board assigns extensive oversight responsibility to managers, with centralized functional units providing support. The Executive Board also ensures the requisite separation of tasks to prevent conflicts of interest between level-1 and level-2 oversight.

Executive Board members collectively and individually attach great importance to ensuring that the operational ICS is of a high quality, effective, and adapted to the Bank's needs, and implement the operational ICS rigorously, thereby serving as an example for department heads and all other Bank employees.

The operational ICS is set up and implemented factoring in the Bank's organizational structure, the characteristics of its business lines and functions, its risk levels, and the need to make effective use of the know-how available within the Bank.

7. CLIMATE-RELATED RISK

Introduction

The socioeconomic impacts of the physical hazards caused by climate change and of the transition to a low-carbon economy are increasing and can affect all economic agents, including the financial sector and banks.

The Bank integrates climate-related risk into its risk-management framework, in order to protect its interests and those of its clients. In keeping with the recommendations of supervisory authorities (i.e., FINMA and Basel Committee), the Bank considers the physical hazards caused by acute and chronic climate events and the transition to a low-carbon economy to be risk factors that could impact all categories of risk to which the Bank is exposed – strategic and business risk, credit risk, market risk, and operational risk.

The Bank's Risk Management Policy and Strategy, which is approved each year by the Board of Directors and the Executive Board, defines how these climate-related risk factors should be taken into consideration when assessing risks, and assigns related responsibilities. The regular risk reports submitted to the Board of Directors and Executive Board include information on monitoring the Bank's exposure to climate-related risk factors.

The key aspects of the Bank's approach to managing climate-related risks are described below; they are presented in accordance with the recommended structure and the fundamental principles for effective disclosure established by the Task Force on Climate-related Financial Disclosures (TCFD).

Governance

The Bank manages climate-related risks according to the same basic principles of governance and organization as all other risks (see Section 3.1, "Risk management objectives and governance"). Under these principles, risk-monitoring authority is assigned to the Board of Directors, while the Executive Board is given responsibility for managing and assessing risks, and the Risk Management Department for developing risk-assessment methods. This explicitly includes climate-related risk factors.

The Board of Directors establishes the Bank's policy for managing risk and determines the strategy the Bank will pursue in taking on risk. It is also responsible for high-level oversight of the Bank's risk profile. As part of this, the Board of Directors monitors the Bank's main risk factors and exposures, including those related to the climate. This monitoring is conducted each quarter as part of the quarterly risk reports and on an annual basis as part of the analysis of key risks.

The Executive Board is responsible for ensuring that the risk-management procedures are implemented and operational, and for monitoring the Bank's risk profile. It monitors and assesses the Bank's main risk factors and exposures, including those related to the climate. This monitoring is conducted each quarter as part of the quarterly risk reports and on an annual basis as part of the analysis of key risks.

The Risk Management Department is responsible for developing and improving the Bank's risk-control principles and methods, monitoring the Bank's risk profile, and executing risk reporting. The Department ensures that the Bank's main risk factors and exposures, including those related to the climate, are taken into consideration in these processes.

Risk management

The Bank's approach to managing climate-related risks is fully aligned with its overall risk-assessment principles. The physical impacts of climate change and the transition to a low-carbon economy are among the main risk factors capable of adversely affecting the Bank's exposure to risk. Climate-related risk can therefore be defined as the possibility that a risk event will occur as a result of changes in one or several climate-related risk factors that, in turn, will have a negative impact on the Bank. Climate-related risks may relate to strategic, credit, market, or operational risk.

Climate-related risk factors

- *Climate-related laws, regulations, and the range of societal norms* may evolve significantly in order to speed up the transition to a low-carbon economy. This could involve tighter restrictions on emissions from buildings, vehicles, and industry, stricter disclosure requirements, significant adverse effects on the public image of certain companies and business sectors, and even an increase in climate-related lawsuits;
- *Economic development* may be heavily affected by structural shifts in the economy that occur in response to changes in demand for goods and services and to technological progress. The transition to a low-carbon economy will alter the value of resources; sectors and industries (e.g., the automobile sector) will undergo transformations, and jobs will be relocated;
- *Climate-related physical hazards* are becoming increasingly frequent and more intense as a result of global warming, particularly in certain regions of the world. There are two main types of climate-related physical hazards:
 - Extreme weather events, such as storms (causing flooding, landslides, and avalanches) heatwaves, droughts, and forest fires (i.e., acute physical hazards);
 - Longer-term changes in the climate leading to desertification, coastal erosion, coastal flooding, and less snowfall and melting glaciers in mountain areas (i.e., chronic physical hazards).

As a full-service bank with solid local roots, BCV is exposed to climate-related risk factors in various ways: through its strategic positioning, daily business decisions, lending activities, trading and investment activities, and operational procedures. In all of the Bank's business activities, climate-related risk factors are an integral part of managing risks. Detected sources of exposure are analyzed and monitored by the Board of Directors and Executive Board, in particular via risk reporting.

Strategy

The Bank operates primarily in Vaud Canton, which has a diverse, strongly services-oriented economy; the transition to a low-carbon economy has less of an impact on services than on other sectors of the economy. The Bank makes sure its strategy and objectives are consistent with the commitments made by the Swiss government and Vaud Cantonal Government to combat global warming (i.e., both current commitments and the roadmap to 2030 and 2050 targets).

Below is an assessment of climate-related risk factors for the main sources of exposure: the Bank's lending activities, trading and investment activities, and operational procedures.

Lending activities

The Bank's lending activities mainly comprise mortgage financing, primarily in Vaud Canton, and corporate financing (primarily to companies located in Vaud, but also to select large corporates throughout Switzerland and, to a limited extent, through its international trade-finance activities).

As the Bank's core region has little exposure to climate-related physical hazards, it prioritizes analyzing transition-related risk factors. When assessing credit risk, the Bank systematically examines and monitors the proportion of its exposure that could be put at an increased risk of default by transition-related risk factors. The main exposures are as follows:

- Mortgage exposures: The proportion of residential real-estate financing with a heightened exposure to transition-related risk factors is deemed to be very low (less than 5% of total exposures) and trending downward. Most of these exposures are loans granted to clients with a default rating below the portfolio average, and are on residential properties (i.e., rental properties, single-family homes, and, to a lesser extent, condominiums) that were built before the year 2000 and use fuel oil as the main energy source for heating. The impact of climate-transition risk factors on the Bank's risk of credit loss is considered marginal. In its mortgage lending, the Bank helps to fund the energy transition by offering clients preferential interest rates on environmentally friendly real-estate purchases and green renovations.
- Corporate exposures (excluding trade finance): The proportion of corporate loans granted to companies in sectors most affected by the energy transition is moderate (less than 20%); these loans are not concentrated in any one sector, and no loans are granted to companies involved in

fossil-fuel production. Most of the companies concerned are Swiss companies active in air, sea, or road transportation, construction, manufacturing, and chemicals and pharmaceuticals. The impact of transition-related risk factors on their default risk is deemed to be low and is factored into each individual credit-risk analysis. BCV's corporate lending process now includes a specific analysis of environmental and social risks.

- **Trade-finance exposures:** Financing of fossil-fuel-derived commodities makes up around a quarter of the Bank's trade-finance business (in US dollar terms). A large proportion of this exposure is to liquid and gas petroleum products, while a smaller proportion relates to steam coal. All of this financing is transaction-based and granted for short terms of well under a year; transition-related risk factors have no material impact on the Bank's risk of credit loss. In 2019, the Bank committed to reducing its transaction-based exposure to coal at a slightly faster pace than in the Paris Agreement-compatible scenario (i.e., the rate at which global coal use needs to be phased out of the energy mix in order to meet the emissions target set out in the Paris Agreement, as defined by the International Energy Agency).

Trading and investment activities

Climate-related risk factors have only a limited impact on market risks. The Bank does not engage in proprietary trading and does not invest in a portfolio of equity holdings. For the purposes of liquidity management, the Bank has a portfolio of investment-grade financial investments, which is not concentrated on any one sector and mainly comprises securities issued by the Mortgage-Bond Bank of the Swiss Mortgage Institutions and the Central Mortgage-Bond Institution, and bonds issued by the Swiss federal government, Swiss cantons, and other supranational state entities.

As part of its asset-management activities, BCV makes investments at the request of its private and institutional clients. The value of these client-driven investments may be affected by climate-related risk factors, such as stricter carbon emission laws, adverse public-image trends for certain business sectors and/or companies, changes in the value of resources, and extreme weather events like storms and heatwaves. In 2020, BCV analyzed the exposure of these investments to transition-related risk factors by submitting a representative set of asset portfolios to the PACTA climate compatibility test. The test showed that BCV's portfolios are less exposed to carbon-intensive sectors than the market as a whole (i.e., in comparison to the MSCI World Index and the aggregate portfolios of all banks taking part in the test). Results also indicated that the BCV portfolios' losses would be limited in the event of a sudden transition-related policy shock: under 1% for the aggregate equity portfolio, and less for the bond portfolio. In institutional asset management, the Bank systematically excludes from its equity funds companies that generate 30% or more of their revenues from thermal coal.

Operational procedures

Changes to climate-related legislation, regulations, and the range of societal norms will have an impact on the regulatory requirements governing the Bank's operational procedures. If climate-related transparency requirements become stricter, this could have an impact on the adequacy of the Bank's organization, processes, reporting, and the products and services it provides to clients, particularly in the area of sustainable finance. Each year, the Bank publishes a sustainability report, which is prepared in accordance with Global Reporting Initiative (GRI) Standards, the reference for reporting on sustainable development issues. The Bank is also involved in various external initiatives and partnerships: for instance, BCV is a signatory of the United Nations Principles for Responsible Investment (UNPRI) and a member of Swiss Sustainable Finance; it takes part in the Carbon Disclosure Project (CDP) survey, and has entered into a strategic partnership with Ethos. BCV is taking numerous measures to reduce its carbon footprint, especially when it comes to heating its buildings. It also encourages employees to walk or bike to and from work.

Although BCV is located in a region that has relatively little exposure to climate-related physical hazards, extreme weather events – such as storms, flooding, landslides, and heatwaves – may give rise to operational-risk events affecting individuals (e.g., accidents and illnesses) or operating resources (e.g., damage to buildings). The Bank keeps individuals and infrastructure safe by implementing a set of measures that are based primarily on the Swiss government directives on security planning and business-continuity planning.

Metrics and targets

BCV actively monitors climate-related risk metrics and uses standard methodologies as the basis for its approach, particularly in its lending and client-driven investment activities. For these activities, the Bank also examines other ways to add to its climate and environmental data in order to strengthen its measurement of climate-related risks.

As an example, monitoring the lending portfolio's exposure to transition-related risk factors entails:

- rating mortgage exposures based on the buildings' CO₂ emissions, calculated using a combination of variables (e.g., the Cantonal Building Energy Certificate, the "Minergie" label, the energy source used for heating, the year of construction, and any renovations);
- rating corporate exposures (excluding trade finance) based on whether they are linked to climate-policy-relevant sectors;¹⁹
- rating trade-finance exposures using an in-house methodology based on carbon-footprinting the financed goods.

In the coming years, the Bank will continue to develop its methods for assessing climate-related risks by seeking to adopt best practices and improving the data needed for its assessments. A recent Basel Committee publication stated that measurement methodologies for climate-related risks are still under development. For the moment, there is no market standard. However, the TCFD does now recommend certain carbon-footprinting methodologies, such as the Partnership for Carbon Accounting Financials (PCAF) methodology.

BCV is committed to cutting its direct CO₂ emissions by at least 35% from 2019 levels by 2030. The Bank's direct emissions are published annually in the Sustainability Report, prepared in accordance with GRI Standards.

¹⁹Battiston, S. et al, A climate stress-test of the financial system.

8. APPENDIX

Table 29. Key metrics

In CHF millions, BCV Group, full table, KM1

	a	c	e
	31/12/2021	30/6/2021	31/12/2020
Available capital			
1 Common Equity Tier 1 (CET1)	3,308	3,261	3,252
2 Tier 1 (T1)	3,308	3,261	3,252
3 Total capital	3,334	3,288	3,274
Risk-weighted assets (RWA)			
4 Total RWA	19,265	19,167	18,378
4a Minimum capital requirement	1,541	1,533	1,470
Risk-based capital ratios as % of RWA			
5 CET1 ratio	17.2%	17.0%	17.7%
6 Tier 1 ratio	17.2%	17.0%	17.7%
7 Total capital ratio	17.3%	17.2%	17.8%
Additional CET1 buffer requirements (Basel Committee) as % of RWA			
8 Capital conservation buffer requirement (2.5% from 2019)	2.5%	2.5%	2.5%
9 Countercyclical buffer requirement	-	-	-
11 Total of bank CET1 specific buffer requirements	2.5%	2.5%	2.5%
12 CET1 available after meeting the bank's minimum capital requirements (i.e., after the CET1 allocated to cover minimum capital requirements and any TLAC requirements)	9.3%	9.2%	9.8%
FINMA capital ratio requirements			
12a CET1 buffer (CAO, Annex 8)	4.0%	4.0%	4.0%
12b Countercyclical buffer (CAO, Art. 44 and 44a)	-	-	-
12c CET1 total requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (CAO, Art. 44 and 44a)	7.8%	7.8%	7.8%
12d Tier 1 total requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (CAO, Art. 44 and 44a)	9.6%	9.6%	9.6%
12e Total regulatory capital requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (CAO, Art. 44 and 44a)	12.0%	12.0%	12.0%
Basel III leverage ratio			
13 Total Basel III leverage ratio exposure measure	58,853	58,363	55,996
14 Basel III leverage ratio (Tier 1 capital as % of total Basel III leverage ratio exposure measure)	5.6%	5.6%	5.8%

Net stable funding ratio (NSFR)					
	a	b	c	d	e
	Q4 2021	Q3 2021	Q2 2021	Q1 2021	Q4 2020
18 Available stable funding	37,563	36,890	36,890	35,501	35,501
19 Required stable funding	29,993	29,619	29,619	28,550	28,550
20 NSFR (as %)	125%	125%	125%	124%	124%

Liquidity coverage ratio (LCR)					
	a	b	c	d	e
	Q4 2021	Q3 2021	Q2 2021	Q1 2021	Q4 2020
15 Total high-quality liquid assets (HQLA)	13,446	13,136	12,535	11,528	11,179
16 Total net cash outflow	8,491	8,469	8,355	8,235	7,696
17 LCR	158%	155%	150%	140%	145%

8.1 Reconciliation of financial statements and regulatory exposure

Table 30. Reconciliation of regulatory capital to balance sheet

In CHF millions, BCV Group, CC2²⁰

	a	a-1	c
	Balance sheet as in published financial statements		Reference
	31/12/2021	30/6/2021	
Assets			
Cash and cash equivalents	12,600	11,696	
Due from banks	952	2,408	
Reverse repurchase agreements	158	193	
Loans and advances to customers	6,209	6,087	
Mortgage loans	29,373	28,678	
Trading portfolio assets	200	342	
Positive mark-to-market values of derivative financial instruments	368	338	
Other financial assets at fair value	1,212	1,193	
Financial investments	4,287	4,054	
Accrued income and prepaid expenses	67	61	
Non-consolidated holdings	86	69	
Tangible fixed assets	393	394	
Intangible assets	-	1	
Of which: goodwill	-	1	a
Other assets	46	49	
Total assets	55,952	55,564	
Liabilities			
Due to banks	3,378	4,041	
Repurchase agreements	1,458	1,867	

²⁰Column b, "Under regulatory scope of consolidation," is not included because the numbers are identical to those in column a, "Balance sheet as in published financial statements."

Customer deposits	38,195	37,175
Trading portfolio liabilities	2	1
Negative mark-to-market values of derivative financial instruments	273	185
Other financial liabilities at fair value	1,340	1,333
Medium-term notes	2	2
Bonds and mortgage-backed bonds	7,313	7,226
Accrued expenses and deferred income	139	129
Other liabilities	183	142
Provisions	24	23
Of which: deferred tax liabilities on other intangible assets	1	1
Total liabilities	52,308	52,123
Shareholders' equity		
Reserves for general banking risks	666	666
Share capital	86	86
Statutory reserves, voluntary reserves, retained earnings, and net profit (loss) for the period	2,907	2,701
Treasury shares	-15	-12
Minority interests	0	0
Total shareholders' equity	3,644	3,441

Table 31. Composition of regulatory capitalIn CHF millions, BCV Group, full table, CC1²¹

	a	a-1	b
	Net figures (after transitional arrangements)		References
	31/12/2021	30/6/2021	
Common Equity Tier 1 (CET1)			
1 Issued and paid-in capital, fully eligible	86	86	c
2 Retained earnings, including reserves for general banking and net profit (loss) for the period	3,219	3,159	
3 Capital reserve and currency translation reserve (+/-)	34	35	
5 Minority interests	0	0	
6 CET1 before regulatory adjustments	3,340	3,280	
CET1 regulatory adjustments			
8 Goodwill (net of related tax liability)	-	1	a
12 IRB shortfall of provisions to expected losses	17	5	
16 Net long position in own CET1 instruments	15	12	
28 Total regulatory adjustments to CET1	32	18	
29 Net CET1	3,308	3,261	

²¹Net profit for the current fiscal year is not included in regulatory capital at 30 June (Row 2). Rows not applicable to BCV are not included. The "Impact of transitional arrangements" column is not included because BCV does not apply any transitional arrangements.

Additional Tier 1 capital (AT1)			
36	AT1 before regulatory adjustments	-	-
43	Total regulatory adjustments to AT1	-	-
44	Net AT1	-	-
45	Net Tier 1 capital	3,308	3,261
Tier 2 capital (T2)			
46	Issued and paid-in instruments, fully eligible	-	-
48	Minority interests eligible as T2	-	-
50	Valuation adjustments; provisions and impairment for prudential reasons; compulsory reserves on financial investments	26	26
51	T2 before regulatory adjustments	26	26
T2 regulatory adjustments			
52	Net long position in own T2 instruments	-	-
57	Total regulatory adjustments to T2	-	-
58	Net T2	26	26
59	Total regulatory capital (Net T1 & Net T2)	3,334	3,288
60	Total risk-weighted assets (RWA)	19,265	19,167
Capital ratios			
61	CET1 ratio (item 29 as % of RWA)	17.2%	17.0%
62	T1 ratio (item 45 as % of RWA)	17.2%	17.0%
63	Total capital ratio (item 59 as % of RWA)	17.3%	17.2%
64	Specific CET1 buffer (capital conservation buffer + countercyclical buffer + capital buffer for systemically important banks) (as % of RWA)	2.5%	2.5%
65	Of which: in accordance with Basel minimum standards (as % of RWA)	2.5%	2.5%
68	CET1 available to meet buffer requirements in accordance with Basel minimum standards, after deducting the CET1 covering minimum requirements (as % of RWA)	9.3%	9.2%
68a	CET1 total requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (as % of RWA)	7.8%	7.8%
68b	Of which: countercyclical buffer in accordance with CAO, Art. 44 and 44a (as % of RWA)	0.0%	0.0%
68c	CET1 available (as % of RWA)	13.1%	13.0%
68d	T1 total requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (as % of RWA)	9.6%	9.6%
68e	T1 available (as % of RWA)	14.9%	14.8%
68f	Total regulatory capital requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (as % of RWA)	12.0%	12.0%
68g	Regulatory capital available (as % of RWA)	17.3%	17.2%
Amounts below the thresholds for deduction (before risk weighting)			
72	Non-significant investments in the common stock of other financial entities	22	23
73	Significant investments in the common stock of financial entities	313	312

Table 32. Main features of regulatory capital instrumentsIn CHF millions, BCV Group, CCA²²

		Quantitative or qualitative information
1	Issuer	Banque Cantonale Vaudoise (BCV), corporation organized under public law, founded by the Vaud Cantonal Parliament on 19 December 1845
2	Unique identifier	ISIN CH0531751755
3	Governing laws of the instrument	Cantonal Act Governing the Organization of Banque Cantonale Vaudoise; BCV's articles of association; Swiss Code of Obligations
Regulatory treatment		
4	Transitional Basel III rules	CET1
5	Post-transitional Basel III rules	CET1
6	Eligible at solo/group/group and solo	Group and solo
7	Instrument type (to be specified by each jurisdiction)	Equity
8	Amount recognized in regulatory capital (currency in millions, as of most recent reporting date)	CHF 86
9	Par value of instrument	CHF 1
10	Accounting classification	Share capital
11	Original date of issuance	31 December 1995
12	Perpetual or dated	Perpetual
14	Issuer call subject to prior supervisory approval	No
Coupons and dividends		
17	Fixed or variable coupon or dividend	Variable
19	Existence of a dividend stopper	No
20	Fully discretionary, partially discretionary, or mandatory	Fully discretionary
36	Non-compliant transitioned features	No

²²Rows not used are not included.

Table 33. Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categoriesIn CHF millions, at 31 December 2021, BCV Group, LI1²³

	a	c	d	f	g
	Carrying values				
	As reported in published financial statements	Subject to credit risk framework	Subject to counterparty credit risk framework	Subject to market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets					
Cash and cash equivalents	12,600	12,600			
Due from banks	952	835	118		
Reverse repurchase agreements	158		158		
Loans and advances to customers	6,209	6,163	47		
Mortgage loans	29,373	29,373			
Trading portfolio assets	200			200	
Positive mark-to-market values of derivative financial instruments	368		368	368	
Other financial assets at fair value	1,212	0		1,212	
Financial investments	4,287	4,287	1,442		
Accrued income and prepaid expenses	67	67			
Non-consolidated holdings	86	86			
Tangible fixed assets	393	393			
Intangible assets					
Other assets	46	46			
Total assets	55,952	53,849	2,133	1,780	
Liabilities					
Due to banks	3,378		390		2,988
Repurchase agreements	1,458		1,458		
Customer deposits	38,195				38,195
Trading portfolio liabilities	2			2	
Negative mark-to-market values of derivative financial instruments	273		273	273	
Other financial liabilities at fair value	1,340			1,340	
Medium-term notes	2				2
Bonds and mortgage-backed bonds	7,313				7,313
Accrued expenses and deferred income	139				139
Other liabilities	183				183
Provisions	24	-			24
Total liabilities	52,308	-	2,122	1,615	48,844

²³Column b is not included since the accounting scope of consolidation is identical to the regulatory scope of consolidation.

Exposures relating to the following line items are assessed across several risk categories:

- Mark-to-market values of derivative financial instruments: derivative transactions generate both counterparty credit risk and market risk;
- Financial investments: bonds used in repo transactions or held as collateral with other financial institutions generate both credit risk and counterparty credit risk.

Table 34. Main sources of differences between regulatory exposure amounts and carrying values in financial statements

In CHF millions, at 31 December 2021, BCV Group, LI2

	a	b	d	e
	Total	Items subject to:		
		Credit risk framework	Counterparty credit risk framework	Market risk framework
1 Asset carrying value under regulatory scope of consolidation (as per Table LI1)	57,762	53,849	2,133	1,780
2 Liabilities carrying value under regulatory scope of consolidation (as per Table LI1)	3,737	-	2,122	1,615
3 Total net amount under regulatory scope of consolidation	54,025	53,849	11	165
4 Off-balance sheet amounts	7,478	2,643	-	-
5 Differences in valuations	109	-	109	-
6 Differences due to different netting rules, other than those already included in row 2	210	-	210	-
7 Differences due to consideration of provisions	95	95	-	-
8 Differences due to prudential filters	42	42	-	-
10 Exposure amounts considered for regulatory purposes	61,958	56,629	329	165

Differences between the values reported in the financial statements and the regulatory amounts can be attributed to the following factors:

- Off-balance-sheet positions (contingent liabilities and undrawn revocable and irrevocable credit limits)
- Valuation differences for repo transactions (exposure after regulatory haircut)
- Provisions that are deducted from total exposure amounts according to the accounting standard applied at BCV
- Add-ons to derivative positions and forward contracts

Assets in the trading book are measured at fair value based on their prices in liquid markets. Fair values are checked daily by the Market Risk Unit within the Risk Management Department (see Section 5.1). Given the valuation method that the Bank uses, no prudential valuation adjustments are made (and, as such, Table PV1 is not applicable).

8.2 Leverage ratio

Table 35. Summary comparison of accounting assets vs. leverage ratio exposure measure
In CHF millions, BCV Group, LR1

	31/12/2021	30/6/2021
1 Total consolidated assets as per published financial statements	55,952	55,564
2 Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation, as well as adjustment for assets deducted from Tier 1 capital	-32	-18
3 Adjustment for fiduciary assets recognized on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure	-	-
4 Adjustment for derivative financial instruments	373	284
5 Adjustment for securities financing transactions (SFTs)	6	1
6 Adjustment for off-balance-sheet items	2,555	2,533
7 Other adjustments	-	-
8 Leverage ratio exposure measure	58,853	58,363

The growth in total assets mainly reflects increases in loans and advances to customers, and mortgage lending (see Table 29). The difference between the financial assets reported on the balance sheet and the leverage ratio exposure measure stems primarily from off-balance-sheet transactions (CHF 2.555bn at 31 December 2021). Starting with the Q1 2019 financial statements, the leverage ratio for derivatives exposures is calculated using the SA-CCR.

Table 36. Leverage ratio common disclosures

In CHF millions, BCV Group, LR2

	31/12/2021	30/6/2021
On-balance-sheet exposure		
1 On-balance-sheet exposure (excluding derivatives and SFTs, but including collateral)	53,963	53,189
2 Assets deducted in determining Tier 1 capital	-32	-18
3 Total on-balance-sheet exposures within the leverage ratio framework, excluding derivatives and SFTs	53,931	53,170
Derivative exposure		
4 Replacement cost associated with all derivatives transactions, including those with central counterparties (net of eligible cash variation margin and/or with bilateral netting)	247	197
5 Add-on amounts for PFE associated with all derivatives transactions	644	505
6 Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	-	-
7 Deduction of receivables assets for cash variation margin provided in derivatives transactions	-150	-81
8 Deduction relating to exposure to QCCPs if there is no obligation to reimburse the client in the event of the QCCP defaulting	-	-
9 Adjusted effective notional amount of written credit derivatives, after deduction of negative replacement values	-	-
10 Adjusted effective notional offsets of bought/written credit derivatives and add-on deductions for written credit derivatives	-	-
11 Total derivative exposure	741	622
Securities financing transaction (SFT) exposure		
12 Gross SFT assets with no recognition of netting, including sale accounting transactions, less the items specified in margin no. 58 FINMA Circular 2015/3	1,621	2,037
13 Netted amounts of cash payables and cash receivables relating to SFT counterparties	-	-
14 CCR exposure for SFT assets	6	1
15 Agent transaction exposure	-	-
16 Total SFT exposure	1,626	2,038
Other off-balance-sheet exposure		
17 Off-balance-sheet exposure at gross national amounts before application of credit conversion factors	7,759	7,977
18 Adjustments for conversion to credit equivalent amounts	-5,204	-5,444
19 Total off-balance-sheet exposure	2,555	2,533
Capital and total exposure		
20 Tier 1 capital	3,308	3,261
21 Total exposure	58,853	58,363
Leverage ratio		
22 Leverage ratio	5.6%	5.6%

The difference between the amount of total accounting assets on the balance sheet and the balance-sheet exposure used to calculate the leverage ratio (row 1 of Table 36) is due to the Bank's repo agreements (CHF 1.621bn at 31 December 2021) and derivatives (mark-to-market value of CHF 247m at 31 December 2021).

8.3 Disclosure map, analytical classifications, and abbreviations

8.3.1 Disclosure map

The Basel III Accord sets out the minimum disclosure requirements. The relationships between the tables in the Accord, those in FINMA Circular 2016/1, “Disclosure – banks,” and those in this report are described below.

Table 37. Disclosure map

Basel reference code	Description	BCV table no.	Frequency under FINMA	Comment
Overview				
KM1	Key metrics		2 Semiannual	
OVA	Bank risk management approach	Sec. 3	Annual	
OV1	Overview of RWA	4	Semiannual	
Linkages between financial statements and regulatory exposure				
LI1	Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories	33	Annual	
LI2	Main sources of differences between regulatory exposure amounts and carrying values in financial statements	34	Annual	
LIA	Explanations of differences between accounting and regulatory exposure amounts	Sec. 8	Annual	
PV1	Prudential valuation adjustments		Annual	No prudential valuation adjustments
CC1	Composition of regulatory capital	31	Annual	
CC2	Reconciliation of regulatory capital to balance sheet	30	Annual	Updated half-yearly
CCA	Main features of regulatory capital instruments	32	Annual	
Leverage ratio				
LR1	Summary comparison of accounting assets vs leverage ratio exposure measure	35	Annual	Updated half-yearly
LR2	Leverage ratio common disclosures	36	Annual	
Credit risk				
CRA	General qualitative information about credit risk	Sec. 4	Annual	

CR1	Credit quality of assets	10	Annual	
CR2	Changes in stock of defaulted loans and debt securities	11	Annual	Updated half-yearly
CRB	Additional disclosure related to the credit quality of assets	Sec. 4	Annual	Updated half-yearly
CRC	Qualitative disclosure requirements related to credit risk mitigation techniques	Sec. 4	Annual	
CR3	Credit risk mitigation techniques – overview	12	Annual	Updated half-yearly
CRD	Qualitative disclosure on the Bank's use of external credit ratings under the standardized approach for credit risk	Sec. 4	Annual	
CR4	Standardized approach – credit risk exposure and credit risk mitigation (CRM) effects	17	Annual	Updated half-yearly
CR5	Standardized approach – exposure by asset class and risk weight	18	Annual	
CRE	Qualitative disclosures related to IRB models	Sec. 4	Annual	Updated half-yearly
CR6	IRB – credit risk exposure by portfolio and probability of default (PD) range	13	Semiannual	
CR7	IRB – effect on RWA of credit derivatives used as CRM techniques		Semiannual	No credit derivatives
CR8	RWA flow statements of credit risk exposure under IRB	14	Semiannual	
CR9	IRB – backtesting of PD per portfolio	15	Annual	
CR10	IRB – specialized lending and equities under the simple risk weight method	16 + 24	Semiannual	
CCRA	Qualitative disclosure related to counterparty credit risk	Sec. 4	Annual	
CCR1	Analysis of counterparty credit risk (CCR) exposure by approach		Not required for Category 3 banks	
CCR2	Credit Valuation Adjustment (CVA) capital charge			
CCR3	Standardized approach – CCR exposure by regulatory portfolio and risk weight	20	Annual	Updated half-yearly
CCR4	IRB – CCR exposure by portfolio and PD range	19	Semiannual	
CCR5	Composition of collateral for CCR exposure	21	Annual	Updated half-yearly
CCR6	Credit derivatives exposures		Annual	No credit derivatives

CCR7	RWA flow statements of CCR exposure under the Internal Model Method (IMM)		Semiannual		IMM approach not used at BCV
CCR8	Exposure to central counterparties (CCPs)	22	Annual		Updated half-yearly
Market risk and liquidity					
SECA	Qualitative disclosure requirements related to securitization exposure		Annual		
SEC1	Securitization exposure in the banking book		Annual		
SEC2	Securitization exposure in the trading book		Annual		
SEC3	Securitization exposure in the banking book and associated regulatory capital requirements – bank acting as originator or sponsor		Annual		No securitization
SEC4	Securitization exposure in the banking book and associated regulatory capital requirements – bank acting as investor		Annual		
MRA	General qualitative disclosure requirements related to market risk	Sec. 5	Annual		
MR1	Market risk under Standardized Approach (SA)	23	Annual		Updated half-yearly
MRB	Qualitative disclosures for banks using the Internal Models Approach (IMA)		Annual		IMA approach not used at BCV
MR2	RWA flow statements of market risk exposure under the IMA		Semiannual		BCV does not use an internal model
MR3	IMA values for trading portfolios		Semiannual		
MR4	Comparison of VaR estimates with gains and losses		Semiannual		
IRRBBA	IRRBBA risk management objectives and policies		Annual		
IRRBBA1	Quantitative information on the structure of IRRBB positions and maturity repricing	25 + Sec. 5.3	Annual		Updated half-yearly
IRRB1	Quantitative information on the economic value of equity and net interest income	26 + Sec. 5.3	Annual		
LIQ1	Liquidity Coverage Ratio	27 + Sec. 5	Semiannual		
LIQ2	Net Stable Funding Ratio	28 + Sec. 5	Semiannual		
Operational risk					
ORA	General qualitative information about operational risk management	Sec. 6	Annual		

Remuneration

REMA	Remuneration policy	Annual	
REM1	Remuneration awarded during the financial year	Annual	Not required for BCV
REM2	Special payments	Annual	
REM3	Deferred remuneration	Annual	

8.3.2 Analytical classifications

This section describes the different analytical classifications used in this document that are not already defined within the framework of the Basel III Accord.

Table 38. Basel III Accord asset categories (IRB)

Asset category	Description
Central governments and central banks (F-IRB)	The Swiss national government, BIS, central banks, multilateral development banks eligible for a 0% risk weighting, and foreign governments
Banks and securities firms (F-IRB)	Bank counterparties
Non-central govt. public-sector entities; multilateral development banks (F-IRB)	Cantonal governments and municipal authorities
Corporates – specialized lending (F-IRB)	Real-estate financing for counterparties rated with the “real-estate professionals” rating model, together with trade-finance transactions
Corporates – other lending (F-IRB)	Companies that do not meet the retail criteria, the Mortgage-Bond Bank of the Swiss Mortgage Institutions, and the Central Mortgage-Bond Institution
Mortgage-backed retail exposure	Mortgage-backed exposure to individuals and companies that meet the retail criteria
Other retail exposure	Other exposure to individuals and companies that meet the retail criteria

Table 39. Risk segments

Type of counterparty	Description
Retail	Individuals with less than CHF 250,000 in assets or income, or who have a mortgage loan of up to CHF 1.2 million
Private banking	Individuals who meet at least one of the following criteria: assets or income of more than CHF 250,000, or a mortgage loan of over CHF 1.2 million
SMEs	Small and medium-sized businesses, excluding real-estate professionals and trade-finance counterparties, that employ up to 150 people, are not listed on the stock exchange, and have full-year revenue of below CHF 50 million
Real-estate professionals	Counterparties whose main professional activity is investing in real estate for their own account

Large corporates	Listed companies that meet at least one of the following criteria (excluding trade-finance counterparties): more than 150 employees; or full-year revenue of at least CHF 50 million
Public-sector entities	Swiss national, cantonal, and municipal governments
Trade finance	Non-bank counterparties involved in trade-finance activities
Banks	Bank counterparties, including central counterparties since 1 January 2013

Table 40. Supervisory slotting and PD rating model (scope of F-IRB approach)

BCV rating model	Description
BCV staff	Individuals who are BCV employees
Private banking	Individuals or groups of individuals with no commercial loans and with CHF 300,000 in assets with BCV or who are financed exclusively with Lombard loans
Retail	Individuals or groups of individuals with no commercial loans and who do not meet the criteria for “Private banking” or “BCV employees”
SME	Small and mid-sized businesses, except those that only have loans that are fully secured by cash, securities or a joint and several loan guarantee as described in Article 3 of the Covid-19 Joint and Several Loan Guarantee Ordinance
Large corporates	Large businesses
Banks	Banking institutions
Vaud municipalities	Municipalities in Vaud Canton
Real-estate professionals	Counterparties whose main professional activity is investing in real estate for their own account
Trade finance (supervisory slotting criteria for specialized lending)	Transactions to finance international commodities trading
Real-estate development (supervisory slotting criteria for specialized lending)	Transactions to finance real-estate development

8.3.3 List of abbreviations

ALCO	Asset and Liabilities Management Committee
ALM	Asset and Liability Management
ALM-FM	The Bank's ALM and Financial Management Department
BCV	Banque Cantonale Vaudoise
BIS	Bank for International Settlements
BoD	Board of Directors
CAO	Ordinance of 1 June 2012 concerning capital adequacy and risk diversification for banks and securities traders (known as the "Capital Adequacy Ordinance")
CCF	Credit conversion factor
CCO	Chief Credit Officer
CCP	Central counterparty, an institution that acts as an intermediary between two parties to secure a transaction by becoming the counterparty to the buyer and the seller
CCR	Counterparty credit risk
CEO	Chief Executive Officer
CF	Commodities finance
CFO	Chief Financial Officer
CRM	Credit risk mitigation
CSA	Credit Support Annex, an optional annex for ISDA netting agreements
CVA	Credit valuation adjustment: capital requirement aimed at covering the risk of loss in market value as a result of deterioration in the counterparty's credit quality
ΔEVE	Change in the economic value of equity
ΔNII	Change in net interest income
EAD	Exposure at default
EBCC	Executive Board Credit Committee

EBRMC	Executive Board Risk Management Committee
EL	Expected loss
EURIBOR	Euro Interbank Offered Rate, set of benchmark rates published by the European Money Markets Institute for unsecured interbank funding in euros for periods of up to 12 months
F-IRB	Foundation Internal Ratings-Based approach
FINMA	Swiss Financial Market Supervisory Authority
FINMA-AO	FINMA accounting ordinance of 31 October 2019
GMRA	Global Master Repurchase Agreement of the Public Securities Association/International Securities Market Association (PSA/ISMA)
HQLA	High-quality liquid assets
ICS	Internal control system
ID	BCV's "in default" provisioning category
IMA	Internal Models Approach
IMM	Internal Model Method
IPRE	Income-producing real estate
IRB	Internal ratings-based
IRRBB	Interest-rate risk in the banking book
ISDA	International Swaps and Derivatives Association
LCR	Liquidity coverage ratio
LGD	Loss given default
LIBOR	London Interbank Offered Rate
NII	Net interest income
NSFR	Net stable funding ratio
OTC	Over the counter
PD	Probability of default
PFE	Potential future exposure

QCCP	Qualified central counterparty
RD	BCV's "reputed to be in financial difficulty" provisioning category
RMPS	BCV's Risk Management Policy and Strategy
RWA	Risk-weighted assets
SAR	Swiss Average Rate, the Swiss benchmark rate for repos
SARON	Swiss Average Rate Overnight, the Swiss benchmark rate for overnight repos
SFT	Securities financing transaction
SIC	Swiss Interbank Clearing
SNB	Swiss National Bank
SONIA	Sterling Overnight Interbank Average rate, benchmark rate published by the Bank of England for unsecured interbank funding in pound sterling
SA-BIS	International Standardized Approach in accordance with the CAO
SA-CCR	Standardized Approach for measuring Counterparty Credit Risk
TCFD	Task Force on Climate-related Financial Disclosures
TONAR	Tokyo Overnight Average Rate, benchmark rate published by the Bank of Japan for unsecured interbank funding in yen
VaR	Value at risk

8.4 Parent-company disclosures

When capital and liquidity requirements are calculated at group level, the group is generally only required to provide consolidated disclosures (known as the disclosure exemption).

Under FINMA Circular 2016/1, the Bank is nevertheless required to disclose the following parent-company figures.

Table 41. Main parent-company figures

In CHF millions, at 31 December 2021, KM1

	a	c	e
	31/12/2021	30/6/2021	31/12/2020
Available capital			
1 Common Equity Tier 1 (CET1)	3,295	3,254	3,245
2 Tier 1 (T1)	3,295	3,254	3,245
3 Total capital	3,321	3,279	3,266
Risk-weighted assets (RWA)			
4 Total RWA	19,102	19,040	18,261
4a Minimum capital requirement	1,528	1,523	1,461
Risk-based capital ratios as % of RWA			
5 CET1 ratio	17.3%	17.1%	17.8%
6 Tier 1 ratio	17.3%	17.1%	17.8%
7 Total capital ratio	17.4%	17.2%	17.9%
Additional CET1 buffer requirements (Basel Committee) as % of RWA			
8 Capital conservation buffer requirement (2.5% from 2019)	2.5%	2.5%	2.5%
9 Countercyclical buffer requirement	-	-	-
11 Total of bank CET1 specific buffer requirements	2.5%	2.5%	2.5%
12 CET1 available after meeting the bank's minimum capital requirements (i.e., after the CET1 allocated to cover minimum capital requirements and any TLAC requirements)	9.4%	9.2%	9.9%
FINMA capital ratio requirements			
12a CET1 buffer (CAO, Annex 8)	4.0%	4.0%	4.0%
12b Countercyclical buffer (CAO, Art. 44 and 44a)	-	-	-
12c CET1 total requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (CAO, Art. 44 and 44a)	7.8%	7.8%	7.8%
12d Tier 1 total requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (CAO, Art. 44 and 44a)	9.6%	9.6%	9.6%
12e Total regulatory capital requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (CAO, Art. 44 and 44a)	12.0%	12.0%	12.0%
Basel III leverage ratio			
13 Total Basel III leverage ratio exposure measure	57,683	57,404	55,083

14	Basel III leverage ratio (Tier 1 capital as % of total Basel III leverage ratio exposure measure)	5.7%	5.7%	5.9%
Net stable funding ratio (NSFR)				
18	Available stable funding	36,621	36,074	34,743
19	Required stable funding	29,483	29,313	28,268
20	NSFR	124%	123%	123%

	a	b	c	d	e	
	Q4 2021	Q3 2021	Q2 2021	Q1 2021	Q4 2020	
Liquidity coverage ratio (LCR)						
15	Total high-quality liquid assets (HQLA)	13,113	12,818	12,198	11,215	10,867
16	Total net cash outflow	8,311	8,330	8,196	8,069	7,530
17	LCR	158%	154%	149%	139%	144%