

# 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).<sup>1</sup>

### 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 30 June 2018.<sup>2</sup> The description of the Bank's governance, methods, and processes reflects the situation at 30 June 2018; 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.

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

- Holdings of no material significance in terms of financial reporting and risk;

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<sup>1</sup>The correspondence between the tables in this Pillar 3 report and those in the Basel Accord is given in the Appendix (Section 7.3.1).

<sup>2</sup>BCV's interim financial statements are not audited by an independent auditor.

- 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 30 June 2018, BCV Group

<b>Group companies included in the supervisory review</b>	<b>Capital in millions</b>		<b>Shareholding (%)</b>
<b>Private banks</b>			
Piguet Galland & Cie SA, Yverdon-les-Bains (Switzerland)	CHF	24.4	99.7
<b>Fund-management companies</b>			
Gérifonds SA, Lausanne (Switzerland)	CHF	2.9	100.0
Gérifonds (Luxembourg) SA, Luxembourg (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 the first half of 2018.

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.

There are no restrictions that could hinder the transfer of money or capital within the Group.

## 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 ratios and liquidity ratio before making any major decisions about the Bank's operations and the orientation of its business.

The Executive Board monitors the capital ratios and liquidity ratio 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 requirement<sup>3</sup> 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 13.7% at 30 June 2018. It comprises the permanent requirement for a category 3 bank (12%), a countercyclical buffer (0.7%), 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 countercyclical buffer is a temporary requirement set by the Swiss Federal Council upon the recommendation of the Swiss National Bank. 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.

<sup>3</sup>The capital ratio is equal to regulatory capital divided by risk-weighted assets.

BCV Group's total capital ratio was 16.5% at 30 June 2018, higher than the regulatory requirement of 13.7%. The Bank's common equity tier 1 (CET1) ratio was 16.4%, also above FINMA's requirement of 9.5%. 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 ratio<sup>4</sup> was 6.4% at 30 June 2018 (see tables in Section 7.2). 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 116% in the second quarter of 2018, above the minimum regulatory requirement of 90% for 2018 (see Section 5.4).

**Table 2. Key metrics**

In CHF millions, BCV Group, (KM1)<sup>5</sup>

	a	c	e
	<b>30.06.2018</b>	<b>31.12.2017</b>	<b>30.06.2017</b>
<b>Available capital</b>			
1 Common Equity Tier 1 (CET1)	3,109	3,118	3,079
2 Tier 1 (T1)	3,109	3,118	3,079
3 Total capital	3,132	3,140	3,102
<b>Risk-weighted assets (RWA)</b>			
4 Total RWA	18,949	18,199	18,024
<b>Risk-based capital ratios as % of RWA</b>			
5 CET1 ratio	16.4%	17.1%	17.1%
6 Tier 1 ratio	16.4%	17.1%	17.1%
7 Total capital ratio	16.5%	17.3%	17.2%
<b>FINMA capital ratio requirements (as % of RWA)</b>			
8* Minimum requirement (CAO, Art. 42)	8.0%	8.0%	8.0%
9* Capital buffer (CAO, Art. 43)	4.0%	4.0%	4.0%
10* Countercyclical buffer (CAO, Art. 44)	0.7%	0.7%	0.7%
11* Additional capital (CAO, Art. 45)	1.0%	1.0%	1.0%
12* Total capital requirement	13.7%	13.7%	13.7%
<b>Basel III leverage ratio</b>			
13 Total Basel III leverage ratio exposure measure	48,296	47,886	47,339
14 Basel III leverage ratio (Tier 1 capital as % of total Basel III leverage ratio exposure measure)	6.4%	6.5%	6.5%
<b>Liquidity coverage ratio (LCR)</b>			
15 Total high-quality liquid assets (HQLA)	8,789	9,707	8,138
16 Total net cash outflow	7,599	7,990	7,612
17 LCR	116%	121%	107%

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

<sup>5</sup>Table KM1 is recommended by the Basel Committee and will be required by FINMA starting end-2018. Only the FINMA capital ratio requirements are shown in the table (lines 8\* to 12\*); the Basel Committee requirements (lines 8 to 12 of Table KM1) are less stringent and have not been included to avoid confusion.

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## 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 Swiss accounting rules for banks of 27 March 2014 (FINMA Circular 2015/1).

CET1 capital comprises paid-in capital, disclosed reserves, and minority interests. At 30 June 2018, BCV's share capital amounted to CHF 86,061,900 and consisted of 8,606,190 fully paid-in registered shares with a par value of CHF 10. 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 capital**  
In CHF millions, BCV Group, (CC1, FINMA #2)<sup>6</sup>

	a	a-1	b
	Net figures		References
	30.06.2018	31.12.2017	
<b>Common Equity Tier 1 (CET1)</b>			
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	3,072	3,072	
3 Capital reserve and currency translation reserve (+/-)	34	33	
5 Minority interests	0	0	
<b>6 CET1 before regulatory adjustments</b>	<b>3,192</b>	<b>3,192</b>	
<b>CET1 regulatory adjustments</b>			
8 Goodwill (net of related tax liability)	11	12	a
12 IRB shortfall of provisions to expected losses	53	43	
16 Net long position in own CET1 instruments	19	19	
<b>28 Total regulatory adjustments to CET1</b>	<b>83</b>	<b>74</b>	
<b>29 Net CET1</b>	<b>3,109</b>	<b>3,118</b>	
<b>Additional Tier 1 capital (AT1)</b>			
36 AT1 before regulatory adjustments	-	-	
43 Total regulatory adjustments to AT1	-	-	
44 Net AT1	-	-	
<b>45 Net Tier 1 capital</b>	<b>3,109</b>	<b>3,118</b>	
<b>Tier 2 capital (T2)</b>			
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	23	22	
<b>51 T2 before regulatory adjustments</b>	<b>23</b>	<b>22</b>	
<b>T2 regulatory adjustments</b>			
52 Net long position in own T2 instruments	-	-	
57 Total regulatory adjustments to T2	-	-	
<b>58 Net T2</b>	<b>23</b>	<b>22</b>	
<b>59 Total regulatory capital (Net T1 &amp; Net T2)</b>	<b>3,132</b>	<b>3,140</b>	

There was no material change in regulatory capital in the first half of 2018. The Bank's net profit for H1 2018 is not included in the calculation of regulatory capital at 30 June 2018.

<sup>6</sup>Net profit for the current fiscal year is not included in regulatory capital at 30 June (Line 2). Lines that are not applicable to BCV are not included. The "Impact of transitional arrangements" column is not included because BCV does not have any transitional arrangements. This table is a summary version of Table CC1, which is provided in full in the Appendix (Table 30).

## 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, (OV1, FINMA #4)<sup>7</sup>

		a	b	c
		RWA		Minimum capital requirements
		30.06.2018	31.12.2017	30.06.2018
<b>1</b>	<b>Credit risk (excluding counterparty credit risk)</b>	<b>15,723</b>	<b>14,950</b>	<b>1,258</b>
2	Of which: standardized approach (SA)	3,225	3,002	258
3	Of which: internal ratings-based approach (IRB)	11,910	11,268	953
	Of which: assets without a counterparty	588	680	47
<b>4</b>	<b>Counterparty credit risk (CCR)</b>	<b>418</b>	<b>356</b>	<b>33</b>
5	Of which: standardized approach for counterparty credit risk (SA-CCR)	190	190	15
	Of which: credit valuation adjustment (CVA)	177	139	14
	Of which: comprehensive approach for credit risk mitigation (for SFTs)	51	27	4
<b>7</b>	<b>Equity positions in banking book under market-based approach</b>	<b>134</b>	<b>134</b>	<b>11</b>
<b>9</b>	<b>Equity investments in funds – mandate-based approach</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>10</b>	<b>Equity investments in funds – fall-back approach</b>	<b>22</b>	<b>18</b>	<b>2</b>
<b>10a</b>	<b>Equity investments in funds – simplified approach</b>	<b>44</b>	<b>50</b>	<b>4</b>
<b>11</b>	<b>Settlement risk</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>16</b>	<b>Market risk</b>	<b>257</b>	<b>324</b>	<b>21</b>
17	Of which: standardized approach	257	324	21
<b>19</b>	<b>Operational risk</b>	<b>1,772</b>	<b>1,789</b>	<b>142</b>
21	Of which: standardized approach	1,772	1,789	142
<b>23</b>	<b>Amounts below the thresholds for deduction (250% risk weighting)</b>	<b>579</b>	<b>579</b>	<b>46</b>
<b>24</b>	<b>Floor adjustment</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>25</b>	<b>Total</b>	<b>18,949</b>	<b>18,199</b>	<b>1,516</b>

The increase in risk-weighted assets over the period is mainly due to an expansion in lending and the planned increase in the IRB multiplier for retail mortgage loans.

<sup>7</sup>An additional line has been added under "Credit risk" to indicate non-counterparty-related assets, which consist primarily of real estate and other tangible assets. Under "Counterparty credit risk" a line has been added to indicate credit valuation adjustments (CVAs) and another has been added to indicate securities financing transactions (SFTs) for which BCV uses a comprehensive approach. Derivative transactions for which BCV still uses a market-based approach are included in line 5. Lines 12–15 are not included because BCV does not have any securitization exposure.



Since end-2017, BCV has been using the new regulatory approaches for its holdings in investment funds (as set forth in Article 63.2(f<sup>bis</sup>) 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 4; the fall-back approach is used for holdings in all other funds.

### 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, which reports to the CFO;

- 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.

#### *Risk Management Department*

The Risk Management Department's mission is: to develop and continually improve the Bank's methods and principles for managing credit, market, and operational risk; to monitor the Bank's risk profile; and to oversee and execute risk reporting. The Department ensures that the Bank's internal control system is properly implemented and in keeping with the Bank's needs; 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.

#### *Compliance function*

The compliance function makes sure that the Bank operates in accordance with the regulatory requirements that fall within its purview. Its purview includes regulations related to customer relations, anti-money-laundering and terrorist financing, market monitoring, and transparency. Various entities within the Bank are responsible for transposing the other regulatory requirements and banking regulations that fall within their purview into BCV guidelines and directives and for carrying out independent checks to ensure that those guidelines and directives are being applied. The compliance function reports to the Chief Financial Officer (CFO).

#### *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 looks at three aspects for all types of risk:

- First, the existence of a risk factor, i.e., a source of uncertainty relative to the Bank's interests (e.g., the uncertain financial situation of one of the Bank's counterparties, or an equity position on the trading book with a fluctuating price);
- Second, the occurrence of a risk event, which is a situation that has an adverse effect on the Bank's interests and that is caused by the deterioration of a risk factor (e.g., if one of the Bank's counterparties does not meet its financial obligations, or if a share price falls);
- Third, the assessment of the negative impact that the risk event would have on the Bank's interests (e.g., the need to record a loan impairment charge or a loss on a security).

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 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 exists before and during unwinding of a transaction;
- 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;
- Operational risk. This arises from a possible inadequacy or failure relating to processes, people and/or information systems within and outside the Bank. Operational risk includes the risk of non-compliance; i.e., the risk of the Bank breaching legal requirements, standards, and regulations.

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, inquiries, sanctions, increased monitoring or a restriction on banking activities;
- The reputational impact, that is, the image the Bank projects to the outside world.

#### **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 whether the Bank is exposed to certain risks 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.

- *The impact of risks*

This involves determining the potential financial, regulatory, and reputational impact. For risks with a potential financial impact, this means defining *loss metrics* and *risk metrics* and determining *capital 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. Generally speaking, the Bank uses effective loss, expected loss, and accounting loss to measure loss. Which risk metrics are applied depends on the relevant risk factors and the risk categories in question. These metrics reflect the methods and tools currently available to the Bank. The Bank continually improves and implements the risk metrics to make them more integrated and consistent across the Bank's various activities and risk categories. In terms of capital requirements, the Bank monitors its capital situation in accordance with the FINMA framework.

### **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: breakdown between banks and non-banks and by industry, segment, and region; impaired vs. non-impaired loans; provisions; expected losses; capital requirements; major risks; counterparties with the largest provisions; a watchlist for each business line; and compliance with limits in the RMPS for specific portfolios and 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 on 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: provisions and losses resulting from operational risk, the most significant new provisions and losses, and changes in operational-risk events.

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.

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.

##### *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 new loans and loan renewals. 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 nominal 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, the front line has some lending authority. It is limited to fully secured lending commitments in a limited amount, temporary overdrafts or overruns, and certain employee loans.

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 provisioned 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 on 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 (on the banking book and net positions on 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 two different loss metrics:

- *Expected loss*: The expected loss is determined on the basis of the probability of default and the loss given default for positions not relating to trade finance, and on the basis of slotting criteria for trade-finance positions. A general description of these methods is provided below.
- *Book loss or a loan impairment charge*: Most loan impairment charges are the result of a bottom-up calculation, position by position, following the discovery of RD and ID counterparties and an analysis of the corresponding exposure. These charges reflect the best *a priori* estimate of the loss on specific exposures. The amount of such charges is generally determined using a parameter-based method in which the provisioning ratio is determined and applied to credit-risk exposure. This method is different from that used to calculate the expected loss on performing loans. In some cases, for large commitments or for special or complex situations, the amount of the loan impairment charge is based on a scenario analysis. The Bank also allocates provisions for country risks, which are created whenever there is a major credit risk on commitments that are neither RD nor ID, for reasons relating to adverse situations in a country associated with the commitment.

For performing loans not relating to trade finance, 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 17 sub-ratings (B1.1 to B7).

The ratings B1 to B5.2 are used for counterparties that are neither RD nor ID; B5.3 and B6 are used for counterparties that are RD, which are also considered performing. Counterparties rated B7 are ID or non-performing. Loan impairment charges may be recognized for ID and RD counterparties.

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 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 make up the method 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 risk-management slot is allocated to performing loans relating to trade finance in order to estimate the expected loss. The slot assignment is based on a structured analysis of the counterparty (i.e., the sponsor) and of the transaction. 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 80% 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 30 June 2018, BCV Group (CRE, FINMA #17)<sup>8</sup>

Category	Credit risk		Counterparty credit risk		Total
	F-IRB	SA-BIS	F-IRB	SA-BIS	
Central governments and central banks	-	100%	-	0%	8,217
Banks and securities firms	57%	26%	18%	0%	2,634
Non-central govt. public-sector entities; multilateral development banks	43%	57%	0%	-	1,480
Corporates	72%	27%	0%	1%	15,461
Retail	96%	4%	0%	0%	18,898
<b>Total</b>	<b>67%</b>	<b>31%</b>	<b>1%</b>	<b>0%</b>	<b>46,691</b>

Two main types of exposure are outside the scope of the F-IRB approach:

- Firstly, counterparties for which the Bank does not intend to put in place a rating model. These counterparties 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, counterparties with no loan agreement (i.e., for overdrafts) as well as exposure at the Bank's subsidiaries.
- Secondly, counterparties for which an internal rating model has not yet been implemented. This refers in particular to large corporates.

**Table 6. Risk-weighted assets by approach applied**  
In CHF millions, at 30 June 2018, BCV Group (CRE, FINMA #17)

Category	Credit risk		Counterparty credit risk		Total
	F-IRB	SA-BIS	F-IRB	SA-BIS	
Central governments and central banks	-	100%	-	-	0
Banks and securities firms	70%	23%	6%	0%	984
Non-central govt. public-sector entities; multilateral development banks	51%	49%	0%	-	406
Corporates	73%	26%	0%	1%	9,618
Retail	93%	7%	0%	0%	4,308
<b>Total</b>	<b>78%</b>	<b>21%</b>	<b>1%</b>	<b>1%</b>	<b>15,315</b>

<sup>8</sup>Exposure 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 7.3.2.

## 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 (79%). 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 (82%) 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 30 June 2018, BCV Group, (CRB, FINMA #11)<sup>9</sup>

<b>Region</b>	<b>Non-impaired exposure</b>	<b>Impaired exposure</b>	<b>Provisions and impairments</b>	<b>Total exposure</b>
<b>Customer loans</b>	<b>37,006</b>	<b>275</b>	<b>90</b>	<b>37,281</b>
Vaud Canton	29,335	196	51	29,531
Rest of Switzerland	5,360	46	10	5,406
European Union and North America	410	3	3	413
Rest of world	1,901	30	25	1,931
<b>Bank loans and debt securities</b>	<b>13,178</b>	<b>-</b>	<b>-</b>	<b>13,178</b>
Vaud Canton	10	-	-	10
Rest of Switzerland	10,799	-	-	10,799
European Union and North America	1,360	-	-	1,360
Rest of world	1009	-	-	1009
<b>Total</b>	<b>50,184</b>	<b>275</b>	<b>90</b>	<b>50,459</b>

<sup>9</sup>Tables 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 30 June 2018, BCV Group, (CRB, FINMA #11)

<b>Risk segment</b>	<b>Non-impaired exposure</b>	<b>Impaired exposure</b>	<b>Provisions and impairments</b>	<b>Total exposure</b>
<b>On and off-balance sheet exposure</b>	<b>46,529</b>	<b>275</b>	<b>90</b>	<b>46,805</b>
Retail	10,215	58	12	10,273
Private banking	7,170	65	11	7,235
SMEs	4,572	87	32	4,659
Real-estate professionals	7,478	32	3	7,510
Large corporates	3,538	-	3	3,538
Public-sector entities	2,002	-	0	2,002
Trade finance	2,019	33	27	2,053
Banks	9,535	-	-	9,535
<b>Debt securities</b>	<b>3,655</b>	<b>-</b>	<b>-</b>	<b>3,655</b>
<b>Total</b>	<b>50,184</b>	<b>275</b>	<b>90</b>	<b>50,459</b>

The Bank classifies counterparties into eight risk segments according to their type, main business, and extent of the banking relationship with BCV.<sup>10</sup>

A large percentage of the Bank's exposure (35%) represents lending to retail and private banking customers in the form of mortgages and Lombard loans.

Companies account for 35% 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 19% 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 1.9bn.

<sup>10</sup>Risk segments are described in Section 7.3.2.

**Table 9. Breakdown of exposure by residual contractual maturity**

In CHF millions, at 30 June 2018, BCV Group, (CRB, FINMA #11)

Category	< 1 yr	1-5 yrs	> 5 yrs	No maturity	Subsidiaries	Total Group
Central governments and central banks	290	409	168	7,197	189	8,252
Banks and securities firms	1,274	345	402	712	26	2,759
Non-central govt. public-sector entities; multilateral development banks	555	474	517	984	2	2,533
Corporates	3,777	2,277	1,548	10,367	34	18,003
Retail	457	80	124	17,565	685	18,912
<b>Total</b>	<b>6,353</b>	<b>3,584</b>	<b>2,760</b>	<b>36,825</b>	<b>937</b>	<b>50,459</b>

There is no contractual maturity date for repayment on 73% 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 30 June 2018 (CR1, FINMA #9)

	a	b	c	d
	Gross carrying value of		Provisions and impairments	Net value
	Defaulted exposure	Non-defaulted exposure		
1 Loans (excl. debt securities)	273	39,588	89	39,772
2 Debt securities	-	3,655	-	3,655
3 Off-balance sheet exposure	2	6,942	1	6,943
<b>4 Total</b>	<b>275</b>	<b>50,184</b>	<b>90</b>	<b>50,370</b>

Defaulted loans amounted to CHF 275m at 30 June 2018 and accounted for 0.5% of total exposure. A provision of CHF 90m was recognized for these loans; this represents an average provisioning rate of 33%, 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.

Provisions for latent risks cover high-risk loans to counterparties "reputed to be in financial difficulty" (CHF 0.2m at 30 June 2018), together with country risk (zero at 30 June 2018). Provisions for country risk 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, FINMA #10)

	a
	<b>Defaulted loans</b>
<b>1 Defaulted loans and debt securities at end of previous reporting period</b>	<b>278</b>
2 Loans and debt securities that have defaulted since the last reporting period	53
3 Amounts returned to non-defaulted status	29
4 Amounts written down or written off	20
5 Other changes	-8
<b>6 Defaulted loans and debt securities at end of reporting period</b>	<b>275</b>

Defaulted exposure decreased CHF 3m over the period. 82% of defaulted loans 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:<sup>11</sup>

- 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.

<sup>11</sup>BCV 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 30 June 2018, BCV Group, (CR3, FINMA #13)<sup>12</sup>

	a	b	c	d	e
	Exposures unsecured: carrying amount	Exposures secured by collateral	Exposures secured by collateral, of which: secured amount	Exposures secured by financial guarantees	Exposures secured by financial guarantees, of which: secured amount
1 Loans (excl. debt securities)	26,726	19,483	19,344	624	603
2 Debt securities	3,555	-	-	100	100
<b>3 Total</b>	<b>30,281</b>	<b>19,483</b>	<b>19,344</b>	<b>725</b>	<b>704</b>
4 Of which: defaulted	95	180	173	0	0

### 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):

- Individuals (statistical score);
- BCV staff (default probability pool);
- Private banking (default probability pool);
- SMEs (several statistical scores, depending on the nature of the client and the data available);
- Municipalities in Vaud Canton (expert-based scores);
- Real-estate professionals (several expert-based scores, depending on the nature of the client and the data available);
- Banks (statistical score, integrated into a global analytical approach);
- Joint and several co-debtors (approach based on the transfer of the internal counterparty default rating).

The Bank has also defined and implemented a system of rules governing the transmission of internal ratings for other types of 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

<sup>12</sup>Columns f and g are not included because BCV does not have any credit derivative exposure.



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 has not obtained F-IRB approval, such as large corporates.

#### *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 within the Risk Management Department 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, under the supervision and responsibility of the head of the Risk Management Department.

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 Risk Management Department explaining the main choices made in designing the models 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 Risk Management Department 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, under the supervision and responsibility of the head of the Risk Management Department.

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 Risk Management Department 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 Risk Management Department 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 30 June 2018, BCV Group, (CR6, FINMA #18)

	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
<b>3 Banks and securities firms (F-IRB)</b>												
0.00 to <0.15	982	456	32%	1'129	0.04%	130	45%	2.03	226	20%	0	
0.15 to <0.25	20	18	21%	24	0.21%	13	45%	1.17	11	46%	0	
0.25 to <0.50	39	70	20%	53	0.37%	22	45%	1.00	33	62%	0	
0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	
0.75 to <2.50	111	66	20%	124	1.20%	22	45%	1.00	132	106%	1	
2.50 to <10.00	130	129	23%	159	6.35%	42	45%	1.00	290	182%	5	
10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (default)	-	-	-	-	-	-	-	-	-	-	-	
<b>Sub-total</b>	<b>1,281</b>	<b>739</b>	<b>28%</b>	<b>1,489</b>	<b>0.82%</b>	<b>229</b>	<b>45%</b>	<b>1.78</b>	<b>691</b>	<b>46%</b>	<b>6</b>	<b>-</b>
<b>5 Non-central govt. public-sector entities; multilateral development banks (F-IRB)</b>												
0.00 to <0.15	630	513	0%	605	0.06%	229	45%	3.66	184	30%	0	
0.15 to <0.25	19	11	-	19	0.21%	12	45%	3.50	11	58%	0	
0.25 to <0.50	2	1	-	1	0.37%	7	45%	2.26	0	61%	0	
0.50 to <0.75	12	-	-	12	0.57%	1	45%	3.80	11	95%	0	
0.75 to <2.50	1	-	-	0	1.22%	1	45%	4.98	0	138%	0	
2.50 to <10.00	-	-	-	-	-	-	-	-	-	-	-	
10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (default)	-	-	-	-	-	-	-	-	-	-	-	
<b>Sub-total</b>	<b>664</b>	<b>525</b>	<b>0%</b>	<b>637</b>	<b>0.08%</b>	<b>250</b>	<b>45%</b>	<b>3.65</b>	<b>208</b>	<b>33%</b>	<b>0</b>	<b>-</b>
<b>9 Corporates - other lending (F-IRB)</b>												
0.00 to <0.15	934	457	3%	936	0.09%	158	43%	2.71	249	27%	0	
0.15 to <0.25	202	70	28%	222	0.21%	62	42%	2.72	96	43%	0	
0.25 to <0.50	409	78	12%	417	0.37%	124	43%	2.47	219	53%	1	
0.50 to <0.75	169	42	10%	169	0.57%	68	43%	2.73	115	68%	0	
0.75 to <2.50	672	131	18%	690	1.30%	237	44%	2.39	585	85%	4	
2.50 to <10.00	74	8	20%	74	4.01%	23	44%	2.09	87	117%	1	
10.00 to <100.00	6	0	-	6	21.00%	2	42%	2.49	11	190%	1	
100.00 (default)	79	1	34%	79	100.00%	14	27%	2.44	57	72%	21	
<b>Sub-total</b>	<b>2,545</b>	<b>788</b>	<b>9%</b>	<b>2,593</b>	<b>0.68%</b>	<b>688</b>	<b>43%</b>	<b>2.56</b>	<b>1,418</b>	<b>55%</b>	<b>29</b>	<b>21</b>

	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
<b>11 Mortgage-backed retail exposure</b>												
0.00 to <0.15	6,785	43	100%	6,828	0.09%	16,950	13%	2.50	398	6%	1	
0.15 to <0.25	3,506	40	99%	3,545	0.21%	6,338	16%	2.50	449	13%	1	
0.25 to <0.50	2,880	53	100%	2,932	0.37%	4,172	19%	2.51	671	23%	2	
0.50 to <0.75	1,085	22	100%	1,107	0.57%	1,565	20%	2.50	342	31%	1	
0.75 to <2.50	2,128	54	98%	2,181	1.32%	3,019	21%	2.48	1,163	53%	6	
2.50 to <10.00	370	5	98%	375	4.90%	525	20%	2.48	430	115%	4	
10.00 to <100.00	12	0	100%	12	21.00%	21	23%	2.48	24	202%	1	
100.00 (default)	127	0	77%	127	100.00%	145	8%	2.47	211	166%	10	
<b>Sub-total</b>	<b>16,892</b>	<b>218</b>	<b>99%</b>	<b>17,108</b>	<b>0.48%</b>	<b>32,736</b>	<b>16%</b>	<b>2.50</b>	<b>3,688</b>	<b>22%</b>	<b>26</b>	<b>11</b>
<b>13 Other retail exposure</b>												
0.00 to <0.15	305	248	100%	553	0.11%	1,573	14%	1.45	21	4%	0	
0.15 to <0.25	32	52	98%	83	0.21%	1,051	56%	1.49	21	25%	0	
0.25 to <0.50	31	58	98%	88	0.37%	4,166	75%	1.54	42	48%	0	
0.50 to <0.75	22	37	90%	55	0.57%	374	80%	1.51	36	65%	0	
0.75 to <2.50	105	119	93%	215	1.33%	2,261	70%	1.70	174	81%	2	
2.50 to <10.00	21	10	96%	30	4.48%	371	67%	1.95	31	103%	1	
10.00 to <100.00	0	0	100%	0	21.00%	7	58%	1.92	0	140%	0	
100.00 (default)	26	1	79%	27	100.00%	278	75%	2.37	7	26%	21	
<b>Sub-total</b>	<b>541</b>	<b>526</b>	<b>97%</b>	<b>1,052</b>	<b>0.55%</b>	<b>10,082</b>	<b>40%</b>	<b>1.55</b>	<b>332</b>	<b>32%</b>	<b>24</b>	<b>21</b>
<b>Total</b>	<b>21,923</b>	<b>2,797</b>	<b>36%</b>	<b>22,880</b>	<b>0.51%</b>	<b>43,985</b>	<b>23%</b>	<b>2.45</b>	<b>6,338</b>	<b>28%</b>	<b>85</b>	<b>53</b>

In Tables 13 and 15, the average PD subtotals do not include defaulted exposure

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 two rating models (for 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 and joint and several co-debtors).

**Table 14. RWA flow statements of credit risk exposure**

In CHF millions, BCV Group, (CR8, FINMA #20)

	a
	<b>RWA amount</b>
<b>1 RWA at end of previous reporting period</b>	<b>5,963</b>
2 Asset size	+166
3 Asset quality	-57
4 Model updates	+0
5 Methodology and policy	+268
6 Acquisitions and disposals	+0
7 Foreign exchange movements	-1
8 Other	+0
<b>9 RWA at end of reporting period</b>	<b>6,338</b>

The amount of risk-weighted assets determined using the IRB approach (excluding specialized lending) grew by CHF 375m over the first half, mainly due to higher lending volumes and the planned increase in the IRB multiplier for retail mortgage loans.

**Table 15. IRB – backtesting of PD per portfolio**

In CHF millions, at 31 December 2017, BCV Group, (CR9, FINMA #21)

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, 2010-2017	
			End of previous year	End of year				
<b>3 Banks and securities firms (F-IRB)</b>								
0.00 to <0.07	0.04%	0.04%	128	107				-
0.07 to <0.28	0.17%	0.16%	30	27				-
0.28 to <1.44	0.66%	0.69%	48	50				-
1.44 to <4.30	3.41%	3.41%	21	10				-
4.30 to <8.99	7.08%	7.08%	26	20				-
8.99 to <100.00	-	-	-	-				-
100.00 (default)	-	-	-	-				-
<b>Sub-total</b>	<b>0.83%</b>	<b>1.02%</b>	<b>254</b>	<b>214</b>	<b>-</b>	<b>-</b>		<b>-</b>
<b>5 Non-central govt. public-sector entities; multilateral development banks (F-IRB)</b>								
0.00 to <0.07	0.05%	0.05%	192	189				-
0.07 to <0.28	0.13%	0.14%	47	54				-
0.28 to <1.44	0.79%	0.66%	12	5				-
1.44 to <4.30	-	-	-	-				-
4.30 to <8.99	-	-	-	-				-
8.99 to <100.00	-	-	-	-				-
100.00 (default)	-	-	-	-				-
<b>Sub-total</b>	<b>0.08%</b>	<b>0.08%</b>	<b>251</b>	<b>248</b>	<b>-</b>	<b>-</b>		<b>-</b>
<b>9 Corporates - other lending (F-IRB)</b>								
0.00 to <0.07	0.05%	0.05%	51	49				-
0.07 to <0.28	0.14%	0.15%	171	164				-
0.28 to <1.44	0.66%	0.67%	382	352				0.13%
1.44 to <4.30	2.35%	2.27%	99	106				1.92%
4.30 to <8.99	5.54%	5.64%	12	8				13.79%
8.99 to <100.00	21.00%	21.00%	1	2				24.07%
100.00 (default)	100.00%	100.00%	18	13				-
<b>Sub-total</b>	<b>0.74%</b>	<b>0.86%</b>	<b>734</b>	<b>693</b>	<b>2</b>	<b>-</b>		<b>0.60%</b>

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, 2010-2017	
			End of previous year	End of year				
<b>11 Mortgage-backed retail exposure</b>								
0.00 to <0.07	0.05%	0.05%	7,814	7,396			0.04%	
0.07 to <0.28	0.15%	0.15%	15,672	15,750			0.07%	
0.28 to <1.44	0.58%	0.58%	7,891	8,072			0.24%	
1.44 to <4.30	2.41%	2.40%	1,143	1,247			1.24%	
4.30 to <8.99	6.47%	6.33%	153	249			4.63%	
8.99 to <100.00	21.00%	21.00%	15	20			16.04%	
100.00 (default)	100.00%	100.00%	119	142			-	
<b>Sub-total</b>	<b>0.49%</b>	<b>0.38%</b>	<b>32,807</b>	<b>32,875</b>	<b>65</b>	<b>-</b>	<b>0.20%</b>	
<b>13 Other retail exposure</b>								
0.00 to <0.07	0.05%	0.05%	138	126			0.32%	
0.07 to <0.28	0.12%	0.16%	2,689	2,534			0.17%	
0.28 to <1.44	0.70%	0.56%	3,329	3,032			0.71%	
1.44 to <4.30	2.37%	2.40%	1,779	1,678			2.36%	
4.30 to <8.99	5.74%	5.97%	228	219			6.44%	
8.99 to <100.00	21.00%	21.00%	17	11			19.33%	
100.00 (default)	100.00%	100.00%	387	301			-	
<b>Sub-total</b>	<b>0.61%</b>	<b>1.01%</b>	<b>8,569</b>	<b>7,902</b>	<b>86</b>	<b>2</b>	<b>1.01%</b>	
<b>Total</b>	<b>0.53%</b>	<b>0.50%</b>	<b>42,614</b>	<b>41,932</b>	<b>153</b>	<b>2</b>	<b>0.34%</b>	

	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 2017) 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, 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 trade finance, the slotting is based on a structured analysis of the counterparty (i.e., the sponsor) and of the transaction. 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).

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

In CHF millions, at 30 June 2018, BCV Group, (CR10, FINMA #22)<sup>13</sup>

Regulatory category	On-balance sheet amount	Off-balance sheet amount	RW	Exposure amount			RWA	Expected loss
				CF	IPRE	Total		
Strong	4,048	780	50%	732	3,810	4,543	2,408	1
Good	3,083	564	70%	1,034	2,515	3,549	2,622	14
Satisfactory	355	99	115%	263	175	438	524	12
Weak	2	2	250%	3	2	5	11	0
Default	41	-	-	33	8	41	8	20
<b>Total</b>	<b>7,528</b>	<b>1,446</b>		<b>2,066</b>	<b>6,510</b>	<b>8,576</b>	<b>5,572</b>	<b>48</b>

Lending to real-estate professionals increased by CHF 132m in the first half of 2018. The vast majority (97%) 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 grew by CHF 138m over the period. 85% of trade-finance transactions are in the “strong” and “good” slots, as they are secured by recognized collateral (especially cash and merchandise).

<sup>13</sup>Table 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 26 (in Section 5.2, “Risk on equity securities on 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 (Capital Adequacy Ordinance, appendix 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 large corporates and 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 34% of the portfolio that is assessed using the SA-BIS. This category includes large corporates for which a compatible IRB default rating model is not yet in operation, and bonds from the Central Mortgage-Bond Institution and the Mortgage-Bond Bank of the Swiss Mortgage Institutions (weighting of 20%). The Bank's exposure to large corporates grew by approximately CHF 150m in the first half of 2018.

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) effects**  
In CHF millions, at 30 June 2018, BCV Group, (CR4, FINMA #15)<sup>14</sup>

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	8,200	52	8,200	-			0	0%	
2 Banks and securities firms	608	131	608	65			228	34%	
3 Non-central govt. public-sector entities; multilateral development banks	841	502	841	1			198	23%	
4 Corporates	3,707	1,988	3,619	581			2,516	60%	
5 Retail	707	27	707	26			284	39%	
<b>8 Total</b>	<b>14,064</b>	<b>2,701</b>	<b>13,976</b>	<b>673</b>			<b>3,225</b>	<b>22%</b>	

The impact of risk mitigation measures is low in the scope of the SA-BIS. This is due to the predominance of exposure to large corporates and Swiss federal and cantonal governments, which are generally not secured. 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.

<sup>14</sup>Equities (line 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 30 June 2018, BCV Group, (CR5, FINMA #16)<sup>15</sup>

	a	c	d	e	f	g	h	j
<b>Category/Risk weight</b>	<b>0%</b>	<b>20%</b>	<b>35%</b>	<b>50%</b>	<b>75%</b>	<b>100%</b>	<b>150%</b>	<b>Total credit exposure post-CCF and post-CRM</b>
1 Central governments and central banks	8,200	-	-	0	-	0	-	8,200
2 Banks and securities firms	18	525	-	15	-	115	-	673
3 Non-central govt. public-sector entities; multilateral development banks	-	744	-	98	-	-	-	842
4 Corporates	-	1,989	81	68	7	2,047	9	4,200
5 Retail	0	-	426	-	128	179	0	733
6 Equity	-	-	-	-	-	-	-	-
7 Other assets	-	-	-	-	-	-	-	-
<b>8 Total</b>	<b>8,219</b>	<b>3,258</b>	<b>507</b>	<b>181</b>	<b>134</b>	<b>2,341</b>	<b>9</b>	<b>14,649</b>
9 Of which: secured by residential property	-	-	507	-	29	21	-	557
10 Of which: past-due loans	0	-	-	-	2	4	-	6

<sup>15</sup>Columns b and i are not applicable to BCV.

### 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 (Art. 62.1(b) of the CAO). 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. 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, exposure is determined according to the current exposure method (Basel II Accord, annex IV, figures 91ff), taking account of regulatory add-ons as well as 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. Analysis of counterparty credit risk (CCR)**

In CHF millions, at 30 June 2018, BCV Group, (CCR1, FINMA #24)<sup>16</sup>

	a	b	d	e	f
	Replacement cost	Potential future exposure	Alpha used for calculating regulatory EAD	EAD post-CRM	RWA
1 SA-CCR (for derivatives)	171	231	1	433	129
4 Comprehensive approach to credit risk mitigation (for SFTs)				174	51
<b>6 Total</b>					<b>179</b>

**Table 20. IRB – CCR exposure by portfolio and PD range**

In CHF millions, at 30 June 2018, BCV Group, (CCR4, FINMA #27)<sup>17</sup>

	a	b	c	d	e	f	g
PD range	EAD post-CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
<b>3 Banks and securities firms (F-IRB)</b>							
0.00 to <0.15	445	0.21%	60	45%	0.51	54	12%
0.15 to <0.25	16	0.29%	7	45%	1.48	8	50%
0.25 to <0.50	1	0.37%	2	45%	0.11	0	48%
0.50 to <0.75	-	-	-	-	-	-	-
0.75 to <2.50	-	-	-	-	-	-	-
2.50 to <10.00	-	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (default)	-	-	-	-	-	-	-
<b>Sub-total</b>	<b>462</b>	<b>0.22%</b>	<b>69</b>	<b>45%</b>	<b>0.54</b>	<b>62</b>	<b>14%</b>
<b>Total</b>	<b>470</b>	<b>0.23%</b>	<b>245</b>	<b>45%</b>	<b>0.56</b>	<b>68</b>	<b>14%</b>

<sup>16</sup>Derivative exposure at 30 June 2018 was calculated using the market-based approach. SA-CCR will be applied from 31 December 2018 as required by Swiss regulations. The lines and columns not applicable to BCV are not included.

<sup>17</sup>The following portfolios are not shown in the table because they do not have a material amount of RWA: "Non-central government public-sector entities; multilateral development banks" (RWA < CHF 1m); "Corporates – other lending" (RWA = CHF 4m); and "Other retail exposure" (RWA = CHF 2m).

**Table 21. Standardized approach – CCR exposure by regulatory portfolio and risk weight**  
In CHF millions, at 30 June 2018, BCV Group, (CCR3, FINMA #26)

	a	b	c	d	e	f	g	h	i
	Risk weight								Total credit exposure
Category	0%	10%	20%	50%	75%	100%	150%	Other	
1 Central governments and central banks	16	-	-	-	-	-	-	-	16
2 Banks and securities firms	-	-	10	-	-	-	-	-	10
3 Non-central govt. public-sector entities; multilateral development banks	-	-	-	-	-	-	-	-	-
4 Corporates	-	-	0	-	-	79	0	-	80
5 Retail	-	-	-	-	0	0	0	-	1
6 Equity	-	-	-	-	-	-	-	-	-
7 Other assets	-	-	-	-	-	-	-	-	-
<b>9 Total</b>	<b>16</b>	<b>-</b>	<b>10</b>	<b>-</b>	<b>0</b>	<b>80</b>	<b>0</b>	<b>-</b>	<b>107</b>

Counterparty credit risk exposure determined using the standardized approach consists of derivative positions and repo agreements with supranational institutions and large corporates.

**Table 22. Credit valuation adjustment (CVA) capital charge**

In CHF millions, at 30 June 2018, BCV Group, (CCR2, FINMA #25)

	a	b
	EAD post-CRM	RWA
<b>Total portfolios subject to the Advanced CVA capital charge</b>	-	-
1 i) VaR component (including the 3x multiplier)		-
2 ii) Stressed VaR component (including the 3x multiplier)		-
<b>3 Total portfolios subject to the Standardized CVA capital charge</b>	<b>456</b>	<b>177</b>
<b>4 Total subject to the CVA capital charge</b>	<b>456</b>	<b>177</b>

**Table 23. Composition of collateral for CCR exposure**In CHF millions, at 30 June 2018, BCV Group, (CCR5, FINMA #28)<sup>18</sup>

	a	b	c	d	e	f
	<b>Collateral used in derivative transactions</b>					
	<b>Fair value of collateral received</b>		<b>Fair value of posted collateral</b>		<b>Collateral used in SFTs</b>	
<b>Type of collateral</b>	<b>Segregated</b>	<b>Non-segregated</b>	<b>Segregated</b>	<b>Non-segregated</b>	<b>Fair value of collateral received</b>	<b>Fair value of posted collateral</b>
1 Cash in CHF	34	-	12	-	50	-
2 Cash in other currencies	143	-	144	-	1,595	322
3 Swiss sovereign debt	-	-	13	1	1	271
4 Other sovereign debt	-	-	-	23	26	47
5 Government agency debt	-	-	97	8	17	1,283
6 Corporate bonds	-	-	33	-	233	255
7 Equity securities	-	-	-	-	5	-
8 Other collateral	-	-	-	-	-	-
<b>9 Total</b>	<b>177</b>	<b>-</b>	<b>299</b>	<b>32</b>	<b>1,927</b>	<b>2,177</b>

<sup>18</sup>This 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 24, 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 24, 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 based on the positive mark-to-market value plus an add-on; other exposures are determined using market values. 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 24. Exposure to central counterparties (CCPs)**

In CHF millions, at 30 June 2018, BCV Group, (CCR8, FINMA #31)

	a	b
	<b>EAD post-CRM</b>	<b>RWA</b>
1 Total exposure to qualified central counterparties (QCCPs)		62
2 Exposure for trades at QCCPs (excl. initial margin and default fund contributions)	77	46
3 Of which: OTC derivatives	12	0
4 Of which: exchange-traded derivatives	65	45
7 Segregated initial margin	110	
8 Non-segregated initial margin	26	13
9 Pre-funded default fund contributions	11	3

## 5. MARKET RISK

### 5.1 Market risk on 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 departments' 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 new 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 at 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 on 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 30 June 2018. Of these assets, a significant portion was made up of currency swaps for customer-driven forex trading and bond positions. Assets weighted for equity risk result primarily from nostro positions managed by the Asset Management Department.

**Table 25. Market risk under Standardized Approach (SA)**

In CHF millions, BCV Group, (MR1, FINMA #39)

	a	a-1
	RWA	
	30.06.2018	31.12.2017
<b>Outright products</b>	<b>247</b>	<b>315</b>
1 Interest-rate risk (general and specific)	148	139
2 Equity risk (general and specific)	45	38
3 Foreign-exchange risk	54	138
4 Commodity risk	-	-
<b>Options</b>	<b>9</b>	<b>9</b>
5 Simplified approach	-	-
6 Delta-plus method	9	9
7 Scenario approach	-	-
<b>8 Securitization</b>	<b>-</b>	<b>-</b>
<b>9 Total</b>	<b>257</b>	<b>324</b>

## 5.2 Risk on equity securities on the banking book

Equity securities on 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 30 June 2018 were investments in financial companies (a 13.6% stake in the Swiss Central Mortgage-Bond Institution, a 4.8% stake in Aduno, a 4.0% 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 26. IRB – equities under the simple risk-weight method**

In CHF millions, at 30 June 2018, BCV Group, (CR10, FINMA #22)<sup>19</sup>

<b>Regulatory category</b>	<b>RW</b>	<b>Exposure amount</b>	<b>RWA</b>
Exchange-traded equity exposure	300%	10	31
Other equity exposure	400%	24	104
<b>Total</b>		<b>34</b>	<b>134</b>

<sup>19</sup>Table 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 5.2, “Slotting approach for specialized lending”).

### 5.3 Interest-rate risk on the banking book

#### *Strategy and processes*

The Board of Directors establishes the Bank's principles for managing risk and decides on the risk strategy it will pursue, which includes the target profile for interest-rate risk on the banking book (IRRBB). The target interest-rate risk profile is defined in the Financial Strategy and reviewed annually as part of the Financial Management Policy (FMP). The process for defining the IRRBB target profile is guided by limits approved by the Board of Directors in the form of equity duration.

#### *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.

Within the Finance & Risks Division, IRRBB management is centralized by 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 Executive Board's Risk Management Committee and by 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.

Interest-rate risks from trading activities represent market risks and are 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 30 June 2018, in terms of sensitivity, the parent company's IRRBB accounted for 98% of the Group's IRRBB position.

Within the parent company, interest-rate risk positions are consolidated through a fund transfer pricing process to systematically hedge business activities against interest-rate risk. For this, interest-rate reset frequencies are determined on the basis of the transactions' contractual features. For non-maturing products such as variable-rate loans, savings, sight accounts, and debit accounts, interest-rate reset frequencies are determined using replicating models. These models take into consideration clients' historical behavior in terms of refinancing and funding requirements. Options positions are converted into their delta equivalent in terms of interest-rate positions. The assumptions and parameters used in the replicating models are reviewed annually by the ALM-FM and approved by the ALCO. Customers wishing to pay off their loans before maturity must pay an early repayment fee that is calculated using a rate equal to the difference between the interest rate on the loan and the interest that the Bank would obtain on the market if it were to conduct a replacement transaction for the remaining period until maturity; this rate is applied to the remaining amount due. That prevents the Bank from incurring losses from early repayments; as a result, the Bank does not use a specific model for early repayments.

Risk positions are measured on a monthly basis using two types of indicators:

- Static indicators, which measure the sensitivity of the net current value of the banking book, including:
  - The sensitivity of the economic value of equity capital to an interest-rate change of 100bp;
  - The current value of equity capital;
  - The duration of equity capital;
  - The VaR of the net current value of equity capital;
  - Key rate durations.
  
- Dynamic indicators, which measure the sensitivity of the net interest margin to different interest-rate scenarios. These indicators simulate the net interest margin over the following three years based on seven interest-rate scenarios. Each scenario takes into account changes in the balance sheet and in client behavior. These simulations also include calculations of the value and duration of equity capital at future dates.

Additional stress tests are carried out on an ad-hoc basis and according to market conditions, in order to determine the Bank's capacity to withstand extreme shocks.

#### *Risk reduction*

The hedging instruments that are most commonly used are interest-rate swaps. Options positions on the banking book are systematically hedged through market transactions.

Additional hedging simulations are carried out monthly and discussed in the monthly reports. The ALCO uses this information to determine whether the Bank should change its interest-rate-risk exposure. ALCO decisions are executed on the market by the ALM-FM Department's Treasury team.

#### **Table 27. Interest-rate sensitivity**

In CHF millions, parent company, change in the value of the Bank's capital given a 100 basis-point increase in interest rates (IRR)

	<u>Cash flow in CHF</u>					<u>Total CHF</u>	<u>Cash flow in other currencies</u>		
	<u>Interest-rate maturity</u>						EUR	USD	Other
	<u>&lt;3 months</u>	<u>3-12 months</u>	<u>1-4 years</u>	<u>4-7 years</u>	<u>&gt;7 years</u>				
<b>30.06.2018</b>	1.4	15.9	1.7	-324.7	-86.7	<b>-392.3</b>	0.1	0.6	-0.0
<b>31.12.2017</b>	1.1	16.6	9.4	-327.5	-63.0	<b>-363.4</b>	0.5	0.6	-0.1

## 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 target liquidity-risk profile is expressed in the form of internal limits for the liquidity coverage ratio (LCR) and for other metrics used to analyze the balance sheet's structure. These internal limits are reviewed annually.

### *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.

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 setting internal limits.

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### *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 16% 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 3% 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 (3%).

### *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. For banks that, like BCV, are not systemically important, the minimum requirement for the LCR is 90% for 2018 and will be raised to 100% for 2019.



**Table 28. Liquidity coverage ratio (LCR)**  
In CHF millions, BCV Group, (LIQ1, FINMA #48)

	Q2 2018		Q1 2018	
	Total unweighted value	Total weighted value	Total unweighted value	Total weighted value
<b>High-Quality Liquid Assets (HQLA)</b>				
<b>1 Total HQLA</b>		<b>8,789</b>		<b>8,654</b>
<b>Cash outflows</b>				
2 Retail deposits	19,722	1,796	19,542	1,780
3 Of which: stable deposits	5,958	298	5,943	297
4 Of which: less-stable deposits	13,764	1,498	13,600	1,483
5 Unsecured wholesale funding	12,791	6,545	12,104	6,672
6 Of which: operational deposits (all counterparties) and deposits in networks of cooperative banks	1,641	410	1,378	344
7 Of which: non-operational deposits (all counterparties)	11,057	6,042	10,671	6,271
8 Of which: unsecured debt	93	93	56	56
9 Secured wholesale funding		93		133
10 Additional requirements	2,333	710	2,388	733
11 Of which: cash outflows related to derivative exposure and other collateral requirements	664	264	675	271
13 Of which: cash outflows related to credit and liquidity facilities	1,668	446	1,713	463
14 Other contractual funding obligations	56	57	19	14
15 Other contingent funding obligations	2,572	129	2,657	133
<b>16 Total cash outflows</b>		<b>9,329</b>		<b>9,465</b>
17 Secured lending (e.g., reverse repos)	-	-	-	-
18 Inflows from fully performing exposure	2,022	1,628	2,573	2,048
19 Other cash inflows	102	102	73	73
<b>20 Total cash inflows</b>	<b>2,123</b>	<b>1,730</b>	<b>2,646</b>	<b>2,121</b>
<b>Adjusted values</b>				
<b>21 Total HQLA</b>		<b>8,789</b>		<b>8,654</b>
<b>22 Total net cash outflows</b>		<b>7,599</b>		<b>7,344</b>
<b>23 Liquidity Coverage Ratio</b>		<b>116%</b>		<b>118%</b>

The average LCR for all BCV Group currencies was 118% in Q1 2018 and 116% in Q2 2018.

The Bank's SIC account makes up 64% 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 89% 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 95% of potential cash inflows. The remaining cash inflows primarily come from derivatives maturing within 30 days.

The LCR in Swiss francs is higher than the LCR for all currencies combined, as almost all HQLA are denominated in Swiss francs (cash deposited at the SNB). Conversely, the LCR in euros and US dollars is lower than the LCR for all currencies combined.

## 6. OPERATIONAL RISK

### *Strategy and processes*

Exposure to operational risks results from the Bank carrying out its activities and are not actively sought after.

The aim of operational-risk management is to mitigate operational-risk factors by identifying areas of improvement and strengthening the Bank's operational and management control system. In particular, the Bank aims to reduce its exposure to:

- The erroneous or malicious behavior of employees, suppliers, bank counterparties, customers, or other parties external to the Bank;
- Inadequate IT systems (applications, interfaces, and hardware) or communication systems (telephone, fax, email, social media, etc.);
- Inadequate infrastructure;
- Inadequate organization in terms of the conceptual framework (methods, processes, corporate structure, etc.) or the organizational framework (rules, policies, directives, and manuals);
- External factors, such as the risks of natural disasters, pandemic, and social unrest.

### *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 (general self-assessments or specific analyses) 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 internal control system.

### *Operational risk reviews and analysis of operational incidents*

Periodic reviews are carried out in order to anticipate the main operational risks. These reviews are supplemented by ad-hoc analyses if new threats arise, if FINMA submits a specific request or if a major risk event occurs in another bank. The aim of these reviews is to reveal possible improvements to operational and managerial controls.

In addition to anticipating risks, the Bank exhaustively and systematically gathers information on and analyzes the main operational incidents arising from the Bank's activities. These incidents are recorded in a dedicated operational-risk-management system and analyzed on a monthly basis in order to improve internal controls. Whenever possible, the Bank manages major operational incidents according to pre-defined action plans.

The Risk Management Department forms part of the level 2 oversight of the internal control system. As such, the Department conducts regular reviews of how operational risks are detected, the measures in place for mitigating operational risks, and the related controls. These reviews are conducted as part of the annual review of main risks and of the internal control system.

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.

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*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 and 2008/21 and Swiss auditing standard No. 890.

The ICS is an integrated bank-wide system covering all functions and all hierarchical levels. In addition to the Bank's front-line activities, the system also applies to business-support, steering, and monitoring functions as well as to external service providers, particularly those falling under the scope of FINMA Circular 2018/3 on outsourcing.

BCV works continually to foster a culture of oversight among its staff so that each employee understands his or her role in the ICS. Oversight is thus part of employee performance assessment and skills development.

In accordance with the disclosure and reporting requirements set forth in FINMA Circular 2017/1, the Bank carries out a review at least annually of key risks and controls, with a particular focus on operational risks related to execution. The Bank keeps detailed records of these risks and controls for each department and identifies the main areas of potential improvement.

Each year, following the review, the Bank assesses its operational ICS and submits a report to the governing bodies. It also submits an annual assessment of its ICS for the financial accounts in order to meet the requirements of Swiss auditing standard No. 890.

## 7. APPENDIX

### 7.1 Reconciliation of financial statements and regulatory exposure

**Table 29. Reconciliation of regulatory capital to balance sheet**

In CHF millions, BCV Group, (CC2, FINMA #1)<sup>20</sup>

	a	a-1	b
	Balance sheet as in published financial statements		Reference
	30.06.2018	31.12.2017	
<b>Assets</b>			
Cash and cash equivalents	7,383	8,044	
Due from banks	1,414	1,013	
Reverse repurchase agreements	321	499	
Loans and advances to customers	5,404	4,826	
Mortgage loans	25,707	25,407	
Trading portfolio assets	232	186	
Positive mark-to-market values of derivative financial instruments	299	282	
Other financial assets at fair value	705	653	
Financial investments	3,740	3,753	
Accrued income and prepaid expenses	65	91	
Non-consolidated holdings	70	70	
Tangible fixed assets	434	519	
Intangible assets	11	12	
Of which: goodwill	11	12	a
Other assets	76	57	
Capital not paid in	-	-	
<b>Total assets</b>	<b>45,860</b>	<b>45,415</b>	
<b>Liabilities</b>			
Due to banks	1,554	1,398	
Repurchase agreements	1,364	1,350	
Customer deposits	31,031	30,512	
Trading portfolio liabilities	0	-	
Negative mark-to-market values of derivative financial instruments	239	205	
Other financial liabilities at fair value	851	812	
Medium-term notes	11	15	
Bonds and mortgage-backed bonds	7,205	7,392	
Accrued expenses and deferred income	147	172	
Other liabilities	81	87	
Provisions	17	15	
<b>Total liabilities</b>	<b>42,500</b>	<b>41,958</b>	
<b>Shareholders' equity</b>			

<sup>20</sup> Column 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."

Reserves for general banking risks	701	701	
Share capital	86	86	c
Statutory reserves, voluntary reserves, retained earnings, and net profit (loss) for the period	2,592	2,688	
Treasury shares	-19	-19	
Minority interests	0	0	
<b>Total shareholders' equity</b>	<b>3,361</b>	<b>3,457</b>	

**Table 30. Composition of regulatory capital**In CHF millions, BCV Group, full table (CC1, FINMA #2)<sup>21</sup>

	a	a-1	b
	Net figures (after transitional arrangements)		References
	30.06.2018	31.12.2017	
<b>Common Equity Tier 1 (CET1)</b>			
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	3,072	3,072	
3 Capital reserve and currency translation reserve (+/-)	34	33	
5 Minority interests	0	0	
<b>6 CET1 before regulatory adjustments</b>	<b>3,192</b>	<b>3,192</b>	
<b>CET1 regulatory adjustments</b>			
8 Goodwill (net of related tax liability)	11	12	a
12 IRB shortfall of provisions to expected losses	53	43	
16 Net long position in own CET1 instruments	19	19	
<b>28 Total regulatory adjustments to CET1</b>	<b>83</b>	<b>74</b>	
<b>29 Net CET1</b>	<b>3,109</b>	<b>3,118</b>	
<b>Additional Tier 1 capital (AT1)</b>			
<b>36 AT1 before regulatory adjustments</b>	-	-	
<b>Tier 1 adjustments based on transitional arrangements</b>	-	-	
<b>43 Total regulatory adjustments to AT1</b>	-	-	
<b>44 Net AT1</b>	-	-	
<b>45 Net Tier 1 capital</b>	<b>3,109</b>	<b>3,118</b>	
<b>Tier 2 capital (T2)</b>			
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	23	22	
<b>51 T2 before regulatory adjustments</b>	<b>23</b>	<b>22</b>	

<sup>21</sup>Net profit for the current fiscal year is not included in regulatory capital at 30 June (Line 2). Lines not applicable to BCV are not included. The "Impact of transitional arrangements" column is not included because BCV does not have any transitional arrangements.

**T2 regulatory adjustments**

52	Net long position in own T2 instruments	-	-
57	<b>Total regulatory adjustments to T2</b>	-	-
58	<b>Net T2</b>	<b>23</b>	<b>22</b>
59	<b>Total regulatory capital (Net T1 &amp; Net T2)</b>	<b>3,132</b>	<b>3,140</b>
60	<b>Total risk-weighted assets (RWA)</b>	<b>18,949</b>	<b>18,199</b>
<b>Capital ratios</b>			
61	CET1 ratio (item 29 as % of RWA)	16.4%	17.1%
62	T1 ratio (item 45 as % of RWA)	16.4%	17.1%
63	Total capital ratio (item 59 as % of RWA)	16.5%	17.3%
64	Specific CET1 buffer (capital conservation buffer + countercyclical buffer + capital buffer for systemically important banks) (as % of RWA)	2.6%	2.0%
65	Of which: in accordance with Basel minimum standards (as % of RWA)	1.9%	1.3%
66	Of which: countercyclical buffer in accordance with Basel minimum standards (as % of RWA)	0.7%	0.7%
67	Of which: capital buffer for systemically important banks in accordance with the Basel minimum standards (as % of RWA)	0.0%	0.0%
68	CET1 available to meet buffer requirements in accordance with Basel minimum standards, after deducting the CET1 covering minimum requirements (as % of RWA)	8.5%	9.3%
68a	CET1 total requirement target in accordance with Annex 8 of the CAO plus the countercyclical buffer (as % of RWA)	8.5%	8.5%
68b	CET1 available (as % of RWA)	16.4%	17.1%
68c	T1 total requirement in accordance with Annex 8 of the CAO plus the countercyclical buffer (as % of RWA)	10.3%	10.3%
68d	T1 available (as % of RWA)	16.4%	17.1%
68e	Total requirement for regulatory capital in accordance with Annex 8 of the CAO plus the countercyclical buffer (as % of RWA)	12.7%	12.7%
68f	Regulatory capital available (as % of RWA)	16.5%	17.2%
<b>Amounts below the thresholds for deduction (before risk weighting)</b>			
72	Non-significant investments in the common stock of other financial entities	28	22
73	Significant investments in the common stock of financial entities	231	231

**Table 31. Main features of regulatory capital instruments**In CHF millions, BCV Group, (CCA, FINMA #45)<sup>22</sup>

		<b>Quantitative or qualitative information</b>
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 CH 0015251710
3	Governing laws of the instrument	Cantonal Act Governing the Organization of Banque Cantonale Vaudoise; BCV's articles of association; Swiss Code of Obligations
<b>Regulatory treatment</b>		
5	Transitional Basel III rules	Common Equity Tier 1
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 86,062
9	Par value of instrument	CHF 10
10	Accounting classification	Shareholders' equity - Share capital
11	Original date of issuance	31 December 1995
12	Perpetual or dated	Perpetual
13	Original maturity date	No maturity date
14	Issuer call subject to prior supervisory approval	No
<b>Coupons and dividends</b>		
17	Fixed or variable coupon or dividend	Variable
20	Fully discretionary, partially discretionary, or mandatory	Fully discretionary
21	Existence of step-up or other incentive to redeem	No
22	Non-cumulative or cumulative	Non-cumulative
23	Convertible or non-convertible	Non-convertible
30	Writedown feature	No
36	Non-compliant transitioned features	No

<sup>22</sup>Lines not used are not included.



**Table 32. Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories**In CHF millions, at 31 December 2017, BCV Group, (LI1, FINMA #5)<sup>23</sup>

	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
<b>Assets</b>					
Cash and cash equivalents	8,044	8,044			
Due from banks	1,013	890	124		
Reverse repurchase agreements	499		499		
Loans and advances to customers	4,826	4,826			
Mortgage loans	25,407	25,407			
Trading portfolio assets	186			186	
Positive mark-to-market values of derivative financial instruments	282		282	282	
Other financial assets at fair value	653	0		653	
Financial investments	3,753	3,753	1'298		
Accrued income and prepaid expenses	91	91			
Non-consolidated holdings	70	70			
Tangible fixed assets	519	519			
Intangible assets	12				12
Other assets	57	57			
<b>Total assets</b>	<b>45,415</b>	<b>43,658</b>	<b>2,203</b>	<b>1,121</b>	<b>12</b>
<b>Liabilities</b>					
Due to banks	1,398		224		1,174
Repurchase agreements	1,350		1,350		
Customer deposits	30,512				30,512
Trading portfolio liabilities	-			-	
Negative mark-to-market values of derivative financial instruments	205		205	205	
Other financial liabilities at fair value	812			812	
Medium-term notes	15				15
Bonds and mortgage-backed bonds	7,392				7,392
Accrued expenses and deferred income	172				172
Other liabilities	87				87
Provisions	15	-			15
<b>Total liabilities</b>	<b>41,958</b>	<b>-</b>	<b>1,778</b>	<b>1,017</b>	<b>39,368</b>

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

**Table 33. Main sources of differences between regulatory exposure amounts and carrying values in financial statements**

In CHF millions, at 31 December 2017, BCV Group, (LI2, FINMA #6)

	a	b			e
		Items subject to:			
	Total	Credit risk framework	Counterparty credit risk framework	Market risk framework	
<b>1 Asset carrying value under regulatory scope of consolidation (as per Table LI1)</b>	<b>45,402</b>	<b>43,658</b>	<b>2,203</b>	<b>1,121</b>	
2 Liabilities carrying value under regulatory scope of consolidation (as per Table LI1)	2,590	-	1,778	1,017	
3 Total net amount under regulatory scope of consolidation	42,812	43,658	425	104	
4 Off-balance sheet amounts	6,887	2,767	-	-	
5 Differences in valuations for securities financing transactions (regulatory haircut)	123	-	123	-	
6 Differences in valuations for derivatives transactions (regulatory add-on)	54	-	54	-	
7 Differences due to consideration of provisions	102	102	-	-	
8 No valuation differences	-2	-2	-	-	
<b>10 Exposure amounts considered for regulatory purposes</b>	<b>47,229</b>	<b>46,524</b>	<b>602</b>	<b>104</b>	

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

## 7.2 Leverage ratio

**Table 34. Summary comparison of accounting assets vs. leverage ratio exposure measure**  
In CHF millions, BCV Group, (LR1, FINMA #46)

	<b>30.06.2018</b>	<b>31.12.2017</b>
1 Total consolidated assets as per published financial statements	45,860	45,415
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	-83	-74
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	31	70
5 Adjustment for securities financing transactions (SFTs)	1	3
6 Adjustment for off-balance-sheet items	2,486	2,473
7 Other adjustments	-	-
<b>8 Leverage ratio exposure measure</b>	<b>48,296</b>	<b>47,886</b>

The growth in total assets reflects increases in loans and advances to customers, mortgage lending, and amounts due from banks (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 2.486bn at 30 June 2018).

**Table 35. Leverage ratio common disclosures**  
In CHF millions, BCV Group, (LR2, FINMA #47)

	30.06.2018	31.12.2017
<b>On-balance sheet exposure</b>		
1 On-balance sheet exposure (excluding derivatives and SFTs, but including collateral)	43,882	43,292
2 Assets deducted in determining Tier 1 capital	-83	-74
<b>3 Total on-balance sheet exposures within the leverage ratio framework, excluding derivatives and SFTs</b>	<b>43,800</b>	<b>43,218</b>
<b>Derivative exposure</b>		
4 Replacement cost associated with all derivatives transactions, including those with central counterparties (net of eligible cash variation margin and/or with bilateral netting)	89	104
5 Add-on amounts for PFE associated with all derivatives transactions	397	373
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	-156	-125
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	0	-
<b>11 Total derivative exposure</b>	<b>330</b>	<b>352</b>
<b>Securities financing transaction (SFT) exposure</b>		
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	1,678	1,840
13 Netted amounts of cash payables and cash receivables relating to SFT counterparties	-	-
14 CCR exposure for SFT assets	1	3
15 Agent transaction exposure	-	-
<b>16 Total SFT exposure</b>	<b>1,679</b>	<b>1,844</b>
<b>Other off-balance sheet exposure</b>		
17 Off-balance-sheet exposure at gross national amounts before application of credit conversion factors	7,186	7,102
18 Adjustments for conversion to credit equivalent amounts	-4,700	-4,630
<b>19 Total off-balance sheet exposure</b>	<b>2,486</b>	<b>2,473</b>
<b>Capital and total exposure</b>		
<b>20 Tier 1 capital</b>	<b>3,109</b>	<b>3,118</b>
<b>21 Total exposure</b>	<b>48,296</b>	<b>47,886</b>
<b>Leverage ratio</b>		
<b>22 Leverage ratio</b>	<b>6.4%</b>	<b>6.5%</b>

The difference between the amount of total accounting assets on the balance sheet and the balance-sheet exposure used to calculate the leverage ratio (line 1 of Table 35) is due to the Bank's repo agreements (CHF 1.678bn at 30 June 2018) and derivatives (mark-to-market value of CHF 299m at 30 June 2018).

## 7.3 Disclosure map, analytical classifications, and abbreviations

### 7.3.1 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 36. Disclosure map**

Basel reference code	Description	FINMA table no.	BCV table no.	Frequency under FINMA	Comment
<b>Overview</b>					
KM1	Key metrics			2 Semiannual	
OVA	Bank risk management approach	3	Ch. 3	Annual	
OV1	Overview of RWA	4	4	Semiannual	
<b>Linkages between financial statements and regulatory exposure</b>					
LI1	Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories	5	32	Annual	
LI2	Main sources of differences between regulatory exposure amounts and carrying values in financial statements	6	33	Annual	
LIA	Explanations of differences between accounting and regulatory exposure amounts	7	Ch. 7	Annual	
CC1	Composition of regulatory capital	2	30	Semiannual	
CC2	Reconciliation of regulatory capital to balance sheet	1	29	Semiannual	
CCA	Main features of regulatory capital instruments	45	31	Semiannual	
<b>Leverage ratio</b>					
LR1	Summary comparison of accounting assets vs. leverage ratio	46	34	Semiannual	

	exposure measure				
LR2	Leverage ratio common disclosure table	47	35	Semiannual	
<b>Credit risk</b>					
CRA	General qualitative information about credit risk	8	Ch. 4	Annual	
CR1	Credit quality of assets	9	10	Semiannual	
CR2	Changes in stock of defaulted loans and debt securities	10	11	Semiannual	
CRB	Additional disclosure related to the credit quality of assets	11	Ch. 4	Annual	Updated half- yearly
CRC	Qualitative disclosure requirements related to credit risk mitigation techniques	12	Ch. 4	Annual	
CR3	Credit risk mitigation techniques - overview	13	12	Semiannual	
CRD	Qualitative disclosure on the Bank's use of external credit ratings under the standardized approach for credit risk	14	Ch. 4	Annual	
CR4	Standardized approach - credit risk exposure and credit risk mitigation (CRM) effects	15	17	Semiannual	
CR5	Standardized approach - exposure by asset class and risk weight	16	18	Semiannual	
CRE	Qualitative disclosures related to IRB models	17	Ch. 4	Annual	Updated half- yearly
CR6	IRB - credit risk exposure by portfolio and probability of default (PD) range	18	13	Semiannual	
CR7	IRB - effect on RWA of credit derivatives used as CRM techniques	19		Semiannual	No credit derivatives
CR8	RWA flow statements of credit risk exposure under IRB	20	14	Semiannual	
CR9	IRB - backtesting of PD per portfolio	21	15	Annual	

CR10	IRB - specialized lending and equities under the simple risk weight method	22	16 + 26	Semiannual	
CCRA	Qualitative disclosure related to counterparty credit risk	23	Ch. 4	Annual	
CCR1	Analysis of counterparty credit risk (CCR) exposure by approach	24	19	Semiannual	
CCR2	Credit Valuation Adjustment (CVA) capital charge	25	22	Semiannual	
CCR3	Standardized approach - CCR exposure by regulatory portfolio and risk weight	26	21	Semiannual	
CCR4	IRB - CCR exposure by portfolio and PD range	27	20	Semiannual	
CCR5	Composition of collateral for CCR exposure	28	23	Semiannual	
CCR7	RWA flow statements of CCR exposure under the Internal Model Method (IMM)	30		Semiannual	IMM approach not used at BCV
CCR8	Exposure to central counterparties (CCPs)	31	24	Semiannual	
<b>Market risk and liquidity</b>					
SECA	Qualitative disclosure requirements related to securitization exposure	32		Annual	
SEC1	Securitization exposure in the banking book	33		Semiannual	
SEC2	Securitization exposure in the trading book	34		Semiannual	
SEC3	Securitization exposure in the banking book and associated regulatory capital requirements - bank acting as originator or sponsor	35		Semiannual	No securitization
SEC4	Securitization exposure in the banking book and associated regulatory capital requirements	36		Semiannual	

	- bank acting as investor				
MRA	General qualitative disclosure requirements related to market risk	37	Ch. 5	Annual	
MR1	Market risk under Standardized Approach (SA)	39	25	Semiannual	
MRB	Qualitative disclosures for banks using the Internal Models Approach (IMA)	38		Annual	IMA approach not used at BCV
MR2	RWA flow statements of market risk exposure under the IMA	40		Semiannual	
MR3	IMA values for trading portfolios	41		Semiannual	BCV does not use an internal model
MR4	Comparison of VaR estimates with gains and losses	42		Semiannual	
IRR	IRRBB risk management objective and policies	44	27 + Ch. 5.3	Annual	Updated half-yearly
LIQ1	Liquidity Coverage Ratio	48	28 + Ch. 5	Semiannual	
<b>Operational risk</b>					
ORA	General qualitative information about operational risk management	43	Ch. 6		

### 7.3.2 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 37. Basel III Accord asset categories (IRB)**

No.	Asset category	Description
1	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
3	Banks and securities firms (F-IRB)	Bank counterparties
5	Non-central gov. public-sector entities; multilateral development banks (F-IRB)	Cantonal governments and municipal authorities
7	Corporates - specialized lending (F-IRB)	Real-estate financing for counterparties rated with the “real-estate professionals” rating model, together with trade-finance



		transactions
9	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
11	Mortgage-backed retail exposure	Mortgage-backed exposure to individuals and companies that meet the retail criteria
13	Other retail exposure	Other exposure to individuals and companies that meet the retail criteria

**Table 38. Risk segments**

Type of counterparty	Description
<b>Retail</b>	Individuals with less than CHF 250,000 in assets or income, or who have a mortgage loan of up to CHF 1.2 million
<b>Private banking</b>	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
<b>SMEs</b>	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
<b>Real-estate professionals</b>	Individuals or entities whose main professional activity involves real-estate development and/or investment
<b>Large corporates</b>	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
<b>Public-sector entities</b>	Swiss national, cantonal, and municipal governments
<b>Trade finance</b>	Non-bank counterparties involved in trade-finance activities
<b>Banks</b>	Bank counterparties, including central counterparties since 1 January 2013

**Table 39. Counterparty rating model (scope of F-IRB approach)**

BCV rating model	Description
<b>Individuals</b>	Consists of counterparties subject to the following rating models, which are applied to individuals and co-debtor couples without commercial financing: <ul style="list-style-type: none"> <li>- Private banking counterparties with at least CHF 300,000 in assets at BCV or who are financed solely through Lombard loans</li> <li>- BCV employees</li> <li>- Individuals not included in one of the above two categories</li> </ul>

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<b>SMEs</b>	Corporate counterparties that are outside the scopes of real-estate professionals, large corporates, and trade finance
<b>Real-estate professionals</b>	Individuals and entities that are mainly active in real-estate development and investment for their own account
<b>Trade finance</b>	Transactions carried out to finance international commodities trading
<b>Vaud municipalities</b>	Municipalities in Vaud Canton
<b>Co-debtors</b>	Joint and several codebtors who are not a couple, or a group of municipalities
<b>Transmission</b>	Counterparty whose rating was transferred from another counterparty under a system of rules
<b>Banks</b>	Bank counterparties

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### 7.3.3 List of abbreviations

<b>ALCO</b>	Asset and Liabilities Management Committee
<b>ALM</b>	Asset and Liability Management
<b>ALM-FM</b>	The Bank's ALM and Financial Management Department
<b>BCV</b>	Banque Cantonale Vaudoise
<b>BIS</b>	Bank for International Settlements
<b>BoD</b>	Board of Directors
<b>CAO</b>	Ordinance of 1 June 2012 concerning capital adequacy and risk diversification for banks and securities traders (known as the "Capital Adequacy Ordinance")
<b>CCF</b>	Credit conversion factor
<b>CCO</b>	Chief Credit Officer
<b>CCP</b>	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
<b>CCR</b>	Counterparty credit risk

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<b>CEO</b>	Chief Executive Officer
<b>CF</b>	Commodities finance
<b>CFO</b>	Chief Financial Officer
<b>CLS</b>	Continuous linked settlement
<b>CRM</b>	Credit risk mitigation
<b>CSA</b>	Credit Support Annex, an optional annex for ISDA netting agreements
<b>CVA</b>	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
<b>EAD</b>	Exposure at default
<b>EBCC</b>	Executive Board Credit Committee
<b>EBRMC</b>	Executive Board Risk Management Committee
<b>EL</b>	Expected loss
<b>F-IRB</b>	Foundation Internal Ratings-Based approach
<b>FINMA</b>	Swiss Financial Market Supervisory Authority
<b>GMRA</b>	Global Master Repurchase Agreement of the Public Securities Association/International Securities Market Association (PSA/ISMA)
<b>HQLA</b>	High-quality liquid assets
<b>ICS</b>	Internal control system
<b>ID</b>	BCV's "in default" provisioning category
<b>IMA</b>	Internal Models Approach
<b>IMM</b>	Internal Model Method
<b>IPRE</b>	Income-producing real estate
<b>IRB</b>	Internal ratings-based
<b>IRRBB</b>	Interest-rate risk on the banking book
<b>ISDA</b>	International Swaps and Derivatives Association
<b>LCR</b>	Liquidity coverage ratio

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<b>LGD</b>	Loss given default
<b>NSFR</b>	Net stable funding ratio
<b>OTC</b>	Over the counter
<b>PD</b>	Probability of default
<b>PFE</b>	Potential future exposure
<b>QCCP</b>	Qualified central counterparty
<b>RD</b>	BCV's "reputed to be in financial difficulty" provisioning category
<b>RMPS</b>	BCV's Risk Management Policy and Strategy
<b>RWA</b>	Risk-weighted assets
<b>SFT</b>	Securities financing transaction
<b>SIC</b>	Swiss Interbank Clearing
<b>SNB</b>	Swiss National Bank
<b>SA-BIS</b>	International Standardized Approach in accordance with the CAO
<b>VaR</b>	Value at risk

## 7.4 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 40. Main parent-company figures**

In CHF millions, at 30 June 2018

Indicator	Amount
1 Minimal capital based on risk-weighted requirements	1,480
2 Eligible capital	2,999
3 Of which: CET1	2,977
4 Of which: Tier 1 capital (T1)	2,977
5 Risk-weighted assets (RWA)	18,500
6 CET1 ratio (CET1 as % of RWA) <sup>1</sup>	16.1%
7 T1 ratio (T1 as % of RWA) <sup>1</sup>	16.1%
8 Total capital ratio (as % of RWA) <sup>1</sup>	16.2%
9 Countercyclical buffer (as % of RWA)	0.7%
10 Target CET1 ratio pursuant to Annex 8 of the CAO, after countercyclical buffer	8.5%
11 Target T1 ratio pursuant to Annex 8 of the CAO, after countercyclical buffer	10.3%
12 Target total capital ratio pursuant to Annex 8 of the CAO, after countercyclical buffer	12.7%
13 Basel III leverage ratio (T1 as % of total exposure)	6.3%
14 Total exposure	47,374
15 Q2 2018 LCR <sup>2</sup>	115.7%
16 LCR numerator: stock of HQLA	8,602
17 LCR denominator: net cash outflows	7,433
18 Q1 2018 LCR <sup>2</sup>	117.9%
19 LCR numerator: stock of HQLA	8,465
20 LCR denominator: net cash outflows	7,181
21 Q4 2017 LCR <sup>2</sup>	122.3%
22 LCR numerator: stock of HQLA	8,906
23 LCR denominator: net cash outflows	7,281
24 Q3 2017 LCR <sup>2</sup>	109.7%
25 LCR numerator: stock of HQLA	7,968
26 LCR denominator: net cash outflows	7,261

<sup>1</sup>Calculated without subtracting the countercyclical buffer

<sup>2</sup>Calculated by dividing the average HQLA over the quarter by the average net cash outflow over the quarter