CREDIT SUISSE GROUP AG
Form 6-K
March 24, 2016
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16
UNDER THE SECURITIES EXCHANGE ACT OF 1934
March 24, 2016
Commission File Number 001-15244
CREDIT SUISSE GROUP AG
(Translation of registrant's name into English)
Paradeplatz 8, CH 8001 Zurich, Switzerland
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.
Form 20-F Form 40-F
Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):
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Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):
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Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.
Yes No
If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82-.

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CREDIT SUISSE GROUP AG
(Registrant)

Date: March 24, 2016
By:
/s/ Joachim Oechslin
Joachim Oechslin
Chief Risk Officer
By:
/s/ David R. Mathers
David R. Mathers
Chief Financial Officer

In various tables, use of "–" indicates not meaningful or not applicable.

Basel III
Pillar 3 – disclosures 2015

Introduction

General

These Pillar 3 disclosures as of December 31, 2015 are based on the BIS Basel III framework as implemented by the revised Swiss Capital Adequacy Ordinance and required by Swiss Financial Market Supervisory Authority FINMA (FINMA) regulation. This document should be read in conjunction with the Credit Suisse Annual Report 2015, which includes important information on regulatory capital and risk management (specific references have been made herein to this document).

In addition to Pillar 3 disclosures we disclose the way we manage our risks for internal management purposes in the Annual Report.

> Refer to “Risk management” (pages 136 to 178) in III – Treasury, Risk, Balance sheet and Off-balance sheet in the Credit Suisse Annual Report 2015 for further information regarding the way we manage risk including economic capital as a Group-wide risk management tool.

Certain reclassifications may be made to prior periods to conform to the current period’s presentation.

The Pillar 3 report is produced and published semi-annually, in accordance with FINMA requirements.

This report was verified and approved internally in line with our Pillar 3 disclosure policy. The Pillar 3 report has not been audited by the Group’s external auditors. However, it also includes information that is contained within the audited consolidated financial statements as reported in the Credit Suisse Annual Report 2015.

Regulatory development

On November 20, 2015, FINMA issued the revised circular on disclosure for banks. As the previous disclosure standards did not allow for a proper comparison of risk situations between banks, FINMA Circular 2016/01 “Disclosure – banks” has been updated to reflect enhanced international standards (see below). The revised disclosure standards have improved the information and decision-making tools for market participants and increased the comparability of institutions. The revised circular comes into force on January 1, 2016, implementing the revised standards with which all Swiss banks must comply as of December 31, 2016. Their application will be determined by the size of the bank.

On January 28, 2015, the Basel Committee on Banking Supervision (BCBS) issued the final standard for the revised Pillar 3 disclosure requirements. The revised disclosure requirements will enable market participants to compare bank’s disclosure of risk-weighted assets. The revisions focus on improving the transparency of the internal model-based approaches that banks use to calculate minimum regulatory capital requirements. The revised requirements will be effective for the year-end 2016 financial reporting.

Location of disclosure

This report provides the Basel III Pillar 3 disclosures to the extent that these required Pillar 3 disclosures are not included in the Credit Suisse Annual Report 2015.

The following table provides an overview of the location of the required Pillar 3 disclosures.

Location of disclosure

Pillar 3 requirements	Pillar 3 Report 2015	Annual Report 2015
Scope of application		
Top corporate entity	"Scope of application" (p. 4)	
Differences in basis of consolidation	Description of differences: "Principles of consolidation" (p. 4)	List of significant subsidiaries and associated entities: "Note 40 - Significant subsidiaries and equity method investments (p. 383 - 385) Changes in scope of consolidation: "Note 3 - Business developments" (p. 270)
Restrictions on transfer of funds or	Overview: "Restrictions on transfer of funds or	Detailed information: "Liquidity and funding

regulatory capital	regulatory capital" (p. 4)	management" (p. 106 - 113)
Capital deficiencies	"Capital deficiencies" (p. 4)	
Capital structure		
	"Capital structure under Basel III" (p. 5)	
	"Swiss requirements" (p. 5 - 6)	
Capital adequacy		
Group/Bank	"Description of regulatory approaches" (p. 6 - 14)	
	"BIS capital metrics" (p. 15 - 16)	
	"Swiss capital metrics" (p. 17 - 18)	
Significant subsidiaries	Refer to "Regulatory disclosures" under https://www.credit-suisse.com/regulatorydisclosures	

Location of disclosure (continued)

Pillar 3 requirements	Pillar 3 Report 2015	Annual Report 2015
Risk management objectives and policies		
General description		"Risk management oversight" (p. 137 - 140) "Risk appetite framework" (p. 140 - 143) "Risk coverage and management" (p. 144 - 148)
Credit risk		
Credit risk management overview		"Credit risk" (p. 151 - 153)
Credit risk by asset classes		
Gross credit exposure, risk-weighted assets and capital requirement	"General" (p. 20 - 22)	
Portfolios subject to PD/LGD approach	"Portfolios subject to PD/LGD approach" (p. 22 - 29)	
Portfolios subject to standardized and supervisory risk weights approaches	"Portfolios subject to standardized and supervisory risk weights approaches" (p. 29 - 30)	
Credit risk mitigation used for A-IRB and standardized approaches	"Credit risk mitigation used for A-IRB and standardized approaches" (p. 30 - 31)	Netting: "Derivative instruments" (p. 174 - 176) "Note 1 - Summary of significant accounting policies" (p. 261 - 262) "Note 27 - Offsetting of financial assets and financial liabilities" (p. 299 - 302)
Counterparty credit risk	"Counterparty credit risk" (p. 31 - 34)	Effect of a credit downgrade: "Credit ratings" (p. 113) Impaired loans by industry distribution/industry distribution of charges and write-offs: "Note 19 - Loans, allowance for loan losses and credit quality" (p. 288 - 291)
Securitization risk in the banking book	"Securitization risk in the banking book" (p. 35 - 39)	
Equity type securities in the banking book	"Equity type securities in the banking book" (p. 39 - 40)	
Market risk		

Market risk management overview	Quantitative disclosures: "General" (p. 41)	Qualitative disclosures: "Market risk" (p. 148 - 151)
Securitization risk in the trading book	"Securitization risk in the trading book" (p. 42 - 47)	
Interest rate risk in the banking book		
	Qualitative disclosures: "Interest rate risk in the banking book" (p. 48 - 49)	Quantitative disclosures: "Banking book" (p. 164 - 165)
Operational risk		
	Overview: "Operational risk" (p. 14)	Detailed information: "Operational risk" (p. 154 - 156)
Composition of capital		
Balance sheet under the regulatory scope of consolidation	"Balance sheet" (p. 50 - 51)	
Composition of capital	"Composition of capital" (p. 52 - 54)	
Capital instruments		
Main features template and full terms and conditions	Refer to "Regulatory disclosures" under https://www.credit-suisse.com/regulatorydisclosures	
Remuneration		
		"Compensation" (p. 217 - 248)
G-SIBs indicator		
	Refer to "Regulatory disclosures" under https://www.credit-suisse.com/regulatorydisclosures	

Scope of application

The highest consolidated entity in the Group to which the Basel III framework applies is Credit Suisse Group.

> Refer to “Regulation and supervision” (pages 25 to 39) in I – Information on the company and to “Capital management” (pages 114 to 135) in III – Treasury, Risk, Balance sheet and Off-balance sheet in the Credit Suisse Annual Report 2015 for further information on regulation.

Principles of consolidation

For financial reporting purposes, our consolidation principles comply with accounting principles generally accepted in the US (US GAAP). For capital adequacy reporting purposes, however, entities that are not active in banking and finance are not subject to consolidation (i.e. insurance, commercial and certain real estate companies). Also, FINMA does not require to consolidate private equity and other fund type vehicles for capital adequacy reporting. Further differences in consolidation principles between US GAAP and capital adequacy reporting relate to special purpose entities (SPEs) that are consolidated under a control-based approach for US GAAP but are assessed under a risk-based approach for capital adequacy reporting. In addition, FINMA requires us to consolidate companies which form an economic unit with Credit Suisse or if Credit Suisse is obliged to provide compulsory financial support to a company. The investments into such entities, which are not material to the Group, are treated in accordance with the regulatory rules and are either subject to a risk-weighted capital requirement or a deduction from regulatory capital.

All significant equity method investments represent investments in the capital of banking, financial and insurance (BFI) entities and are subject to a threshold calculation in accordance with the Basel framework and the Swiss Capital Adequacy Ordinance.

Restrictions on transfer of funds or regulatory capital

We do not believe that legal or regulatory restrictions constitute a material limitation on the ability of our subsidiaries to pay dividends or our ability to transfer funds or regulatory capital within the Group.

Capital deficiencies

The Group’s subsidiaries which are not included in the regulatory consolidation did not report any capital deficiencies in 2015.

Risk management oversight

Fundamental to our business is the prudent taking of risk in line with our strategic priorities. The primary objectives of risk management are to protect our financial strength and reputation, while ensuring that capital is well deployed to support business activities and grow shareholder value. Our risk management framework is based on transparency, management accountability and independent oversight. Risk measurement models are reviewed by the Model Risk Management team, an independent validation function, and regularly presented to and approved by the relevant oversight committee.

> Refer to “Risk management oversight” (pages 137 to 140), “Risk appetite framework” (pages 140 to 143) and “Risk coverage and management” (pages 144 to 148) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Risk management in the Credit Suisse Annual Report 2015 for information on risk management oversight including risk culture, risk governance, risk organization, risk types and risk appetite and risk limits.

The Group is exposed to several key banking risks such as:

– Credit risk (refer to section “Credit risk” on pages 19 to 40);

– Market risk (refer to section “Market risk” on pages 41 to 47);

– Interest rate risk in the banking book (refer to section “Interest rate risk in the banking book” on pages 48 to 49); and

– Operational risk (refer to section “Capital” on page 14).

Capital

Regulatory capital framework

Effective January 1, 2013, the Basel III framework was implemented in Switzerland along with the Swiss "Too Big to Fail" legislation and regulations thereunder (Swiss Requirements). Together with the related implementing ordinances, the legislation includes capital, liquidity, leverage and large exposure requirements and rules for emergency plans designated to maintain systemically relevant functions in the event of threatened insolvency. Our related disclosures are in accordance with our current interpretation of such requirements, including relevant assumptions. Changes in the interpretation of these requirements in Switzerland or in any of our assumptions or estimates could result in different numbers from those shown in this report. Also, our capital metrics fluctuate during any reporting period in the ordinary course of business.

> Refer to "Capital management" (pages 114 to 135) in III – Treasury, Risk, Balance sheet and Off-balance sheet in the Credit Suisse Annual Report 2015 for further information.

Capital structure under Basel III

The BCBS, the standard setting committee within the Bank for International Settlements (BIS), issued the Basel III framework, with higher minimum capital requirements and conservation and countercyclical buffers, revised risk-based capital measures, a leverage ratio and liquidity standards. The framework was designed to strengthen the resilience of the banking sector and requires banks to hold more capital, mainly in the form of common equity. The new capital standards are being phased in from 2013 through 2018 and will be fully effective January 1, 2019 for those countries that have adopted Basel III.

> Refer to the table "Basel III phase-in requirements for Credit Suisse" (page 116) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Capital management – Regulatory capital framework in the Credit Suisse Annual Report 2015 for capital requirements and applicable effective dates during the phase-in period.

Under Basel III, the minimum common equity tier 1 (CET1) requirement is 4.5% of risk-weighted assets. In addition, a 2.5% CET1 capital conservation buffer is required to absorb losses in periods of financial and economic stress. Banks that do not maintain this buffer will be limited in their ability to pay dividends or make discretionary bonus payments or other earnings distributions.

A progressive buffer between 1% and 2.5% (with a possible additional 1% surcharge) of CET1, depending on a bank's systemic importance, is an additional capital requirement for global systemically important banks (G-SIB). The Financial Stability Board has identified us as a G-SIB and requires us to maintain a 1.5% progressive buffer.

CET1 capital is subject to certain regulatory deductions and other adjustments to common equity, including the deduction of deferred tax assets for tax-loss carry-forwards, goodwill and other intangible assets and investments in banking and finance entities.

In addition to the CET1 requirements, there is also a requirement for 1.5% additional tier 1 capital and 2% tier 2 capital. These requirements may also be met with CET1 capital. To qualify as additional tier 1 under Basel III, capital instruments must provide for principal loss absorption through a conversion into common equity or a write-down of principal feature. The trigger for such conversion or write-down must include a CET1 ratio of at least 5.125%.

Basel III further provides for a countercyclical buffer that could require banks to hold up to 2.5% of CET1 or other capital that would be available to fully absorb losses. This requirement is expected to be imposed by national regulators where credit growth is deemed to be excessive and leading to the build-up of system-wide risk.

Capital instruments that do not meet the strict criteria for inclusion in CET1 are excluded. Capital instruments that would no longer qualify as tier 1 or tier 2 capital will be phased out. In addition, instruments with an incentive to redeem prior to their stated maturity, if any, are phased out at their effective maturity date, generally the date of the first step-up coupon.

Swiss Requirements

The legislation implementing the Basel III framework in Switzerland in respect of capital requirements for systemically relevant banks goes beyond Basel III's minimum standards, including requiring us, as a systemically relevant bank, to have the following minimum, buffer and progressive components.

> Refer to the chart "Swiss capital and leverage ratio phase-in requirements for Credit Suisse" (page 117) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Capital management – Regulatory capital framework in the Credit Suisse Annual Report 2015 for Swiss capital requirements and applicable effective dates during the phase-in period.

The minimum requirement of CET1 capital is 4.5% of risk-weighted assets.

The buffer requirement is 8.5% and can be met with additional CET1 capital of 5.5% of risk-weighted assets and a maximum of 3% of high-trigger capital instruments. High-trigger capital instruments must convert into common equity or be written off if the CET1 ratio falls below 7%.

The progressive component requirement is dependent on our size (leverage exposure) and the market share of our domestic systemically relevant business. Effective in 2015, FINMA set our progressive component requirement at 4.05% for 2019. In June 2015, FINMA notified us that, effective in 2016, the progressive component requirement for 2019 will be increased from 4.05% to 5.07% due to the latest assessment of our relevant market shares. The progressive component requirement may be met with CET1 capital or low-trigger capital instruments. In order to qualify, low-trigger capital instruments must convert into common equity or be written off if the CET1 ratio falls below a specified percentage, the lowest of which may be 5%. In addition, until the end of 2017,

the progressive component requirement may also be met with high-trigger capital instruments. Both high and low-trigger capital instruments must comply with the Basel III minimum requirements for tier 2 capital (including subordination, point-of-non-viability loss absorption and minimum maturity).

Similar to Basel III, the Swiss Requirements include a supplemental countercyclical buffer of up to 2.5% of risk-weighted assets that can be activated during periods of excess credit growth. Effective September 2013, the buffer was activated and initially required banks to hold CET1 capital in the amount of 1% of their risk-weighted assets pertaining to mortgages that finance residential property in Switzerland. In January 2014, upon the request of the Swiss National Bank, the Swiss Federal Council increased the countercyclical buffer from 1% to 2%, effective June 30, 2014.

In 2013, FINMA introduced increased capital charges for mortgages that finance owner occupied residential property in Switzerland (mortgage multiplier) to be phased in through January 1, 2019. The mortgage multiplier applies for purposes of both BIS and FINMA requirements.

In December 2013, FINMA issued a decree (FINMA Decree) specifying capital adequacy requirements for the Bank, on a stand-alone basis (Bank parent company), and the Bank and the Group, each on a consolidated basis, as systemically relevant institutions.

> Refer to “Capital management” (pages 114 to 135) in III – Treasury, Risk, Balance sheet and Off-balance sheet in the Credit Suisse Annual Report 2015 for information on our capital structure, eligible capital and shareholders’ equity, capital adequacy and leverage ratio requirements under Basel III and Swiss Requirements.

Description of regulatory approaches

The Basel framework describes a range of options for determining the capital requirements in order to provide banks and supervisors the ability to select approaches that are most appropriate for their operations and their financial market infrastructure. In general, Credit Suisse has adopted the most advanced approaches, which align with the way risk is internally managed and provide the greatest risk sensitivity. The Basel framework focuses on credit risk, market risk, operational risk and interest rate risk in the banking book. The regulatory approaches for each of these risk exposures and the related disclosures under Pillar 3 are set forth below.

Credit risk

Credit risk by asset class

The Basel framework permits banks a choice between two broad methodologies in calculating their capital requirements for credit risk by asset class, the internal ratings-based (IRB) approach or the standardized approach. Off-balance-sheet items are converted into credit exposure equivalents through the use of credit conversion factors (CCF).

The majority of our credit risk by asset class is with institutional counterparties (sovereigns, other institutions, banks and corporates) and arises from lending and trading activity in the investment banking businesses and the private, corporate and institutional banking businesses. The remaining credit risk by asset class is with retail counterparties and mostly arises in the private, corporate and institutional banking businesses from residential mortgage loans and other secured lending, including loans collateralized by securities.

> Refer to “Credit risk by asset class” in section “Credit risk” on pages 19 to 34 for further information.

Advanced-internal ratings-based approach

Under the IRB approach, risk weights are determined by using internal risk parameters and applying an asset value correlation multiplier uplift where exposures are to financial institutions meeting regulatory defined criteria. We have received approval from FINMA to use, and have fully implemented, the advanced-internal ratings-based (A-IRB) approach whereby we provide our own estimates for probability of default (PD), loss given default (LGD) and exposure at default (EAD).

PD parameters capture the risk of a counterparty defaulting over a one-year time horizon. PD estimates are mainly derived from models tailored to the specific business of the respective obligor. The models are calibrated to the long run average of annual internal or external default rates where applicable. For portfolios with a small number of empirical defaults, low default portfolio techniques are used.

LGD parameters consider seniority, collateral, counterparty industry and in certain cases fair value markdowns. LGD estimates are based on an empirical analysis of historical loss rates and are calibrated to reflect time and cost of recovery as well as economic downturn conditions. For much of the private, corporate and institutional banking businesses loan portfolio, the LGD is primarily dependent upon the type and amount of collateral pledged. The credit

approval and collateral monitoring process are based on loan-to-value limits. For mortgages (residential or commercial), recovery rates are differentiated by type of property.

EAD is either derived from balance sheet values or by using models. EAD for a non-defaulted facility is an estimate of the expected exposure upon default of the obligor. Estimates are derived based on a CCF approach using default-weighted averages of historical realized conversion factors on defaulted loans by facility type. Estimates are calibrated to capture negative operating environment effects.

We have received approval from FINMA to use the internal model method (IMM) for measuring counterparty risk for the majority of our derivative and secured financing exposures.

Risk weights are calculated using either the PD/LGD approach or the supervisory risk weights (SRW) approach for certain types of specialized lending.

Standardized approach

Under the standardized approach, risk weights are determined either according to credit ratings provided by recognized external credit assessment institutions or, for unrated exposures, by using the applicable regulatory risk weights. Less than 10% of our credit risk by asset class is determined using this approach.

Comparison of the standardized and internal model approaches for calculating risk-weighted assets for credit risk

Background

We have regulatory approval to use a number of internal models for calculating our Pillar 1 capital charge for credit risk (default risk). These include the A-IRB approach for risk weights, IMM for derivatives credit exposure, and repo Value-at-Risk (VaR) for Securities Financing Transactions (SFT). These modelled based approaches are used for the vast majority of credit risk exposures, with the standardized approaches used for only a relatively small proportion of credit exposures.

Regulators and investors are increasingly interested in the differences between capital requirements under modelled and standardized approaches. This is due, in part, to ongoing and future regulatory changes by the BCBS, such as the new standardized approach for counterparty credit risk (SA-CCR), proposed changes to the standardized approach for credit risk and capital floors. As such, the FINMA now requires us to disclose further information on differences between credit risk risk-weighted assets computed under internal modelled approaches, and current standardized approaches. FINMA also requires us to disclose the differences between the exposure at default based on internal modelled approaches and the exposure at default used in the Leverage ratio.

Key methodological differences between internal modelled approaches and standardized approaches

The differences between credit risk risk-weighted assets calculated under the internal modelled approaches and the standardized approaches are driven by the risk weights applied to counterparties and the calculations used for measuring EAD.

Risk weights: Under the A-IRB approach, the maturity of a transaction, and internal estimates of the PD and downturn LGD are used as inputs to the Basel risk-weight formula for calculating risk-weighted assets. In the standardized approach, risk weights are less granular and are driven by ratings provided by external credit assessment institutions (ECAI).

EAD calculations: Under the IMM and repo VaR methods, counterparty exposure is computed using monte-carlo simulation models or VaR models. These models allow for the recognition of netting impacts at exposure and collateral levels for each counterparty portfolio. The standardized approach is based on market values at the balance sheet date plus conservative add-ons to account for potential market movements. This approach gives very limited recognition to netting benefits and portfolio effects.

The following table provides a summary of the key conceptual differences between the internal models approach and the current standardized approach.

Key differences between the standardized approach and the A-IRB approach

	Standardized approach	A-IRB approach	Key impact
EAD for derivatives	Current Exposure Method is simplistic (market value and add-on): BCBS to replace it with SA-CCR in 2017.	Internal Measurement Method (IMM) allows Monte-Carlo simulation to estimate exposure.	For large diversified derivatives portfolios, standardized EAD is higher than model EAD.
	No differentiation between margined and unmargined transactions.	Ability to net and offset risk factors within the portfolio (i.e. diversification).	Impact applies across all asset classes.
	Differentiates add-ons by five exposure types and three maturity buckets only.	Application of multiplier on IMM exposure estimate.	
	Limited ability to net.	Variability in holding period applied to collateralized transactions, reflecting liquidity risks.	
Risk weighting	Reliance on ECAIs: where no rating is available a 100% risk weight is applied (i.e. for most small and medium size enterprises and funds).	Reliance on internal ratings where each counterparty/transaction receives a rating.	Model approach produces lower risk-weighted assets for high quality short term transactions.
	Crude risk weight differentiation with 4 key weights: 20%, 50%, 100%, 150% (and 0% for AAA sovereigns; 35%, 75% or 100% for mortgages; 75% or 100% for retail).	Granular risk sensitive risk weights differentiation via individual PDs and LGDs.	Standardized approach produces lower risk-weighted assets for non-investment grade and long-term transactions.
	No differentiation for transaction features.	LGD captures transaction quality features incl. Collateralization. Application of a 1.06 scaling factor.	Impact relevant across all asset classes.

Risk mitigation	Limited recognition of risk mitigation.	Risk mitigation recognized via risk sensitive LGD or EAD.	Standardized approach risk-weighted assets higher than model approach risk-weighted assets for most collaterals.
	Restricted list of eligible collateral.	Wider variety of collateral types eligible.	Impact particularly relevant for lombard lending and securities financing transactions.
	Conservative and crude regulatory haircuts.	Repo VaR allows use of VaR models to estimate exposure and collateral for securities financing transactions. Approach permits full diversification and netting across all collateral types.	
Maturity in risk weight	No differentiation for maturity of transactions, except for interbank exposures in a coarse manner.	No internal modelling of maturity.	Model approach produces lower risk-weighted assets for high quality short-term transactions.
		Regulatory risk-weighted assets function considers maturity: the longer the maturity the higher the risk weight (see chart "Risk weight by maturity").	

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The following chart shows standardized risk weights, and model based (A-IRB) risk weights for loans of varying maturity. The graphs are plotted for a AA-rated corporate senior unsecured loan with a LGD of 45% (consistent with Foundation-IRB), and a AA-rated corporate senior secured loan with a LGD of 36%. The graphs show that standardized risk weights are not sensitive to maturity, whereas A-IRB risk weights are sensitive to maturity. In particular, under A-IRB, lower maturity loans receive lower risk weights reflecting an increased likelihood of repayment for loans with a shorter maturity.

Key methodological differences between internally modelled EAD and EAD used in leverage ratio

The exposure measure used in the leverage ratio also differs from the exposure measure used in the internal modelled approach. The main methodological difference is that leverage ratio exposure estimates do not take into account physical or financial collateral, guarantees or other credit risk mitigation techniques to reduce the credit risk. Leverage ratio exposures also do not fully reflect netting and portfolio diversification. As a result, leverage ratio exposures are typically larger than model based exposures.

The following table shows the internal model-based EAD, along with average risk weight and risk-weighted assets, compared to an estimate of the exposure measure used in the leverage ratio calculation. Estimates are provided at Basel asset class level. As expected, leverage ratio exposure measures exceed internal model-based EAD, with the largest differences for banks and corporates, where the impacts of netting, diversification, and credit risk mitigation are largest.

Leverage ratio estimate

Basel asset class	A-IRB approach EAD (CHF billion)	A-IRB approach risk weight (%)	A-IRB approach risk-weighted assets (CHF billion)	Leverage ratio: total exposures (CHF billion)[1]
Corporates	195	41	84	379
Banks	36	25	9	94
Sovereigns	88	4	4	102
Retail	182	13	26	190

1 The leverage ratio estimate excludes trading book inventory, as credit risk capital for this business is capitalised under the market risk capital requirement. In addition, the estimate does not include Multilateral Development Banks (MDB), public sector entities and non-credit exposures. Asset class leverage ratio based exposures and standard approach calculations are approximate and provided on a best efforts basis.

It should be noted that credit risk capital requirements based of the internal model based approach are not directly comparable to capital requirements under the leverage ratio. The reason for this is that the 3% leverage ratio capital requirement can be met with total tier 1 capital, including capital for market risk and operational risk.

Comparison of credit risk risk-weighted assets under the internal models approach with risk-weighted assets computed under the standardized approach for credit risk

Credit risk risk-weighted assets computed under the standardized approach are higher than those based on the internal models for which we have received regulatory approval. Higher risk-weights under the standardized approach rules are a material driver of the higher risk-weighted assets for all Basel asset classes. The standardized exposure calculations also lead to some higher risk-weighted assets, with the corporate and bank asset classes being most significantly affected.

Corporate asset class

The table “Leverage ratio estimate” shows that the EAD for corporates computed under the internal model approach is CHF 195 billion. The EAD for corporates under the standardized approach is significantly higher. This difference is driven mainly by the standardized exposure calculations for OTC derivatives and the exposure calculations for secured financing transactions. For these products, exposures calculated under the standardized approach are higher than the model based exposures because the standardized approach does not fully recognize the benefits of netting, portfolio diversification and collateral. The exposure calculated under the leverage ratio is higher than the EAD computed using internal models. This is because credit risk mitigation, netting and portfolio diversification are not reflected in the leverage ratio exposure calculation.

Another significant driver of the increase in credit risk risk-weighted assets under the standardized approach are higher risk weights. The exposure weighted-average risk weight under the internal model approach is 41%. This is significantly lower than the risk weights assigned to corporates under the standardized approach.

The following graph shows the risk weights assigned to counterparties under the A-IRB approach and the standardized approach. For the IRB risk weight curve, an LGD value of 45% and a maturity adjustment of 2.5 years are chosen, as these are the Basel Foundation IRB parameters. The Group’s exposure weighted-average maturity of its corporate portfolio is lower than the foundation IRB value of 2.5 years, and lower maturities would result in a lower model-based risk weight curve than shown in the following graph. In addition, the PD for each rating shown in the graph are consistent with the Group’s PD masterscale. For counterparties in the AAA to BB+ range (based on external ratings), higher risk weights (20%, 50% and 100%) are assigned under the standardized approach than under the A-IRB approach. For the corporate asset class, over three-quarters of the Group’s exposures are in this range (based on internal ratings), and this is a key driver for the higher risk-weighted assets under the standardized approach. The different treatments of loan maturity in the model based approach and standardized approach are not a material cause of risk-weighted assets differences.

An additional driver of higher risk weights within the corporate asset class are counterparties without an external rating. Under the standardized approach, counterparties without an external rating receive a fixed risk weight of 100%. This applies to a large proportion of the Group’s exposures, among them specialized lending and managed funds. This fixed standardized risk weight is typically higher than the model based risk weight with for example, the average model based risk weight of specialized lending being approximately 30%.

> Refer to “Credit risk by asset class” in section “Credit risk” on pages 19 to 34 for further information on EAD and risk weights for each credit rating for the corporate asset class.

Bank asset class

The table “Leverage ratio estimate” shows that the EAD for banks under the internal model approach is CHF 36 billion. The EAD for banks calculated under the standardized approach is significantly higher. This is driven predominantly by the exposure calculations for both OTC derivatives and secured financing transactions and, to a lesser extent, the exposure calculations for listed and centrally cleared derivatives. For these products, exposures calculated under the standardized approach are much higher than the model based exposures because the standardized approach does not fully recognize the benefits of netting, portfolio diversification and collateral. The exposures calculated under the leverage ratio are significantly higher than the EAD computed using internal models. This is because credit risk mitigation, netting and portfolio diversification are not reflected in the leverage ratio exposure calculation.

In addition, there is a significant increase in credit risk risk-weighted assets under the standardized approach due to higher credit risk-weights. The exposure weighted-average risk-weight under the internal model approach is 25%. This is significantly lower than the risk weights assigned to banks under the standardized approach where a significant amount of the Group’s exposures would attract a risk weight of 50%.

The following graph shows the risk weights assigned to counterparties under the A-IRB approach and the standardized approach. For the IRB risk weight curve, an LGD value of 45% and a maturity adjustment of 2.5 years are chosen, as these are the Basel Foundation IRB parameters. The Group’s exposure weighted-average maturity of its bank portfolio is lower than the foundation IRB value of 2.5 years, and lower maturities would result in a lower model based risk weight curve than shown in the following graph. In addition, the PD for each rating shown in the graph are consistent with the Group’s PD masterscale. The graph shows that counterparties in the AAA to BBB+ range (based on external ratings) attract higher risk weights (20% and 50%) under the standardized approach than under the A-IRB approach. Approximately three-quarters of the Group’s exposures

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fall in this range (based on internal ratings) and this leads to higher risk-weighted assets under the standardized approach for these counterparties. The different treatments of loan maturity in the model based approach and standardized approach are not a material cause of risk-weighted assets differences.

> Refer to “Credit risk by asset class” in section “Credit risk” on pages 19 to 34 for further information on EAD and risk weights for each credit rating for the bank asset class.

Sovereign asset class

The table “Leverage ratio estimate” shows that the EAD for sovereigns under the internal model approach is CHF 88 billion. This is comparable to the EAD calculated under the standardized approach and the leverage ratio exposure. This is because the majority of the sovereign exposure is in the form of uncollateralized loans, i.e. there are no material differences in the exposure calculation.

The impact of employing standardized credit risk weights to the sovereign portfolio is an overall increase in credit risk risk-weighted assets. The exposure weighted-average risk weight under the internal model approach is less than 4%. This is lower than the risk weights assigned to counterparties under the standardized approach.

The following graph shows the risk weights assigned to counterparties under the A-IRB approach and the standardized approach. For the IRB risk weight curve, an LGD value of 45% and a maturity adjustment of 2.5 years are chosen, as these are the Basel Foundation IRB parameters. The Group’s exposure weighted-average maturity of its sovereign portfolio is lower than the foundation IRB value of 2.5 years, and lower maturities would result in a lower model-based risk weight curve than shown in the following graph. In addition, the PD for each rating shown in the graph are consistent with the Group’s PD masterscale. The graph shows that counterparties in the AAA to A range (based on external ratings) would attract lower risk weights (0% and 20%) under the standardized approach than under the A-IRB approach. The majority of the Group’s exposures have extremely low risk-weights under the A-IRB approach and would attract risk weights of 0% under the standardized approach. The remaining exposures would receive higher risk weights under the standardized approach (20%, 50% or 100%) than under the A-IRB approach. Overall, this would lead to higher risk-weighted assets under the standardized approach. The different treatments of loan maturity in the model based approach and standardized approach are not a material cause of risk-weighted assets differences.

> Refer to “Credit risk by asset class” in section “Credit risk” on pages 19 to 34 for further information on EAD and risk weights for each credit rating for the sovereign asset class.

Retail asset class

The EAD of the retail asset class under the internal model approach is CHF 182 billion, which is comparable to the EAD calculated under the standardized approach and the leverage ratio. This is because the majority of retail exposure is on-balance sheet exposure.

The application of the standardized approach would lead to higher credit risk risk-weighted assets. The exposure weighted-average risk weight is 13% using internal model approach. This is lower than the risk weights assigned to counterparties under the standardized approach. The maturity of the loan has no impact on the modelled risk weights in the retail asset class.

The retail portfolio consists mainly of residential mortgage loans, lombard lending and other retail exposures, and further analysis for each of these portfolios is provided below:

Residential mortgages: Under the standardized approach, fixed risk weights are applied depending on the loan-to-value (LTV), i.e. risk weight of 100% for LTV > 80%, risk weight of 75% for 80% > LTV > 67% and risk weight of 35% for LTV < 67%. The internal model-based approach however takes into account borrowers’ ability to service debt more accurately, including mortgage affordability and calibration to large amounts of historic data. The Group’s residential mortgage portfolio is focused on the Swiss market and the Group has robust review processes over borrowers’ ability to repay. This results in the Group’s residential mortgage

portfolio having a low average LTV and results in an average risk weight of 12% under the A-IRB approach.
Lombard lending: For lombard lending, the average risk weight using internal models is 13%. Risk-weighted assets under the standardized approach and the model-based approach are comparable for these exposures.
Other retail exposures: Other retail exposures are risk-weighted at 75% or 100% under the standardized approach. This yields higher risk-weighted assets compared to the A-IRB approach where the average risk-weight is 27%.
Conclusion
Overall, the Group's credit risk risk-weighted assets would be significantly higher under the standardized approach than under the internal model based approach. For most Basel asset classes, this is due to standardized risk weights being much higher than the IRB risk weights for high quality investment grade lending, which is where the majority of the Group's exposures are. For certain asset classes, standardized exposure calculations also lead to significantly higher risk-weighted assets. This is where the standardized exposure methods give limited recognition to economic offsetting and diversification for derivatives and SFTs at a portfolio level.
The credit risk risk-weighted assets under the standardized approaches described above may not be reflective of the capital charges under the new standardized approach for credit risk on which the BCBS has recently consulted. This proposed standardized approach for credit risk is likely to be more risk sensitive and less dependent on external ratings. In addition, there is a new standardized approach for counterparty credit risk (SA-CCR), which prescribes a standardized calculation of EAD for derivative transactions. SA-CCR, which is to be implemented by 2017, will more accurately recognize the risk mitigating effect of collateral and the benefits from legal and economic offsetting. These regulatory changes could potentially lead to very different results to the ones described above.
The credit risk risk-weighted assets computed under the internal model-based approach provide a more risk-sensitive indication of the credit risk capital requirements and are more reflective of the economic risk of the Group. The use of models produces a strong link between capital requirements and business drivers, and promotes a proactive risk culture at the origination of a transaction and strong capital consciousness within the organization. A rigorous monitoring and control framework also ensures compliance with internal as well as regulatory standards. In addition, benchmarking exercises performed by regulators and industry associations provide useful information for assessing the appropriateness and conservativeness of internal models. In the industry association's 2013 benchmark analysis, the Group's calibration of internal PD and LGD models was close to the industry mean.
Securitization risk in the banking book
For securitizations, the regulatory capital requirements are calculated using IRB approaches (the RBA and the SFA) and the standardized approach in accordance with the prescribed hierarchy of approaches in the Basel regulations. External ratings used in regulatory capital calculations for securitization risk exposures in the banking book are obtained from Fitch, Moody's, Standard & Poor's or Dominion Bond Rating Service.
> Refer to "Securitization risk in the banking book" in section "Credit risk" on pages 35 to 39 for further information on the IRB approaches and the standardized approach.
Equity type securities in the banking book
For equity type securities in the banking book except for significant investments in BFI entities, risk weights are determined using the IRB Simple approach based on the equity sub-asset type (listed equity and all other equity positions). Significant investments in BFI entities (i.e. investments in the capital of BFI entities that are outside the scope of regulatory consolidation, where the Group owns more than 10% of the issued common share capital of the entity) are subject to a threshold treatment as outlined below in the section "Exposures below 15% threshold". Where equity type securities represent non-significant investments in BFI entities (i.e., investments in the capital of BFI entities that are outside the scope of regulatory consolidation, where the Group does not own more than 10% of the issued common share capital of the entity), a threshold approach is applied that compares the total amount of non-significant investments in BFI entities (considering both trading and banking book positions) to a 10% regulatory defined eligible capital amount. The amount above the threshold is phased-in as a capital deduction and the amount below the threshold continues to be risk-weighted according to the relevant trading book and banking book approaches.
> Refer to "Equity type securities in the banking book" in section "Credit risk" on pages 39 to 40 for further information.
Credit valuation adjustment risk
Credit Valuation Adjustment (CVA) is a regulatory capital charge designed to capture the risk associated with potential mark-to-market losses associated with the deterioration in the creditworthiness of a counterparty.

Under Basel III, banks are required to calculate capital charges for CVA under either the Standardized CVA approach or the Advanced CVA approach (ACVA). The CVA rules stipulate that where banks have permission to use market risk VaR and counterparty risk IMM, they are to use the ACVA unless their regulator decides otherwise. FINMA has confirmed that the ACVA should be used for both IMM and non-IMM exposures.

The regulatory CVA capital charge applies to all counterparty exposures arising from over-the-counter (OTC) derivatives, excluding those with central counterparties (CCP). Exposures arising from SFT are not required to be included in the CVA charge unless they could give rise to a material loss. FINMA has confirmed that Credit Suisse can exclude these exposures from the regulatory capital charge.

Central counterparties risk

The Basel III framework provides specific requirements for exposures the Group has to CCP arising from OTC derivatives, exchange-traded derivative transactions and SFT. Exposures to CCPs which are considered to be qualifying CCPs by the regulator will receive a preferential capital treatment compared to exposures to non-qualifying CCPs.

The Group can incur exposures to CCPs as either a clearing member, or as a client of another clearing member. Where the Group acts as a clearing member of a CCP on behalf of its client (client trades), it incurs an exposure to its client. Since the exposure to the client is to be treated as a bilateral trade, the risk-weighted assets from these exposures are represented under “credit risk by asset class”. Where the Group acts as a client of another clearing member the risk-weighted assets from these exposures are also represented under “credit risk by asset class”.

The exposures to CCP (represented as “Central counterparties (CCP) risks”) consist of trade exposure, default fund exposure and contingent exposure based on trade replacement due to a clearing member default. While the trades exposure includes the current and potential future exposure of the clearing member (or a client) to a CCP arising from the underlying transaction and the initial margin posted to the CCP, the default fund exposure is arising from default fund contributions to the CCP.

Settlement risk

Regulatory fixed risk weights are applied to settlement exposures. Settlement exposures arise from unsettled or failed transactions where cash or securities are delivered without a corresponding receipt.

Exposures below 15% threshold

Significant investments in BFI entities, mortgage servicing rights and deferred tax assets that arise from temporary differences are subject to a threshold approach, whereby individual amounts are compared to a 10% threshold of regulatory defined eligible capital. In addition amounts below the individual 10% thresholds are aggregated and compared to a 15% threshold of regulatory defined eligible capital. The amount that is above the 10% threshold is phased-in as a CET1 deduction. The amount above the 15% threshold is phased-in as a CET1 deduction and the amount below is risk weighted at 250%.

Other items

Other items include risk-weighted assets related to immaterial portfolios for which we have received approval from FINMA to apply a simplified Institute Specific Direct Risk Weight as well as risk-weighted assets related to items that were risk-weighted under Basel II.5 and are phased in as capital deductions under Basel III.

Market risk

We use the advanced approach for calculating the capital requirements for market risk for the majority of our exposures. The following advanced approaches are used: the internal models approach (IMA) and the standardized measurement method (SMM).

We use the standardized approach to determine our market risk for a small population of positions which represent an immaterial proportion of our overall market risk exposure.

> Refer to section “Market risk” on pages 41 to 47 for further information on market risk.

Internal models approach

The market risk IMA framework includes regulatory Value-at-Risk (VaR), stressed VaR, risks not in VaR (RNIV) and Incremental Risk Charge (IRC). RNIV includes certain stressed RNIV. In 2014 Comprehensive Risk Measure was discontinued due to the small size of the correlation trading portfolio. We now use the standard rules for this portfolio.

Regulatory VaR, stressed VaR and risks not in VaR

We have received approval from FINMA, as well as from certain other regulators of our subsidiaries, to use our VaR model to calculate trading book market risk capital requirements under the IMA. We apply the IMA to the majority of the positions in our trading book. We continue to receive regulatory approval for ongoing enhancements to the VaR methodology, and the VaR model is subject to regular reviews by regulators. Stressed VaR replicates a VaR calculation on the Group’s current portfolio taking into account a one-year observation period relating to significant financial stress and helps to reduce the pro-cyclicality of the minimum capital requirements for market risk. The VaR model does not cover all identified market risk types and as such we have also adopted a RNIV category which was approved by FINMA in 2012.

Incremental Risk Charge

The IRC capitalizes issuer default and migration risk in the trading book, such as bonds or credit default swaps, but excludes securitizations and correlation trading. We have received approval from FINMA, as well as from certain other regulators of our subsidiaries, to use our IRC model. We continue to receive regulatory approval for ongoing enhancements to the IRC methodology, and the IRC model is subject to regular reviews by regulators.

The IRC model assesses risk at 99.9% confidence level over a one year time horizon assuming that positions are sold and replaced one or more times, depending on their liquidity which is modeled by the liquidity horizon. The portfolio loss distribution is estimated using an internally developed credit portfolio model designed to the regulatory requirements.

The liquidity horizon represents time required to sell the positions or hedge all material risk covered by the IRC model in a stressed market. Liquidity horizons are modelled according to the requirements imposed by Basel III guidelines.

The IRC model and liquidity horizon methodology have been validated by the Model Risk Management team in accordance with the firms validation umbrella policy and Risk Model Validation Sub-Policy for IRC.

Standardized measurement method

We use the SMM which is based on the ratings-based approach (RBA) and the supervisory formula approach (SFA) for securitization purposes (see also Securitization risk in the banking book) and other supervisory approaches for trading book securitization positions covering the approach for nth-to-default products and portfolios covered by the weighted average risk weight approach.

> Refer to “Securitization risk in the trading book” in section “Market risk” on pages 42 to 47 for further information on the standardized measurement method and other supervisory approaches.

Operational risk

We have used an internal model to calculate the regulatory capital requirement for operational risk under the Advanced Measurement Approach (AMA) since 2008. In 2014, we introduced an enhanced internal model that incorporated recent developments regarding operational risk measurement methodology and associated regulatory guidance. FINMA approved the revised model for calculating the regulatory capital requirement for operational risk with effect from January 1, 2014. We view the revised model as a significant enhancement to our capability to measure and understand the operational risk profile of the Group that is also more conservative compared with the previous approach.

The model is based on a loss distribution approach that uses historical data on internal and relevant external losses of peers to generate frequency and severity distributions for a range of potential operational risk loss scenarios, such as an unauthorized trading incident or a material business disruption. Business experts and senior management review, and may adjust, the parameters of these scenarios to take account of business environment and internal control factors, such as risk and control self-assessment results and risk and control indicators, to provide a forward-looking assessment of each scenario. Insurance mitigation is included in the regulatory capital requirement for operational risk where appropriate, by considering the level of insurance coverage for each scenario and incorporating haircuts as appropriate. The internal model then uses the adjusted parameters to generate an overall loss distribution for the Group over a one-year time horizon. The AMA capital requirement represents the 99.9th percentile of this overall loss distribution. The AMA capital requirement is allocated to businesses using a risk-sensitive approach that is designed to be forward looking and incentivize appropriate risk management behaviors.

In 2015, we made enhancements to the modelling approach including improvements to the treatment of litigation-related losses. Although past litigation losses and litigation-related provisions were incorporated in the model, for FINMA regulatory capital purposes an add-on was previously used to capture the aggregate range of reasonably possible litigation-related losses that are disclosed in our financial statements but are not covered by existing provisions. These reasonably possible losses are now fully captured within the model using an analytical approach and the add-on has therefore been removed with FINMA approval. We also made enhancements to further align the operational risk scenarios with other key components of the operational risk framework as well as to ensure consistency with the stress scenario framework developed for enterprise-wide risk management purposes.

> Refer to “Operational risk” (pages 154 to 156) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Risk management in the Credit Suisse Annual Report 2015 for information on operational risk.

Non-counterparty-related risk

Regulatory fixed risk weights are applied to non-counterparty-related exposures. Non-counterparty-related exposures arise from holdings of premises and equipment, real estate and investments in real estate entities.

BIS capital metrics

Regulatory capital and ratios

Regulatory capital is calculated and managed according to Basel regulations and used to determine BIS ratios. BIS ratios compare eligible CET1 capital, tier 1 capital and total capital with BIS risk-weighted assets.

> Refer to “Risk-weighted assets” (pages 124 to 125) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Capital management in the Credit Suisse Annual Report 2015 for information on risk-weighted assets movements in 2015.

Summary of BIS risk-weighted assets and capital requirements - Basel III

end of	2015		2014	
	Risk-weighted assets	Capital require-ment[1]	Risk-weighted assets	Capital require-ment[1]
CHF million				
Credit risk				
Advanced-IRB	126,014	10,081	123,854	9,908
Standardized	3,642	291	3,789	303
Credit risk by asset class	129,656	10,372	127,643	10,211
Advanced-IRB	8,771	702	11,849	948
Standardized	6,833	546	761	61
Securitization risk in the banking book	15,604	1,248	12,610	1,009
Advanced – IRB Simple	12,696	1,016	15,292	1,223
Equity type securities in the banking book	12,696	1,016	15,292	1,223
Advanced CVA	16,471	1,318	15,092	1,207
Standardized CVA	49	4	38	3
Credit valuation adjustment risk	16,520	1,322	15,130	1,210
Standardized - Fixed risk weights	12,410	993	12,640	1,011
Exposures below 15% threshold [2]	12,410	993	12,640	1,011
Advanced	2,142	171	3,427	274
Central counterparties (CCP) risk	2,142	171	3,427	274
Standardized - Fixed risk weights	269	22	552	44
Settlement risk	269	22	552	44
Advanced	470	38	1,050	84
Standardized	3,431	274	4,319	346
Other items [3]	3,901	312	5,369	430
Total credit risk	**193,198**	**15,456**	**192,663**	**15,413**
Market risk				
Advanced	29,469	2,358	34,049	2,724
Standardized	330	26	419	34
Total market risk	**29,799**	**2,384**	**34,468**	**2,758**
Operational risk				
Advanced measurement	66,438	5,315	58,413	4,673
Total operational risk	**66,438**	**5,315**	**58,413**	**4,673**
Non-counterparty-related risk				
Standardized - Fixed risk weights	5,515	441	5,866	469
Total non-counterparty-related risk	**5,515**	**441**	**5,866**	**469**
Total BIS risk-weighted assets and capital requirements	**294,950**	**23,596**	**291,410**	**23,313**
of which advanced	262,471	20,998	263,026	21,042
of which standardized	32,479	2,598	28,384	2,271

1

Calculated as 8% of risk-weighted assets based on BIS total capital minimum requirements.

2

Exposures below 15% threshold are risk-weighted at 250%. Refer to table "Additional information" in section "Reconciliation requirements" for further information.

3

Includes risk-weighted assets of CHF 2,997 million and CHF 3,853 million as of the end of 2015 and 2014, respectively, related to items that were risk-weighted under Basel II.5 and are phased in as capital deductions under Basel III. Refer to table "Additional information" in section "Reconciliation requirements" for further information.

BIS eligible capital - Basel III

	Group		Bank	
end of	2015	2014	2015	2014
Eligible capital (CHF million)				
CET1 capital	42,072	43,322	40,013	40,853
Total tier 1 capital	53,063	49,804	50,570	47,114
Total eligible capital	**62,682**	**60,751**	**60,242**	**58,111**

The following table presents the Basel III phase-in requirements for each of the relevant capital components and discloses the Group's and the Bank's current capital metrics against those requirements.

BIS capital ratios - Basel III - Group

end of	2015			2014		
	Ratio	Requirement[2]	Excess	Ratio	Requirement[2]	Excess
Capital ratios (%)						
Total CET1 [1]	14.3	4.5	9.8	14.9	4.0	10.9
Tier 1	18.0	6.0	12.0	17.1	5.5	11.6
Total capital	21.3	8.0	13.3	20.8	8.0	12.8

1 Capital conservation buffer and G-SIB buffer requirement will be phased in from January 1, 2016 through January 1, 2019.

2 Excludes countercyclical buffer that was required as of September 30, 2013. As of the end of 2015 and 2014, our countercyclical buffer was CHF 351 million and CHF 297 million, which is equivalent to an additional requirement of 0.1% and 0.1% of CET1 capital, respectively.

BIS capital ratios - Basel III - Bank

end of	2015			2014		
	Ratio	Requirement[2]	Excess	Ratio	Requirement[2]	Excess
Capital ratios (%)						
Total CET1 [1]	13.9	4.5	9.4	14.4	4.0	10.4
Tier 1	17.6	6.0	11.6	16.6	5.5	11.1
Total capital	21.0	8.0	13.0	20.5	8.0	12.5

1 Capital conservation buffer and G-SIB buffer requirement will be phased in from January 1, 2016 through January 1, 2019.

2 Excludes countercyclical buffer that was required as of September 30, 2013. As of the end of 2015 and 2014, our countercyclical buffer was CHF 286 million and CHF 246 million, which is equivalent to an additional requirement of 0.1% and 0.1% of CET1 capital, respectively.

Swiss capital metrics

Swiss regulatory capital and ratios

> Refer to “Swiss Requirements” for further information on Swiss regulatory requirements.

As of the end of 2015, our Swiss CET1 capital and Swiss total capital ratios were 14.2% and 21.1%, respectively, compared to the Swiss capital ratio phase-in requirements of 7.37% and 12.16%, respectively.

Swiss risk-weighted assets - Group

end of	2015			2014		
	Ad-vanced	Stan-dardized	Total	Ad-vanced	Stan-dardized	Total
Risk-weighted assets (CHF million)						
Total BIS risk-weighted assets	**262,471**	**32,479**	**294,950**	**263,026**	**28,384**	**291,410**
Impact of differences in thresholds [1]	1	(35)	(34)	1	(33)	(32)
Other multipliers [2]	942	–	942	1,090	–	1,090
Total Swiss risk-weighted assets	**263,414**	**32,444**	**295,858**	**264,117**	**28,351**	**292,468**

1 Represents the impact on risk-weighted assets of differences in regulatory thresholds resulting from Swiss regulatory CET1 adjustments.

2 Primarily includes differences in credit risk multiplier.

Swiss statistics - Basel III

	Group		Bank	
end of	2015	2014	2015	2014
Capital development (CHF million)				
CET1 capital	42,072	43,322	40,013	40,853
Swiss regulatory adjustments [1]	(143)	(133)	(117)	(111)
Swiss CET1 capital	**41,929**	**43,189**	**39,896**	**40,742**
High-trigger capital instruments	9,244[2]	8,893	9,350[3]	8,944
Low-trigger capital instruments	9,243[4]	9,406	8,320[5]	8,480
Additional tier 1 and tier 2 instruments subject to phase-out	5,586	6,663	5,586	6,669
Deductions from additional tier 1 and tier 2 capital	(3,463)	(7,533)	(3,027)	(6,835)
Swiss total eligible capital	**62,539**	**60,618**	**60,125**	**58,000**
Capital ratios (%)				
Swiss CET1 ratio	14.2	14.8	13.9	14.3
Swiss total capital ratio	21.1	20.7	20.9	20.4

1 Includes adjustments for certain unrealized gains outside the trading book.

2 Consists of CHF 6.6 billion additional tier 1 instruments and CHF 2.7 billion tier 2 instruments.

3 Consists of CHF 6.6 billion additional tier 1 instruments and CHF 2.7 billion tier 2 instruments.

4 Consists of CHF 5.1 billion additional tier 1 instruments and CHF 4.1 billion tier 2 instruments.

5

Consists of CHF 4.2 billion additional tier 1 instruments and CHF 4.1 billion tier 2 instruments.

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The following table presents the Swiss Requirements for each of the relevant capital components and discloses our current capital metrics against those requirements.

Swiss capital requirements and coverage

	Group									
	Capital requirements					Capital requirements				
end of	Minimum component	Buffer component	Progressive component	Excess	2015	Minimum component	Buffer component	Progressive component	Excess	
Risk-weighted assets (CHF billion)										
Swiss risk-weighted assets	–	–	–	–	**295.9**	–	–	–	–	**2**
2015 Swiss capital requirements [1]										
Minimum Swiss capital ratio	4.50%	5.12%[2]	2.54%	–	**12.16%**	4.50%	5.12%[2]	2.54%	–	**12.**
Minimum Swiss capital (CHF billion)	13.3	15.2	7.5	–	**36.0**	13.0	14.8	7.3	–	
Swiss capital coverage (CHF billion)										
Swiss CET1 Capital	13.3	8.5	–	20.1	**41.9**	13.0	8.3	–	18.7	
High-trigger capital instruments	–	6.7	–	2.6	**9.2**	–	6.5	–	2.9	
Low-trigger capital instruments	–	–	7.5	1.8	**9.2**	–	–	7.3	1.0	
Additional tier 1 and tier 2 instruments subject to phase-out	–	–	–	5.6	**5.6**	–	–	–	5.6	
Deductions from additional tier 1 and tier 2 capital	–	–	–	(3.5)	**(3.5)**	–	–	–	(3.0)	
Swiss total eligible capital	**13.3**	**15.2**	**7.5**	**26.6**	**62.5**	**13.0**	**14.8**	**7.3**	**25.1**	
Capital ratios (%)										
Swiss total capital ratio	4.50%	5.12%	2.54%	8.98%	**21.14%**	4.50%	5.12%	2.54%	8.73%	**20.**

Rounding differences may occur.

1 The Swiss capital requirements are based on a percentage of risk-weighted assets.

2 Excludes countercyclical buffer that was required as of September 30, 2013.

Credit risk

General

Credit risk consists of the following categories:

– Credit risk by asset class
– Securitization risk in the banking book
– Equity type securities in the banking book
– CVA risk
– Exposures below 15% threshold
– CCP risk
– Settlement risk
– Other items

> Refer to “Credit risk” (pages 151 to 153 and pages 166 to 178) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Risk management in the Credit Suisse Annual Report 2015 for information on our credit risk management approach, ratings and risk mitigation and impaired exposures and allowances.

Credit risk by asset class

General

For regulatory purposes, we categorize our exposures into asset classes with different underlying risk characteristics including type of counterparty, size of exposure and type of collateral. The asset class categorization is driven by regulatory rules from the Basel framework.

The following table presents the description of credit risk by asset class under the Basel framework (grouped as either institutional or retail) and the related regulatory approaches used.

Credit risk by asset class - Overview

Asset class	Description	Approaches
Institutional credit risk (mostly in the investment banking businesses)		
Sovereigns	Exposures to central governments, central banks, BIS, the International Monetary Fund, the European Central Bank and eligible MDB.	PD/LGD for most portfolios Standardized for banking book treasury liquidity positions and other assets
Other institutions	Exposures to public bodies with the right to raise taxes or whose liabilities are guaranteed by a public sector entity.	PD/LGD for most portfolios Standardized for banking book treasury liquidity positions and other assets
Banks	Exposures to banks, securities firms, stock exchanges and those MDB that do not qualify for sovereign treatment.	PD/LGD for most portfolios SRW for unsettled trades Standardized for banking book treasury liquidity positions and other assets
Corporates	Exposures to corporations (except small businesses) and public sector entities with no right to raise taxes and whose liabilities are not guaranteed by a public entity. The Corporate asset class also includes specialized lending, in which the lender looks primarily to a single source of revenues to cover the repayment obligations and where only the financed asset serves as security for the exposure (e.g., income producing real estate or commodities finance).	PD/LGD for most portfolios SRW for Investment Banking specialized lending exposures Standardized for banking book treasury liquidity positions and other assets

Retail credit risk (mostly in the private, corporate and institutional banking businesses)		
Residential mortgages	Includes exposures secured by residential real estate collateral occupied or let by the borrower.	PD/LGD
Qualifying revolving retail	Includes credit card receivables and overdrafts.	PD/LGD
Other retail	Includes loans collateralized by securities, consumer loans, leasing and small business exposures.	PD/LGD Standardized for other assets
Other credit risk		
Other exposures	Includes exposures with insufficient information to treat under the A-IRB approach or to allocate under the Standardized approach into any other asset class.	Standardized

Gross credit exposures, risk-weighted assets and capital requirement

The following table presents the derivation of risk-weighted assets from the gross credit exposures (pre- and post-substitution), broken down by regulatory approach and by the credit asset class under the Basel framework.

Gross credit exposures and risk-weighted assets by regulatory approach

end of	2015				2014			
	Exposure		Risk-weighted assets	Capital requirement[1]	Exposure		Risk-weighted assets	Capital requirement[1]
	Pre-substitution[2]	Post-substitution			Pre-substitution[2]	Post-substitution		
A-IRB (CHF million)								
PD/LGD								
Sovereigns	93,131	88,206	3,564	285	83,167	77,037	3,714	297
Other institutions	1,709	1,752	376	30	2,306	2,381	532	43
Banks	29,861	35,579	9,483	759	33,324	38,062	10,608	849
Corporates	195,953	195,117	83,867	6,709	202,960	204,277	83,192	6,655
Total institutional	**320,654**	**320,654**	**97,290**	**7,783**	**321,757**	**321,757**	**98,046**	**7,844**
Residential mortgage	102,020	102,020	12,158	973	101,350	101,350	11,117	889
Qualifying revolving retail	876	876	259	21	672	672	238	19
Other retail	79,515	79,515	13,131	1,050	78,449	78,449	11,509	921
Total retail	**182,411**	**182,411**	**25,548**	**2,044**	**180,471**	**180,471**	**22,864**	**1,829**
Total PD/LGD	**503,065**	**503,065**	**122,838**	**9,827**	**502,228**	**502,228**	**120,910**	**9,673**
Supervisory risk weights (SRW)								
Banks	13	13	3	0	26	26	5	0
Corporates	4,437	4,437	3,173	254	3,516	3,516	2,939	236
Total institutional	**4,450**	**4,450**	**3,176**	**254**	**3,542**	**3,542**	**2,944**	**236**
Total SRW	**4,450**	**4,450**	**3,176**	**254**	**3,542**	**3,542**	**2,944**	**236**
Total A-IRB	**507,515**	**507,515**	**126,014**	**10,081**	**505,770**	**505,770**	**123,854**	**9,908**
Standardized (CHF million)								
Sovereigns	17,321	17,321	452	36	7,306	7,306	453	36
Other institutions	79	79	16	1	175	175	35	3
Banks	303	303	69	5	319	319	74	6
Corporates	25	25	25	2	115	115	92	7
Total institutional	**17,728**	**17,728**	**562**	**44**	**7,915**	**7,915**	**654**	**52**
Other retail	120	120	120	10	184	184	149	12
Total retail	**120**	**120**	**120**	**10**	**184**	**184**	**149**	**12**
Other exposures	5,444	5,444	2,960	237	7,704	7,704	2,986	239
Total standardized	**23,292**	**23,292**	**3,642**	**291**	**15,803**	**15,803**	**3,789**	**303**
Total	**530,807**	**530,807**	**129,656**	**10,372**	**521,573**	**521,573**	**127,643**	**10,211**
of which counterparty credit risk[3]	84,781	84,781	21,104	1,688	99,099	99,099	25,916	2,073

1 Calculated as 8% of risk-weighted assets.

2
Gross credit exposures are shown pre- and post-substitution as, in certain circumstances, credit risk mitigation is reflected by shifting the counterparty exposure from the underlying obligor to the protection provider.
3
Includes derivatives and securities financing transactions.
20

Gross credit exposures and risk-weighted assets

	2015			2014		
	End of	Monthly average	Risk-weighted assets	End of	Monthly average	Risk-weighted assets
Gross credit exposures (CHF million)						
Loans, deposits with banks and other assets [1]	376,594	370,188	79,454	361,177	337,904	75,807
Guarantees and commitments	69,432	65,292	29,098	61,297	61,307	25,920
Securities financing transactions	31,046	34,945	6,195	35,131	35,399	6,495
Derivatives	53,735	64,160	14,909	63,968	63,666	19,421
Total	**530,807**	**534,585**	**129,656**	**521,573**	**498,276**	**127,643**

1 Includes interest bearing deposits with banks, banking book loans, available-for-sale debt securities and other receivables.

Geographic distribution of gross credit exposures

end of	Switzerland	EMEA	Americas	Asia Pacific	Total
2015 (CHF million)					
Loans, deposits with banks and other assets [1]	176,454	84,962	80,814	34,364	376,594
Guarantees and commitments	12,001	16,977	38,179	2,275	69,432
Securities financing transactions	2,404	11,555	12,965	4,122	31,046
Derivatives	6,319	28,302	14,726	4,388	53,735
Total	**197,178**	**141,796**	**146,684**	**45,149**	**530,807**
2014 (CHF million)					
Loans, deposits with banks and other assets [1]	165,629	86,004	78,004	31,540	361,177
Guarantees and commitments	12,509	14,584	31,931	2,273	61,297
Securities financing transactions	2,182	11,857	16,965	4,127	35,131
Derivatives	6,818	31,675	19,462	6,013	63,968
Total	**187,138**	**144,120**	**146,362**	**43,953**	**521,573**

The geographic distribution is based on the country of incorporation or the nationality of the counterparty, shown pre-substitution.

1 Includes interest bearing deposits with banks, banking book loans, available-for-sale debt securities and other receivables.

Industry distribution of gross credit exposures

end of	Financial institutions	Commercial	Consumer	Public authorities	Total
2015 (CHF million)					
Loans, deposits with banks and other assets [1]	9,600	134,767	134,235	97,992	376,594
Guarantees and commitments	7,870	58,329	2,038	1,195	69,432
Securities financing transactions	7,993	21,750	0	1,303	31,046
Derivatives	10,623	32,917	2,967	7,228	53,735
Total	**36,086**	**247,763**	**139,240**	**107,718**	**530,807**
2014 (CHF million)					
Loans, deposits with banks and other assets [1]	10,921	140,659	131,581	78,016	361,177

Guarantees and commitments	6,885	51,319	2,058	1,035	61,297
Securities financing transactions	7,599	23,929	9	3,594	35,131
Derivatives	12,269	41,968	2,928	6,803	63,968
Total	**37,674**	**257,875**	**136,576**	**89,448**	**521,573**

Exposures are shown pre-substitution.

1 Includes interest bearing deposits with banks, banking book loans, available-for-sale debt securities and other receivables.

Remaining contractual maturity of gross credit exposures

end of	within 1 year[1]	within 1-5 years	Thereafter	Total
2015 (CHF million)				
Loans, deposits with banks and other assets [2]	178,341	146,768	51,485	376,594
Guarantees and commitments	21,644	44,532	3,256	69,432
Securities financing transactions	30,857	189	0	31,046
Derivatives	14,551	18,827	20,357	53,735
Total	**245,393**	**210,316**	**75,098**	**530,807**
2014 (CHF million)				
Loans, deposits with banks and other assets [2]	204,879	105,497	50,801	361,177
Guarantees and commitments	19,514	39,686	2,097	61,297
Securities financing transactions	34,690	434	7	35,131
Derivatives	22,420	18,940	22,608	63,968
Total	**281,503**	**164,557**	**75,513**	**521,573**

1
Includes positions without agreed residual contractual maturity.

2
Includes interest bearing deposits with banks, banking book loans, available-for-sale debt securities and other receivables.

Portfolios subject to PD/LGD approach

Rating models

The majority of the credit rating models used in Credit Suisse are developed internally by Credit Analytics, a specialized unit in Credit Risk Management (CRM). These models are independently validated by Model Risk Management team prior to use in the Basel III regulatory capital calculation, and thereafter on a regular basis. Credit Suisse also uses models purchased from recognized data and model providers (e.g. credit rating agencies). These models are owned by Credit Analytics and are validated internally and follow the same governance process as models developed internally.

All new or material changes to rating models are subject to a robust governance process. Post development and validation of a rating model or model change, the model is taken through a number of committees where model developers, validators and users of the models discuss the technical and regulatory aspects of the model. The relevant committees opine on the information provided and decide to either approve or reject the model or model change. The ultimate decision making committee is the Risk Processes and Standards Committee (RPSC). The responsible Executive Board Member for the RPSC is the Chief Risk Officer. The RPSC sub-group responsible for credit risk models is the Credit Methodology Steering Committee (CMSC). RPSC or CMSC also review and monitor the continued use of existing models on an annual basis.

The following table provides an overview of the main PD and LGD models used by Credit Suisse. It reflects the portfolio segmentation from a credit risk model point of view, showing the risk-weighted assets, type and number of the most significant models, and the loss period available for model development by portfolio. As the table follows an internal risk segmentation and captures the most significant models only, these figures do not match regulatory asset class or other A-IRB based segmentation.

Main PD and LGD models used by Credit Suisse

				PD		LGD
Portfolio	Asset class	Risk-weighted assets (in CHF billion)	Number of years loss data	No. of models	Model comment	No. of models	Model comment
Corporates	Corporates, retail	42	>15 years	5	Statistical scorecards using e.g. balance sheet, profit & loss data and qualitative factors	3	Statistical and hybrid models using e.g. industry and counterparty segmentation, collateral types and amounts, seniority and other transaction specific factors with granularity enhancements by public research and expert judgement
Banks and other financial institutions	Banks, corporates	8	>30 years	2	Statistical scorecard and constrained expert judgement using e.g. balance sheet, profit & loss data and qualitative factors		
Funds	Corporates	10	>10 years	5	Statistical scorecards using e.g. net asset value, volatility of returns and qualitative factors		
Residential mortgages	Retail	8	>10 years	1	Statistical scorecard using e.g. loan-to-value, affordability, assets and qualitative factors	1	Statistical model using e.g. counterparty segmentation, collateral types and amounts
Income producing real estate	Specialized lending, retail	14	>10 years	2	Statistical scorecards using e.g. loan-to-value, debt service coverage and qualitative factors		
Commodity traders	Corporates, specialized lending	3	>10 years	1	Statistical scorecard using e.g. volume, liquidity and duration of financed commodity transactions		

Sovereign and public entities	Sovereign, corporates	3	>10 years	3	Statistical scorecards and constrained expert judgement using e.g. GDP, financials and qualitative factors	2	Statistical models using e.g. industry and counterparty segmentation, collateral types and amounts, seniority and other transaction specific factors
Ship finance	Specialized lending	2	>10 years	1	Simulation model using e.g. freight rates, time charter agreements, operational expenses and debt service coverage	1	Simulation model using e.g. freight rates, time charter agreements, operational expenses and debt service coverage
Lombard	Retail	8	>10 years	1	Merton type model using e.g. loan-to-value, collateral volatility and counterparty attributes	1	Merton type model using e.g. loan-to-value, collateral volatility and counterparty attributes

Model development

The techniques to develop models are carefully selected by Credit Analytics to meet industry standards in the banking industry as well as regulatory requirements. The models are developed to exhibit “through-the-cycle” characteristics, reflecting a probability of default in a 12 month period across the credit cycle.

All models have clearly defined model owners who have primary responsibility for development, enhancement, review, maintenance and documentation. The models have to pass statistical performance tests, where feasible, followed by usability tests by designated CRM experts to proceed to formal approval and implementation. The development process of a new model is thoroughly documented and foresees a separate schedule for model updates. The level of calibration of the models is based on a range of inputs, including internal and external benchmarks where available. Additionally, the calibration process ensures that the estimated calibration level accounts for variations of default rates through the economic cycle and that the underlying data contains a representative mix of economic states. Conservatism is incorporated in the model development process to compensate for any known or suspected limitations and uncertainties.

Model validation

Model validation for risk capital models is performed by the Model Risk Management function. Model governance is subject to clear and objective internal standards as outlined in the Model Risk Management policy and the Model Validation Policy. The governance framework ensures a consistent and meaningful approach for the validation of models in scope across the bank. All models whose outputs fall into the scope of the Basel internal model framework are subject to full independent validation. Externally developed models are subject to the same governance and validation standards as internal models.

The governance process requires each in scope model to be validated and approved before go-live; the same process is followed for material changes to an existing model. Existing models

are subject to an ongoing governance process which requires each model to be periodically validated and the performance to be monitored annually. The validation process is a comprehensive quantitative and qualitative assessment with goals that include:

– to confirm that the model remains conceptually sound and the model design is suitable for its intended purpose;
– to verify that the assumptions are still valid and weaknesses and limitations are known and mitigated;
– to determine that the model outputs are accurate compared to realized outcome;
– to establish whether the model is accepted by the users and used as intended with appropriate data governance;
– to check whether a model is implemented correctly;
– to ensure that the model is fully transparent and sufficiently documented.

To meet these goals, models are validated against a series of quantitative and qualitative criteria. Quantitative analyses may include a review of model performance (comparison of model output against realized outcome), calibration accuracy against the longest time series available, assessment of a model's ability to rank order risk and performance against available benchmarks. Qualitative assessment typically includes a review of the appropriateness of the key model assumptions, the identification of the model limitations and their mitigation, and ensuring appropriate model use. The modeling approach is re-assessed in light of developments in the academic literature and industry practice. Results and conclusions are presented to senior risk management including the RPSC; shortcomings and required improvements identified during validation must be remediated within an agreed deadline. The Model Risk Management function is independent of model developers and users and has the final say on the content of each validation report.

Stress testing of parameters

The potential biases in PD estimates in unusual market conditions are accounted for by the use of long run average estimates. Credit Suisse additionally uses stress-testing when back-testing PD models. When predefined thresholds are breached during back-testing, a review of the calibration level is undertaken. For LGD/CCF calibration stress testing is applied in defining Downturn LGD/CCF values, reflecting potentially increased losses during stressed periods.

Descriptions of the rating processes

All counterparties that Credit Suisse is exposed to are assigned an internal credit rating. The rating is assigned at the time of initial credit approval and subsequently reviewed and updated on an ongoing basis. Rating determination is based on relevant quantitative data (such as financial statements and financial projections) and qualitative factors relating to the counterparty which is used by CRM by employing a quantitative model which incorporates expert judgement through a well governed model override process in the assignment of a credit rating or PD, which measures the counterparty's risk of default over a one-year period.

Counterparty and transaction rating process – Corporates (excluding corporates managed on the Swiss platform), banks and sovereigns (primarily in the investment banking businesses)

Where rating models are used, the models are an integral part of the rating process, and the outputs from the models are complemented with other relevant information by credit officers via a robust model-override framework where information not captured by the models is taken into account by experienced credit officers. In addition to the information captured by the rating models, credit officers make use of peer analysis, industry comparisons, external ratings and research and the judgment of credit experts to complement the model ratings. This analysis emphasizes a forward looking approach, concentrating on economic trends and financial fundamentals. Where rating models are not used the assignment of credit ratings is based on a well-established expert judgment based process which captures key factors specific to the type of counterparty.

For structured and asset finance deals, the approach is more quantitative. The focus is on the performance of the underlying assets, which represent the collateral of the deal. The ultimate rating is dependent upon the expected performance of the underlying assets and the level of credit enhancement of the specific transaction. Additionally, a review of the originator and/or servicer is performed. External ratings and research (rating agency and/or fixed income and equity), where available, are incorporated into the rating justification, as is any available market information (e.g., bond spreads, equity performance).

Transaction ratings are based on the analysis and evaluation of both quantitative and qualitative factors. The specific factors analyzed include seniority, industry and collateral. The analysis emphasizes a forward looking approach.

Counterparty and transaction rating process – Corporates managed on the Swiss platform, mortgages and other retail (primarily in the private, corporate and institutional banking businesses)

For corporates managed on the Swiss platform and mortgage lending, the PD is calculated directly by proprietary statistical rating models, which are based on internally compiled data comprising both quantitative factors (primarily loan-to-value ratio and the borrower's income level for mortgage lending and balance sheet information for corporates) and qualitative factors (e.g., credit histories from credit reporting bureaus). In this case, an equivalent rating is assigned for reporting purposes, based on the PD band associated with each rating. Collateral loans (margin lending), which form the largest part of "Other retail", is also following an individual PD and LGD approach for loans managed on the Swiss platform, while a pool PD and pool LGD approach is followed elsewhere. Both approaches are calibrated to historical loss experience. Most of the collateral loans are loans collateralized by securities.

The internal rating grades are mapped to the Credit Suisse Internal Masterscale. The PDs assigned to each rating grade are reflected in the following table.

Credit Suisse counterparty ratings

Ratings	PD bands (%)	Definition	S&P	Fitch	Moody's	Details
AAA	0.000 - 0.021	Substantially risk free	AAA	AAA	Aaa	Extremely low risk, very high long-term stability, still solvent under extreme conditions
AA+	0.021 - 0.027	Minimal risk	AA+	AA+	Aa1	Very low risk, long-term stability, repayment
AA	0.027 - 0.034		AA	AA	Aa2	sources sufficient under lasting adverse
AA-	0.034 - 0.044		AA-	AA-	Aa3	conditions, extremely high medium-term stability
A+	0.044 - 0.056	Modest risk	A+	A+	A1	Low risk, short- and mid-term stability,
A	0.056 - 0.068		A	A	A2	small adverse
A-	0.068 - 0.097		A-	A-	A3	developments can be absorbed long term, short- and mid-term solvency preserved in the event of serious difficulties
BBB+	0.097 - 0.167	Average risk	BBB+	BBB+	Baa1	Medium to low risk, high short-term
BBB	0.167 - 0.285		BBB	BBB	Baa2	stability, adequate
BBB-	0.285 - 0.487		BBB-	BBB-	Baa3	substance for medium-term survival, very stable short term
BB+	0.487 - 0.839	Acceptable risk	BB+	BB+	Ba1	Medium risk, only short-term stability, only
BB	0.839 - 1.442		BB	BB	Ba2	capable of
BB-	1.442 - 2.478		BB-	BB-	Ba3	absorbing minor adverse developments in the medium term, stable in the short term, no increased credit risks expected within the year
B+	2.478 - 4.259	High risk	B+	B+	B1	Increasing risk, limited capability to absorb
B	4.259 - 7.311		B	B	B2	further unexpected negative developments
B-	7.311 - 12.550		B-	B-	B3	
CCC+	12.550 -	Very high	CCC+	CCC+	Caa1	High risk, very limited capability to absorb
CCC	21.543	risk	CCC	CCC	Caa2	further unexpected negative developments
CCC-	21.543 -		CCC-	CCC-	Caa3	
CC	100.00		CC	CC	Ca	
	21.543 - 100.00					
	21.543 - 100.00					
C	100	Imminent or	C	C	C	Substantial credit risk has materialized, i.e.
D1	Risk of default	actual loss	D	D		counterparty
D2	has materialized					is distressed and/or non-performing. Adequate specific provisions must be made as further adverse developments will result directly in credit losses.

Transactions rated C are potential problem loans; those rated D1 are non-performing assets and those rated D2 are non-interest earning.

Use of internal ratings

Internal ratings play an essential role in the decision-making and the credit approval processes. The portfolio credit quality is set in terms of the proportion of investment and non-investment grade exposures.
Investment/non-investment grade is determined by the internal rating assigned to a counterparty.
Internal counterparty ratings (and associated PDs), transaction ratings (and associated LGDs) and CCF for loan commitments are inputs to risk-weighted assets and Economic Risk Capital (ERC) calculations. Model outputs are the basis for risk-adjusted-pricing or assignment of credit competency levels.
The internal ratings are also integrated into the risk management reporting infrastructure and are reviewed in senior risk management committees. These committees include the Chief Executive Officer, Chief Credit Officer (CCO), Regional CCO, RPSC and Capital Allocation Risk Management Committee (CARMC).
Credit Risk Review
In 2015, the Group strengthened the Credit Risk Review (CCR) function and established a direct reporting line to the Board's Risk Committee. CCR is a control function independent from CRM and provides regular assessments of the Group's credit exposures and credit risk management practices. CCR is responsible for performing cycled and continuous credit monitoring activities, including:
– identifying credit exposures with potential weaknesses;
– assessing the accuracy and consistency of Group counterparty and transaction ratings;
– assessing compliance with internal and regulatory requirements for credit risk management;
– ensuring compliance with regulatory and supervisory statements where CRR is designated as a control function;
– reporting trends and material review recommendations to the Risk Committee and senior management.

Institutional credit exposures by counterparty rating under PD/LGD approach

	2015				2014			
	Total exposure (CHF m)	Exposure-weighted average LGD (%)	Exposure-weighted average risk weight (%)[1]	Undrawn commitments (CHF m)	Total exposure (CHF m)	Exposure-weighted average LGD (%)	Exposure-weighted average risk weight (%)[1]	Undrawn commitments (CHF m)
Sovereigns								
AAA	46,768	3.22	0.54	22	33,353	5.56	0.79	21
AA	33,718	6.33	2.00	221	36,154	6.36	1.72	137
A	3,063	10.84	2.60	–	1,185	38.52	14.36	–
BBB	3,065	41.51	32.04	–	5,349	44.82	29.03	2
BB	1,257	48.79	66.95	–	711	26.91	56.96	–
B or lower	335	41.40	159.58	2	281	42.48	173.03	–
Default (net of specific provisions)	–	–	–	–	4	–	–	–
Total credit exposure	**88,206**	–	–	**245**	**77,037**	–	–	**160**
Exposure-weighted average CCF (%)[2]	99.83	–	–	–	99.79	–	–	–
Other institutions								
AAA	–	–	–	–	–	–	–	–
AA	973	44.02	10.25	204	1,538	45.21	10.82	227
A	259	42.50	16.18	44	174	40.42	16.81	39
BBB	482	44.86	40.73	96	536	43.41	38.93	101
BB	5	42.28	85.14	–	47	43.73	75.48	6
B or lower	33	12.19	36.81	4	86	27.37	72.76	4
Default (net of specific provisions)	0	–	–	–	–	–	–	–
Total credit exposure	**1,752**	–	–	**348**	**2,381**	–	–	**377**
Exposure-weighted average CCF (%)[2]	70.17	–	–	–	75.27	–	–	–
Banks								
AAA	–	–	–	–	–	–	–	–
AA	7,543	51.68	11.18	761	7,577	51.00	11.75	930
A	19,850	53.16	15.65	2,578	20,779	51.76	17.85	2,599
BBB	5,079	46.30	40.04	312	6,603	45.39	41.00	278
BB	2,641	51.47	83.54	50	2,364	49.70	77.06	74
B or lower	397	50.94	172.99	19	587	40.17	124.04	46
Default (net of specific provisions)	69	–	–	11	152	–	–	–
Total credit exposure	**35,579**	–	–	**3,731**	**38,062**	–	–	**3,927**
Exposure-weighted average CCF (%)[2]	94.89	–	–	–	94.46	–	–	–
Corporates								
AAA	–	–	–	–	–	–	–	–
AA	39,447	46.01	10.86	7,993	46,771	48.29	12.97	8,522
A	38,437	46.28	17.93	11,804	46,692	38.79	16.28	10,783
BBB	49,490	37.12	35.59	12,196	49,069	35.93	34.05	10,280

BB	48,931	32.73	62.98	10,620	43,584	33.60	67.54	6,515
B or lower	17,015	27.17	104.13	5,625	17,312	30.47	102.92	6,181
Default (net of specific provisions)	1,797	–	–	81	849	–	–	20
Total credit exposure	**195,117**	–	–	**48,319**	**204,277**	–	–	**42,301**
Exposure-weighted average CCF (%) [2]	73.74	–	–	–	75.87	–	–	–
Total institutional credit exposure	**320,654**	–	–	**52,643**	**321,757**	–	–	**46,765**

1
The exposure-weighted average risk weights in percentage terms is the multiplier applied to regulatory exposures to derive risk-weighted assets, and may exceed 100%.
2
Calculated before credit risk mitigation.

Retail credit exposures by expected loss band under PD/LGD approach

	2015				2014			
	Total exposure (CHF m)	Exposure-weighted average LGD (%)	Exposure-weighted average risk weight (%)[1]	Undrawn commit-ments (CHF m)	Total exposure (CHF m)	Exposure-weighted average LGD (%)	Exposure-weighted average risk weight (%)	Undrawn commit-ments (CHF m)
Residential mortgages								
0.00%-0.15%	96,708	15.30	9.27	1,222	95,468	15.74	8.46	1,298
0.15%-0.30%	3,232	23.28	35.12	77	3,695	28.75	29.50	102
0.30%-1.00%	1,728	23.56	57.94	15	1,820	28.97	52.53	26
1.00% and above	129	22.45	114.65	–	148	24.98	100.87	–
Defaulted (net of specific provisions)	223	–	–	3	219	–	–	1
Total credit exposure	**102,020**	–	–	**1,317**	**101,350**	–	–	**1,427**
Exposure-weighted average CCF (%)[2]	98.15	–	–	–	97.94	–	–	–
Qualifying revolving retail								
0.00%-0.15%	–	–	–	–	–	–	–	–
0.15%-0.30%	–	–	–	–	–	–	–	–
0.30%-1.00%	769	50.00	23.35	–	491	50.00	23.35	–
1.00% and above	106	20.00	60.59	–	180	20.00	60.59	–
Defaulted (net of specific provisions)	1	–	–	–	1	–	–	–
Total credit exposure	**876**	–	–	**–**	**672**	–	–	**–**
Exposure-weighted average CCF (%)[2]	99.98	–	–	–	99.98	–	–	–
Other retail								
0.00%-0.15%	68,647	55.15	8.66	1,239	72,559	53.58	10.55	1,192
0.15%-0.30%	2,271	62.87	35.12	45	924	60.79	31.91	73
0.30%-1.00%	3,786	46.27	45.06	90	2,406	44.30	48.46	73
1.00% and above	4,444	57.99	80.41	45	2,407	46.39	65.96	48
Defaulted (net of specific provisions)	367	–	–	2	153	–	–	3
Total credit exposure	**79,515**	–	–	**1,421**	**78,449**	–	–	**1,389**
Exposure-weighted average CCF (%)[2]	94.69	–	–	–	94.91	–	–	–
Total retail credit exposure	**182,411**	–	–	**2,738**	**180,471**	–	–	**2,816**

1
The exposure-weighted average risk weights in percentage terms is the multiplier applied to regulatory exposures to derive risk-weighted assets, and may exceed 100%.

2
Calculated before credit risk mitigation.

Loss analysis – regulatory expected loss vs. cumulative actual loss

The following table shows the regulatory expected loss as of the beginning of the years compared with the cumulative actual loss incurred during the year ended December 31, 2015 and 2014, respectively, for those portfolios where credit risk is calculated using the IRB approach.

Analysis of expected loss vs. cumulative actual loss

	2015		2014	
	Expected loss (beginning of year)	Cumulative actual loss	Expected loss (beginning of year)	Cumulative actual loss
Losses (CHF million)				
Sovereigns	19	0	13	0
Banks	300	235	275	221
Other institutions	2	187	2	260
Corporates [1]	1,741	1,079	1,496	903
Residential mortgages	84	25	93	23
Other retail (including qualifying revolving retail)	311	164	315	272
Total losses	**2,457**	**1,690**	**2,194**	**1,679**

1 Excludes specialized lending portfolios that are not subject to the PD/LGD approach.

Regulatory expected loss

Regulatory expected loss is a Basel III measure based on Pillar 1 metrics which is an input to the capital adequacy calculation. Regulatory expected loss can be seen as an expectation of average future loss as derived from our IRB models, and is not a prediction of future impairment. For non-defaulted assets, regulatory expected loss is calculated using PD and downturn estimates of LGD and CCF. For the calculation of regulatory expected loss for defaulted accrual accounted assets, PD is 100% and LGD is based on an estimate of likely recovery levels for each asset.

Cumulative actual loss

Cumulative actual loss comprises two parts: the opening impairment balance and the specific impairment losses for loans held at amortized cost and actual value charges providing an equivalent impairment measure for both fair value loans and counterparty exposures as if these were loans held at amortized cost (excluding any realized CDS gains). The actual value charges may not necessarily be the same as the fair value movements recorded through the consolidated statements of operations.

Cumulative actual loss can also include charges against assets that were originated during the year and were therefore outside of the scope of the regulatory expected loss calculated at the beginning of the year. Cumulative actual loss does not include the effects on the impairment balance of amounts written off during the year.

The average cumulative actual loss over the last two years is below the expected loss estimates reflecting a level of conservatism in the corporate and residential mortgage rating models.

The following table presents the components of the cumulative actual loss.

Cumulative actual loss

	2015				2014			
	Opening impairment balance	Specific impairment losses	Actual value charges	Total actual loss	Opening impairment balance	Specific impairment losses	Actual value charges	Total actual loss
CHF million								
Sovereigns	0	0	0	0	77	0	(77)	0
Banks	243	0	(8)	235	221	0	0	221
Other institutions	193	0	(6)	187	187	(3)	76	260
Corporates [1]	622	256	201	1,079	611	124	168	903
Residential mortgages	22	3	0	25	25	(2)	0	23
Other retail	91	73	0	164	196	76	0	272

Total	**1,171**	**332**	**187**	**1,690**	**1,317**	**195**	**167**	**1,679**

1
Excludes specialized lending portfolios that are not subject to the PD/LGD approach.
28

Credit Model Performance – estimated vs. actual

The following tables present the estimated and actual PD, LGD and CCF for assets under the IRB approach. They represent multi-year averages and, hence, are not intended to predict outcomes in any particular year, and cannot be regarded as predictions of the corresponding actual reported results.

Estimated PD, LGD and CCF are taken from each model and then mapped to the regulatory asset class. In the tables below, the comparison between actual and estimated parameters is derived from the latest available internal multi-year model development and calibration data. Disclosed numbers are not directly comparable to previous years due to extension of the covered period.

Analysis of expected credit model performance vs. actual results – private, corporate and institutional banking businesses

	PD of total portfolio (%)		LGD of defaulted assets (%)	
	Estimated	Actual	Estimated	Actual
Corporates	0.77	0.39	38	25
Residential mortgages	0.36	0.12	15	7
Other retail				
Lombard	0.09	0.04	65	29
Other	2.27	1.85	32	23

CCF of defaulted assets only disclosed on a total private, corporate and institutional banking businesses basis. Estimated CCF: 27%; actual CCF: 16%.

Analysis of expected credit model performance vs. actual results – investment banking businesses

	PD of total portfolio (%)		LGD of defaulted assets (%)	
	Estimated	Actual	Estimated	Actual
Sovereigns	1.69	0.31	52	2
Banks	1.64	0.23	50	19
Corporates and other institutions	2.12	0.35	36	35

CCF of defaulted assets only disclosed on a total investment banking businesses basis. Estimated CCF: 63%; actual CCF: 55%.

Portfolios subject to the standardized and supervisory risk weights approaches

Standardized approach

Under the standardized approach, risk weights are determined either according to credit ratings provided by recognized ECAIs or, for unrated exposures, by using the applicable regulatory risk weights. Less than 10% of our credit risk is determined using this approach. Balances include banking book treasury liquidity positions.

Supervisory risk weights approach

For specialized lending exposures, internal rating grades are mapped to one of five supervisory categories, associated with a specific risk weight under the SRW approach.

Equity IRB Simple approach

For equity type securities in the banking book, risk weights are determined using the IRB Simple approach, which differentiates by equity sub-asset types (listed equity and all other equity positions). From January 1, 2014, the risk weighting for private equity positions was increased to 400%, in line with the treatment applied to other equity positions.

Standardized and supervisory risk weighted exposures after risk mitigation by risk weighting bands

end of	Standardized approach	SRW	Equity IRB Simple	Total
2015 (CHF million)				
0%	17,730	196	0	17,926
>0%-50%	2,447	1,002	0	3,449
>50%-100%	3,115	2,906	0	6,021
>100%-200%	0	319	0	319
>200%-400%	0	27	3,175	3,202
Total	**23,292**	**4,450**	**3,175**	**30,917**
2014 (CHF million)				
0%	11,436	43	0	11,479
>0%-50%	832	445	0	1,277
>50%-100%	3,535	2,951	0	6,486
>100%-200%	0	3	0	3
>200%-400%	0	100	3,834	3,934
Total	**15,803**	**3,542**	**3,834**	**23,179**

Credit risk mitigation used for A-IRB and standardized approaches

Credit risk mitigation processes used under the A-IRB and standardized approaches include on- and off-balance sheet netting and utilizing eligible collateral as defined under the IRB approach.

Netting

> Refer to “Derivative instruments” (pages 174 to 176) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Risk management – Credit risk and to “Note 1 – Summary of significant accounting policies” (pages 261 to 262) in V – Consolidated financial statements – Credit Suisse Group in the Credit Suisse Annual Report 2015 for information on policies and procedures for on- and off-balance sheet netting.

> Refer to “Note 27 – Offsetting of financial assets and financial liabilities” (pages 299 to 302) in V – Consolidated financial statements – Credit Suisse Group in the Credit Suisse Annual Report 2015 for further information on the offsetting of derivatives, reverse repurchase and repurchase agreements, and securities lending and borrowing transactions.

Collateral valuation and management

The policies and processes for collateral valuation and management are driven by:

– a legal document framework that is bilaterally agreed with our clients; and

– a collateral management risk framework enforcing transparency through self-assessment and management reporting.

For collateralized portfolio by marketable securities, the valuation is performed daily. Exceptions are governed by the calculation frequency described in the legal documentation. The mark-to-market prices used for valuing collateral are a combination of firm and market prices sourced from trading platforms and service providers, where appropriate. The management of collateral is standardized and centralized to ensure complete coverage of traded products.

For the mortgage lending portfolio of the private, corporate and institutional banking businesses, real estate property is valued at the time of credit approval and periodically afterwards, according to our internal policies and controls, depending on the type of loan (e.g., residential, commercial) and loan-to-value ratio.

Primary types of collateral

The primary types of collateral are described below.

Collateral securing foreign exchange transactions and OTC trading activities primarily includes:

– Cash and US Treasury instruments; and

– G-10 government securities.

Collateral securing loan transactions primarily includes:

– Financial collateral pledged against loans collateralized by securities of clients of the private, corporate and institutional banking businesses (primarily cash and marketable securities);

– Real estate property for mortgages, mainly residential, but also multi-family buildings, offices and commercial properties; and
– Other types of lending collateral, such as accounts receivable, inventory, plant and equipment.

Concentrations within risk mitigation

Our investment banking businesses are active participants in the credit derivatives market and trades with a variety of market participants, principally commercial banks and broker dealers. Credit derivatives are primarily used to mitigate investment grade counterparty exposures.

Concentrations in our lending portfolio of the private, corporate and institutional banking businesses arise due to a significant volume of mortgages in Switzerland. The financial collateral used to secure loans collateralized by securities worldwide is generally diversified and the portfolio is regularly analyzed to identify any underlying concentrations, which may result in lower loan-to-value ratios.

> Refer to “Credit risk” (pages 151 to 153) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Risk management in the Credit Suisse Annual Report 2015 for further information on risk mitigation.

Credit risk mitigation used for A-IRB and standardized approaches

end of	Eligible financial collateral	Other eligible IRB collateral	Eligible guarantees/ credit derivatives
2015 (CHF million)			
Sovereigns	290	0	5,308
Other institutions	14	84	101
Banks	973	0	1,114
Corporates	8,526	36,275	19,762
Residential mortgages	3,996	82,884	29
Other retail	67,114	3,669	263
Total	**80,913**	**122,912**	**26,577**
2014 (CHF million)			
Sovereigns	711	0	6,823
Other institutions	3	103	96
Banks	1,684	0	1,025
Corporates	6,761	34,408	17,951
Residential mortgages	3,817	81,933	45
Other retail	66,347	4,325	244
Total	**79,323**	**120,769**	**26,184**

Excludes collateral used to adjust EAD (e.g. as applied under the internal models method).

Counterparty credit risk

Counterparty exposure

Counterparty credit risk arises from OTC and exchange-traded derivatives, repurchase agreements, securities lending and borrowing and other similar products and activities. The subsequent credit risk exposures depend on the value of underlying market factors (e.g., interest rates and foreign exchange rates), which can be volatile and uncertain in nature.

We have received approval from FINMA to use the internal model method for measuring counterparty risk for the majority of our derivative and secured financing exposures.

Credit limits

All credit exposure is approved, either by approval of an individual transaction/facility (e.g., lending facilities), or under a system of credit limits (e.g., OTC derivatives). Credit exposure is monitored daily to ensure it does not exceed the approved credit limit. These credit limits are set either on a potential exposure basis or on a notional exposure basis. Potential exposure means the possible future value that would be lost upon default of the counterparty on a particular future date, and is taken as a high percentile of a distribution of possible exposures computed by our internal exposure models. Secondary debt inventory positions are subject to separate limits that are set at the issuer level.

> Refer to “Credit risk” (pages 166 to 178) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Risk management in the Credit Suisse Annual Report 2015 for further information on counterparty credit risk, including transaction rating, credit approval process and provisioning.

Wrong-way exposures

Correlation risk arises when we enter into a financial transaction where market rates are correlated to the financial health of the counterparty. In a wrong-way trading situation, our exposure to the counterparty increases while the counterparty's financial health and its ability to pay on the transaction diminishes.

Capturing wrong-way risk requires the establishment of basic assumptions regarding correlations for a given trading product. We have multiple processes that allow us to capture and estimate wrong-way risk.

Credit approval and reviews

A primary responsibility of CRM is to monitor counterparty exposure and the creditworthiness of a counterparty, both at the initiation of the relationship and on an ongoing basis. Part of the review and approval process is an analysis and discussion to understand the motivation of the client and to identify the directional nature of the trading in which the client is engaged. Credit limits are agreed in line with the Group's risk appetite framework taking into account the strategy of the counterparty, the level of disclosure of financial information and the amount of risk mitigation that is present in the trading relationship (e.g., level of collateral).

Exposure adjusted risk calculation

Material trades that feature specific wrong-way risk are applied a conservative treatment for the purpose of calculating exposure profiles. The wrong-way risk framework applies to OTC, securities financing transactions and centrally cleared trades.

Wrong-way risk arises if the exposure the Group has against a counterparty is expected to be high when the probability of default of that counterparty is also high. Wrong-way risk can affect the exposure against a counterparty in two ways:

– The mark-to-market of a trade can be large if the counterparty's PD is high.

– The value of collateral pledged by that counterparty can be low if the counterparty's PD is high.

Two main types of wrong-way risk are distinguished:

– "General wrong-way risk" arises when the likelihood of default by counterparties is materially positively correlated with general market risk factors.

– "Specific wrong-way risk" arises when potential exposure to a specific counterparty is materially positively correlated with the counterparty' probability of default due to the nature of the transactions with the counterparty.

There are two variants of specific wrong-way risk:

– If there is a legal connection between the counterparty and the exposure, e.g. the Group buying a put from a counterparty on shares of that counterparty or a parent/subsidiary of that counterparty or a counterparty pledging its own shares or bonds as collateral.

– More general correlation driven specific wrong-way risk.

The presence of wrong-way risk is detected via automated checks for legal connection and via means of stress scenarios and historical time series analyses for correlation.

For those instances where a material wrong-way risk presence is detected, limit utilization and default capital are accordingly adjusted.

Regular reporting of wrong-way risk at both the individual trade and portfolio level allows wrong-way risk to be identified and corrective action taken in the case of heightened concern by CRM. Reporting occurs at various levels:

– Country exposure reporting – Exposure is reported against country limits established for emerging market countries. Exposures that exhibit wrong-way characteristics are given higher risk weighting versus non-correlated transactions, resulting in a greater amount of country limit usage for these trades.

– Counterparty exposure reporting – Transactions that contain wrong-way risk are risk-weighted as part of the daily exposure calculation process, as defined in the credit analytics exposure methodology document. This ensures that correlated transactions utilize more credit limit.

– Correlated repurchase and foreign exchange reports – Monthly reports produced by CRM capturing correlated repurchase and foreign exchange transactions. This information is reviewed by relevant CRM credit officers.

– Scenario risk reporting – In order to identify areas of potential wrong-way risk within the portfolio, a set of defined scenarios are run monthly. The scenarios are determined by CRM and involve combining existing scenario drivers with specific industries to determine where portfolios are sensitive to these stressed parameters, e.g. construction companies / rising interest rates.

– Scenario analysis is also produced for hedge funds which are exposed to particular risk sensitivities and also may have collateral concentrations due to a specific direction and strategy.

– In addition, and where required, CRM may prepare periodic trade level scenario analysis, in order to review the risk drivers and directionality of the exposure to a counterparty.

The Front Office is responsible for identifying and escalating trades that could potentially give rise to wrong-way risk. Any material wrong-way risk at portfolio or trade level should be escalated to senior CRM executives and risk committees.

Effect of a credit rating downgrade

On a daily basis, we monitor the level of incremental collateral that would be required by derivative counterparties in the event of a Credit Suisse ratings downgrade. Collateral triggers are maintained by our collateral management department and vary by counterparty.

> Refer to “Credit ratings” (page 113) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Liquidity and funding management in the Credit Suisse Annual Report 2015 for further information on the effect of a one, two or three notch downgrade as of December 31, 2015.

The impact of downgrades in the Bank’s long-term debt ratings are considered in the stress assumptions used to determine the conservative funding profile of our balance sheet and would not be material to our liquidity and funding needs.

> Refer to “Liquidity and funding management” (pages 106 to 113) in III – Treasury, Risk, Balance sheet and Off-balance sheet in the Credit Suisse Annual Report 2015 for further information on liquidity and funding management.

Credit exposures on derivative instruments

We enter into derivative contracts in the normal course of business for market making, positioning and arbitrage purposes, as well as for our own risk management needs, including mitigation of interest rate, foreign currency and credit risk. Derivative exposure also includes economic hedges, where the Group enters into derivative contracts for its own risk management purposes but where the contracts do not qualify for hedge accounting under US GAAP. Derivative exposures are calculated according to regulatory methods, using either the current exposures method or approved internal models method. These regulatory methods take into account potential future movements and as a result generate risk exposures that are greater than the net replacement values disclosed for US GAAP.

As of the end of 2015, no credit derivatives were utilized that qualify for hedge accounting under US GAAP.

> Refer to “Derivative instruments” (pages 174 to 176) in III – Treasury, Risk, Balance sheet and Off-balance sheet – Risk management – Credit risk in the Credit Suisse Annual Report 2015 for further information on derivative instruments, including counterparties and their creditworthiness.

> Refer to “Note 32 – Derivative and hedging activities” (pages 325 to 330) in V – Consolidated financial statements – Credit Suisse Group in the Credit Suisse Annual Report 2015 for further information on the fair value of derivative instruments and the distribution of current credit exposures by types of credit exposures.

> Refer to “Note 27 – Offsetting of financial assets and financial liabilities” (pages 299 to 302) in V – Consolidated financial statements – Credit Suisse Group in the Credit Suisse Annual Report 2015 for further information on netting benefits, netted current credit exposures, collateral held and net derivatives credit exposure.

Derivative exposure at default after netting

end of	2015	2014
Derivative exposure at default (CHF million)		
Internal models method	44,875	53,802
Current exposure method	8,860	10,166
Total derivative exposure	**53,735**	**63,968**

Collateral used for risk mitigation

end of	2015	2014
Collateral used for risk mitigation for the internal models method (CHF million)		
Financial collateral - cash / securities	27,104	32,463
Other eligible IRB collateral	232	723
Total collateral used for the internal models method	**27,336**	**33,186**
Collateral used for risk mitigation for the current exposure method (CHF million)		
Financial collateral - cash / securities	3,715	4,077
Other eligible IRB collateral	712	589
Total collateral used for the current exposure method	**4,427**	**4,666**

Credit derivatives that create exposures to counterparty credit risk (notional value)

end of	2015		2014	
	Protection bought	Protection sold	Protection bought	Protection sold
Credit derivatives that create exposures to counterparty credit risk (CHF billion)				
Credit default swaps	409.4	364.5	619.0	570.3
Total return swaps	7.7	0.1	12.5	0.1
Other credit derivatives	39.6	10.5	65.8	19.8
Total	**456.7**	**375.1**	**697.3**	**590.2**

Allowances and impaired loans

The following tables provide additional information on allowances and impaired loans by geographic distribution and changes in the allowances for impaired loans.

Geographic distribution of allowances and impaired loans

end of	Allowances individually evaluated for impairment	Allowances collectively evaluated for impairment	Total allowances	Impaired loans with specific allowances	Impaired loans without specific allowances	Total impaired loans
2015 (CHF million)						
Switzerland	433	171	604	1,078	185	1,263
EMEA	8	9	17	56	65	121
Americas	175	32	207	275	113	388
Asia Pacific	34	4	38	201	0	201
Total	**650**	**216**	**866**	**1,610**	**363**	**1,973**
2014 (CHF million)						
Switzerland	451	170	621	1,051	69	1,120
EMEA	11	8	19	72	17	89
Americas	78	33	111	174	7	181
Asia Pacific	0	7	7	0	0	0
Total	**540**	**218**	**758**	**1,297**	**93**	**1,390**

The geographic distribution of impaired loans is based on the location of the office recording the transaction. This presentation does not reflect the way the Group is managed.

Changes in the allowances for impaired loans

	2015			2014		
	Allowances individually evaluated for impairment	Allowances collectively evaluated for impairment	Total	Allowances individually evaluated for impairment	Allowances collectively evaluated for impairment	Total
Changes in the allowances for impaired loans (CHF million)						
Balance at beginning of period	**540**	**218**	**758**	**654**	**215**	**869**
Net additions/(releases) charged to income statement	296	(1)	295	142	3	145
Gross write-offs	(229)	0	(229)	(349)	0	(349)
Recoveries	28	0	28	41	0	41
Net write-offs	(201)	0	(201)	(308)	0	(308)
Provisions for interest	18	0	18	20	0	20
Foreign currency translation impact and other adjustments, net	(3)	(1)	(4)	32	0	32
Balance at end of period	**650**	**216**	**866**	**540**	**218**	**758**

> Refer to “Loans” in “Note 1 – Summary of significant accounting policies” (pages 263 to 265) in V – Consolidated financial statements – Credit Suisse Group in the Credit Suisse Annual Report 2015 for further information on definitions of past due and impaired loans.

> Refer to “Note 19 – Loans, allowance for loan losses and credit quality” (pages 284 to 292) in V – Consolidated financial statements – Credit Suisse Group in the Credit Suisse Annual Report 2015 for further information on allowances and impaired loans by industry distribution and the industry distribution of charges and write-offs.

Securitization risk in the banking book

The following disclosures, which also considers the “Industry good practice guidelines on Pillar 3 disclosure requirements for securitization”, refer to traditional and synthetic securitizations held in the banking book and regulatory capital on these exposures calculated according to the Basel III IRB and standardized approaches to securitization exposures.

> Refer to “Note 34 – Transfers of financial assets and variable interest entities” (pages 335 to 344) in V – Consolidated financial statements – Credit Suisse Group in the Credit Suisse Annual Report 2015 for further information on securitization, the various roles, the use of SPEs, the involvement of the Group in consolidated and non-consolidated SPEs, the accounting policies for securitization activities and methods and key assumptions applied in valuing positions retained/purchased.

A traditional securitization is a structure where an underlying pool of assets is sold to an SPE which pays for the assets by issuing tranched securities collateralized by the underlying asset pool. A synthetic securitization is a tranched structure where the credit risk of an underlying pool of assets is transferred, in whole or in part, through the use of credit derivatives or guarantees that may serve to hedge the credit risk of the portfolio. Many synthetic securitizations are not accounted for as securitizations under US GAAP. In both traditional and synthetic securitizations, risk is dependent on the seniority of the retained interest and the performance of the underlying asset pool.

The Group has both securitization and re-securitization transactions in the banking book referencing different types of underlying assets including real estate loans (commercial and residential), commercial loans and credit card loans. The key risks retained are related to the performance of the underlying assets. These risks are summarized in the securitization pool level attributes: PDs of underlying loans (default rate), severity of loss (LGD) and prepayment speeds. The transactions may also be exposed to general market risk, credit spread and counterparty credit risk.

The Group classifies securities within the transactions by the nature of the collateral (prime, sub-prime, Alt-A, commercial, etc.) and the seniority each security has in the capital structure (i.e. senior, mezzanine, subordinate etc.), which in turn will be reflected in the transaction rating. The Group’s internal risk methodology is designed such that risk charges are based on the place the particular security holds in the capital structure, the less senior the bond the higher the risk charges.

For re-securitization risk, the Group’s risk management models take a ‘look through’ approach where the behavior of the underlying securities or constituent counterparties are modeled based on their own particular collateral positions. These are then transmitted to the re-securitized position. No additional risk factors are considered within the re-securitization portfolios in addition to those identified and measured within securitization risk.

The Group is active in various roles in connection with securitization, including originator, investor and sponsor. As originator, the Group creates or purchases financial assets (e.g., residential mortgages or corporate loans) and then securitizes them in a traditional or synthetic transaction that achieves significant risk transfer to third party investors. The Group acts as liquidity provider to Alpine Securitization Corp. (Alpine), a multi-seller commercial paper conduit administered by Credit Suisse.

In addition, the Group invests in securitization-related products created by third parties and provides interest rate and currency swaps to SPEs involved in securitization activity.

Retained banking book exposures for mortgage, asset-backed securities (ABS) and collateralized debt obligation (CDO) transactions are risk managed on the same basis as similar trading book transactions. Other transactions will be managed in line with their individual structural or parameter requirements. The Group has also put in place a set of key risk limits for the purpose of managing the Group’s risk appetite framework in relation to securitizations and re-securitizations. The internal risk capital measurement is both consistent with securitization transactions and with similar structures in the trading book.

There are no instances where the Group has applied credit risk mitigation approaches to banking book securitization or re-securitization exposures.

In the normal course of business it is possible for the Group’s managed separate account portfolios and the Group’s controlled investment entities, such as mutual funds, fund of funds, private equity funds and other fund linked products to invest in the securities issued by other vehicles sponsored by the Group engaged in securitization and re-securitization activities. To address potential conflicts, standards governing investments in affiliated products and funds have been adopted.

Securitization exposures purchased or retained – banking book

	On-balance sheet		Off-balance sheet		
end of	Traditional	Synthetic	Traditional	Synthetic	Total
2015 (CHF million)					
Commercial mortgages	131	0	0	0	131
Residential mortgages	1,083	0	0	0	1,083
CDO/CLO	10,589	29,916	0	0	40,505
Other ABS	633	0	12,966	0	13,599
Total	**12,436**	**29,916**	**12,966**	**0**	**55,318**
2014 (CHF million)					
Commercial mortgages	248	0	0	0	248
Residential mortgages	912	0	0	0	912
CDO/CLO	3,638	20,868	0	0	24,506
Other ABS	694	1	17,803	0	18,498
Total	**5,492**	**20,869**	**17,803**	**0**	**44,164**

Synthetic structures predominantly represent structures where the Group has mitigated its risk by selling the mezzanine tranche of a reference portfolio. Amounts disclosed, however, are the gross exposures securitized including retained senior notes.

The following table represents the total amounts of banking book loans securitized by the Group that fall within the Basel III Securitization Framework and where the Group continues to retain at least some interests.

Exposures securitized by Credit Suisse Group in which the Group has retained interests – banking book

end of	2015				2014			
	Traditional		Synthetic		Traditional		Synthetic	
	Sponsor	Other role	Other role	Total	Sponsor	Other role	Other role	Total
CHF million								
Commercial mortgages	0	538	0	538	0	2,631	0	2,631
Residential mortgages	0	0	0	0	0	29	0	29
CDO/CLO	359	0	41,878	42,237				