

# Basel III 2018 Pillar 3 Disclosures

# 2018

Abbreviations are explained in the List of abbreviations in the back of this report.

Publications referenced in this report, whether via website links or otherwise, are not incorporated into this report.

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

# Basel III 2018 Pillar 3 Disclosures

Credit Suisse International

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### Cautionary Statement regarding Forward-looking Information

This report contains statements that constitute forward-looking statements. In addition, in the future we, and others on our behalf, may make statements that constitute forward-looking statements. Such forward-looking statements may include, without limitation, statements relating to the following:

- our plans, objectives or goals;
- our future economic performance or prospects;
- the potential effect on our future performance of certain contingencies; and
- assumptions underlying any such statements.

Words such as “believes,” “anticipates,” “expects,” “intends” and “plans” and similar expressions are intended to identify forward-looking statements but are not the exclusive means of identifying such statements. We do not intend to update these forward-looking statements except as may be required by applicable securities laws.

By their very nature, forward-looking statements involve inherent risks and uncertainties, both general and specific, and risks exist that predictions, forecasts, projections and other outcomes described or implied in forward-looking statements will not be achieved. We caution you that a number of important factors could cause results to differ materially from the plans, objectives, expectations, estimates and intentions expressed in such forward-looking statements. These factors include:

- the ability to maintain sufficient liquidity and access capital markets;
- market volatility and interest rate fluctuations and developments affecting interest rate levels;
- the strength of the global economy in general and the strength of the economies of the countries in which we conduct our operations, in particular the risk of continued slow economic recovery or downturn in the US or other developed countries or in emerging markets in 2019 and beyond;
- the direct and indirect impacts of deterioration or slow recovery in residential and commercial real estate markets;
- adverse rating actions by credit rating agencies in respect of sovereign issuers, structured credit products or other credit-related exposures;
- the ability to achieve our strategic objectives, including cost efficiency, net new asset, pre-tax income/(loss), capital ratios and return on

regulatory capital, leverage exposure threshold, risk-weighted assets threshold, and other targets and ambitions;

- the ability of counterparties to meet their obligations to us;
- the effects of, and changes in, fiscal, monetary, exchange rate, trade and tax policies, as well as currency fluctuations;
- political and social developments, including war, civil unrest or terrorist activity;
- the possibility of foreign exchange controls, expropriation, nationalization or confiscation of assets in countries in which we conduct our operations;
- operational factors such as systems failure, human error, or the failure to implement procedures properly;
- the risk of cyber-attacks on our business or operations;
- actions taken by regulators with respect to our business and practices and possible resulting changes to our business organization, practices and policies in countries in which we conduct our operations;
- the effects of changes in laws, regulations or accounting policies or practices in countries in which we conduct our operations;
- the potential effects of proposed changes in our legal entity structure;
- competition in geographic and business areas in which we conduct our operations;
- the ability to retain and recruit qualified personnel;
- the ability to maintain our reputation and promote our brand;
- the ability to increase market share and control expenses;
- technological changes;
- the timely development and acceptance of our new products and services and the perceived overall value of these products and services by users;
- acquisitions, including the ability to integrate acquired businesses successfully, and divestitures, including the ability to sell non-core assets;
- the adverse resolution of litigation, regulatory proceedings, and other contingencies; and
- other unforeseen or unexpected events and our success at managing these and the risks involved in the foregoing.

We caution you that the foregoing list of important factors is not exclusive. When evaluating forward-looking statements, you should carefully consider the foregoing factors and other uncertainties and events, including the information set forth in our Annual Report 2018.

# Introduction

This document comprises the Pillar 3 disclosures for Credit Suisse International ('CSi' or 'the Bank') as at 31 December 2018. It should be read in conjunction with CSi's 2018 Annual Report which can be found at: [www.credit-suisse.com](http://www.credit-suisse.com)

These Pillar 3 disclosures are prepared to meet the regulatory requirements set out in Part Eight of the Capital Requirements Regulation ('CRR'). Pillar 3 aims to promote market discipline and transparency through the publication of key information on capital adequacy, risk management and remuneration.

CSi is authorised by the Prudential Regulation Authority ('PRA') and regulated by the Financial Conduct Authority ('FCA') and the PRA.

## Basis and Frequency of Disclosures

Where disclosures have been withheld, as permitted, on the basis of confidentiality, immateriality, or being proprietary in nature, this is indicated. Pillar 3 disclosures are published annually, although key capital adequacy ratios are disclosed more frequently and may be found on the Credit Suisse website at [www.credit-suisse.com](http://www.credit-suisse.com)

The Annual Report is prepared under International Financial Reporting Standards ('IFRS') and accordingly, certain information in the Pillar 3 disclosures may not be directly comparable.

This Pillar 3 document has been verified and approved in line with internal policy. It has not been audited by CSi's external auditors.

## Basis of Consolidation

These Pillar 3 disclosures are prepared on a solo basis. CSi prepares its IFRS financial statements on a consolidated basis ('CSi group'), including a number of subsidiaries that do not fall within the regulatory scope of consolidation per the CRR.

## Restrictions on Transfer of Funds or Regulatory Capital within the CSi Group

In general, the restrictions around the repayment of liabilities and transfer of regulatory capital within the CSi group are related to constraints that are imposed on entities by local regulators. The movement of capital may also be subject to tax constraints where there are cross-border movements or thin capitalisation rules.

## Remuneration Disclosures

The remuneration disclosures required by CRR Article 450 can be found in a separate document ('Pillar 3 – UK Remuneration Disclosures 2018') on the Credit Suisse website at: [www.credit-suisse.com](http://www.credit-suisse.com).

# Capital Management

## Overview

The Credit Suisse group ('CS group') considers a strong and efficient capital position to be a priority. Consistent with this, CSi closely monitors its capital adequacy position on a continuing basis to ensure ongoing stability and support of its business activities. This monitoring takes account of the requirements of the current regulatory regime and any forthcoming changes to the capital framework.

Multi-year business forecasts and capital plans are prepared by CSi, taking into account its business strategy and the impact of known regulatory changes. These plans are subjected to various stress tests as part of the Internal Capital Adequacy Assessment Process ('ICAAP'). Within these stress tests, potential management actions, that are consistent with both the market conditions implied by the stress test and the stress test outcome, are identified. The results of these stress tests and associated management actions are updated, as part of the ICAAP, with results documented and reviewed by the Board of Directors. The

ICAAP is used for the SREP ('Supervisory Review and Evaluation Process') that the PRA conducts when assessing an institution's level of regulatory capital.

## Own Funds

Article 437 of the CRR requires disclosure of the main features of Common Equity Tier 1 ('CET1'), Additional Tier 1 ('AT1') and Tier 2 instruments. CSi's CET1 comprises permanent share capital of ordinary shares and reserves. The ordinary shares carry voting rights and the right to receive dividends. CSi has no AT1 capital and the terms of its Tier 2 capital instruments are disclosed in Appendix 1.

CSi's capital composition and principal capital ratios are presented in the tables below, together with a reconciliation to CSi's 2018 Statement of Financial Position. No amount shown in 'own funds' is subject to CRD IV transitional provisions.

### Capital composition

end of 2018

		2018		2017
	Note	Own funds	Statement of Financial Position (1) Difference	Own funds (11)
<b>USD million</b>				
<b>Tier 1 (and CET1) capital</b>				
Ordinary shares		12,366	12,366	12,366
Share premium		12,704	12,704	12,704
Retained earnings		(2,316)	(2,316)	(2,400)
Accumulated other comprehensive income		(29)	(29)	-
<b>Tier 1 (and CET1) before prudential filters and regulatory adjustments</b>		<b>22,725</b>	<b>22,725</b>	<b>22,670</b>
<b>Prudential filters and regulatory adjustments</b>				
Cash flow hedge reserve				
Elimination of losses / (gains) on fair valued liabilities	(2)	13		19
Elimination of losses / (gains) on derivative liabilities	(3)	(122)		(90)
Prudent valuation adjustments	(4)	(698)		(768)
Intangible assets	(5)	(476)		(454)
DTA on non temporary differences	(6)	(6)		(1)
Excess of expected losses over credit risk adjustments	(7)	(104)		(121)
Securitisation positions (Trading Book)	(8)	(62)		(38)
<b>Total Tier 1 (and CET1) capital</b>		<b>21,270</b>	<b>22,725</b>	<b>21,217</b>
<b>Tier 2 capital</b>				
Subordinated loans	(9)	991	1,553	2,629
SA General credit risk adjustments	(10)	6	6	6
<b>Total Tier 2 capital</b>		<b>997</b>	<b>1,558</b>	<b>2,635</b>
<b>Total capital ('own funds')</b>		<b>22,267</b>	<b>24,283</b>	<b>23,852</b>

### Capital ratios

	2018	2017
end of		
Common Equity Tier 1	20.5%	20.1%
Tier 1	20.5%	20.1%
<b>Total Capital</b>	<b>21.4%</b>	<b>22.6%</b>

Notes:

- (1) 2018 Statement of Financial Position for (i) Total Equity and (ii) Subordinated debt amounts prepared under IFRS.
- (2) Represents losses on liabilities that are valued at fair value resulting from changes in CSI's credit standing [CRR Article 33(1)(b)].
- (3) Represents gains on derivative liabilities that result from changes in CSI's credit standing [CRR Article 33(1)(c)].
- (4) A prudent valuation adjustment is applied in respect of fair valued instruments as required under CRDIV regulatory capital rules [CRR Articles 34, 105].
- (5) Intangible assets and goodwill do not qualify as capital for regulatory purposes under CRDIV [CRR Articles 36(1)(b), 37].
- (6) Deferred tax assets that rely on future profitability and do not arise from temporary differences net of associated tax liabilities are to be reduced from regulatory capital under Articles 36(1) point (c) and 38 of CRR.
- (7) For institutions using the AIRB Approach, represents shortfall of credit risk adjustments to expected losses.
- (8) Securitisation positions which can alternatively be subject to a 1,250% risk weight [CRR Articles 36(1)(k)(ii), 243(1)(b), 244(1)(b), 258].
- (9) Subordinated debt is either accrual accounted or fair valued under IFRS (eg. including accrued interest) whereas 'own funds' recognises it at nominal value and subject to amortisation. During the year, USD 1.5 billion of subordinated debt was repaid to DLJ UK Holdings Limited.
- (10) General credit risk provision for standardised counterparties is added back to Tier 2 capital [CRR Article 62 (c)].

## Countercyclical Capital Buffer

The Financial Policy Committee ('FPC') of the Bank of England is responsible for setting the UK Countercyclical Capital Buffer ('CCB') rate, i.e. the CCB rate that applies to UK exposures of banks, building societies and large investment firms incorporated in the UK. In setting the CCB, the FPC considers a number of core indicators such as credit to GDP ratios. CRD IV, as implemented in the UK, includes a transitional period, during which the FPC is responsible for deciding whether CCB rates set by EEA States should be recognised and for taking certain decisions about third country rates, including whether a higher rate should be set for the purposes of UK institutions calculating their CCBs.

CCBs can be applied at a CS group, sub-consolidated or legal entity basis. CRD IV also includes the potential for a Systemic Risk Buffer ('SRB') which could be similarly applied.

The FPC set a CCB rate of 0.5% for the UK effective from 27 June 2018. This increased to 1.0% on 28 November 2018. CCB rates have also been set by Czech Republic, Hong Kong, Iceland, Lithuania, Norway, Slovakia & Sweden for 2018 that apply to exposures to those countries. No further disclosures are made on CCB on the basis of materiality.

## Capital Resources Requirement

The Pillar 1 capital requirements of CSI are summarised below, along with the relevant risk-weighted asset ('RWA') values. Credit risk capital requirements and RWA are further broken down by risk-weight methodology and exposure class



## OV1 – Overview of RWA

end of	RWA		Minimum capital requirements
	2018	2017	2018
<b>USD million</b>			
Credit risk (excluding CCR)	5,870	7,638	470
Of which the standardised approach	915	1,243	73
Of which the foundation IRB (FIRB) approach	–	–	–
Of which the advanced IRB (AIRB) approach	4,910	6,257	393
Of which equity IRB under the simple risk-weighted approach or the IMA	45	138	4
Counterparty credit risk	58,517	62,136	4,681
Of which mark to market	38,494	41,550	3,080
Of which original exposure	–	–	–
Of which the standardised approach	–	–	–
Of which internal model method (IMM)	–	–	–
Of which risk exposure amount for contributions to the default fund of a CCP	348	341	28
Of which CVA	19,675	20,245	1,574
Settlement risk	–	7	–
Securitisation exposures in the banking book (after the cap)	1	797	–
Of which IRB approach	–	796	–
Of which IRB supervisory formula approach (SFA)	1	1	–
Of which internal assessment approach (IAA)	–	–	–
Of which standardised approach	–	–	–
Market risk	21,592	21,710	1,727
Of which the standardised approach	661	320	53
Of which IMA	20,931	21,390	1,674
Large exposures	14,191	9,044	1,135
Operational risk	2,875	2,669	230
Of which basic indicator approach	2,875	2,669	230
Of which standardised approach	–	–	–
Of which advanced measurement approach	–	–	–
Amounts below the thresholds for deduction (subject to 250% risk weight)	937	870	75
Floor adjustment	–	–	–
<b>Total</b>	<b>103,983</b>	<b>104,871</b>	<b>8,318</b>

Decrease in credit risk and counterparty credit risk is primarily a result of a reduction in book size during 2018 across several business areas and with multiple counterparties.

Large exposures increased due to lower loan / deposit netting benefit with CS AG as compared to 2017, and an increased stressed CNCOM buffer.

# Risk Management

## Overview

CSi's risk management framework is based on transparency, management accountability and independent oversight. Risk management plays an important role in CSi's business planning process and is strongly supported by senior management and the Board of Directors. The primary objectives of risk management are to protect CSi's financial strength and reputation, while ensuring that capital is well deployed to support business activities and increase shareholder value. CSi has implemented risk management processes and control systems and it works to limit the impact of negative developments by monitoring all relevant risks including credit, market, liquidity, operational and reputational as well as managing concentrations of risks.

## Board of Directors

The Directors are responsible for reviewing the effectiveness of CSi's risk management and systems of financial and internal control. These are designed to manage rather than eliminate the risks of not achieving business objectives, and, as such, offer reasonable but not absolute assurance against fraud, material misstatement and loss. The Board of Directors considers that adequate systems and controls are in place with regard to CSi's risk profile and strategy and an appropriate array of assurance mechanisms, properly resourced and skilled, have been established to avoid or minimise loss.

In addition, the Board of Directors has established a Board Risk Committee, as discussed below. Ordinary meetings of the Board Risk Committee are required to take place at least four times each year.

Recruitment to CSi's Board of Directors is governed by a nominations policy that is applied consistently to all subsidiaries within the CS group. At local level, this policy is implemented by a nominations committee that is required to evaluate the balance of skills, knowledge and experience of the Board of Directors by reference to the requirements of the Bank, and similarly to consider the skills, knowledge and experience of individual candidates for appointment. Consistent with the fact that the Bank

is an Equal Opportunities Employer, recruitment at all levels is based on consideration of a diverse range of candidates without discrimination or targets on the basis of any protected category. In addition the CSi Board has adopted a Diversity Policy, setting out the approach to diversity, including consideration of differences in skills, regional and industry experience, background, race, gender and other distinctions between Directors. The Board has reached its target of at least 25% female representation on the board and will continue to monitor the target in 2019 through periodic reviews. Details of directorships held by Board Members are shown in Appendix 2.

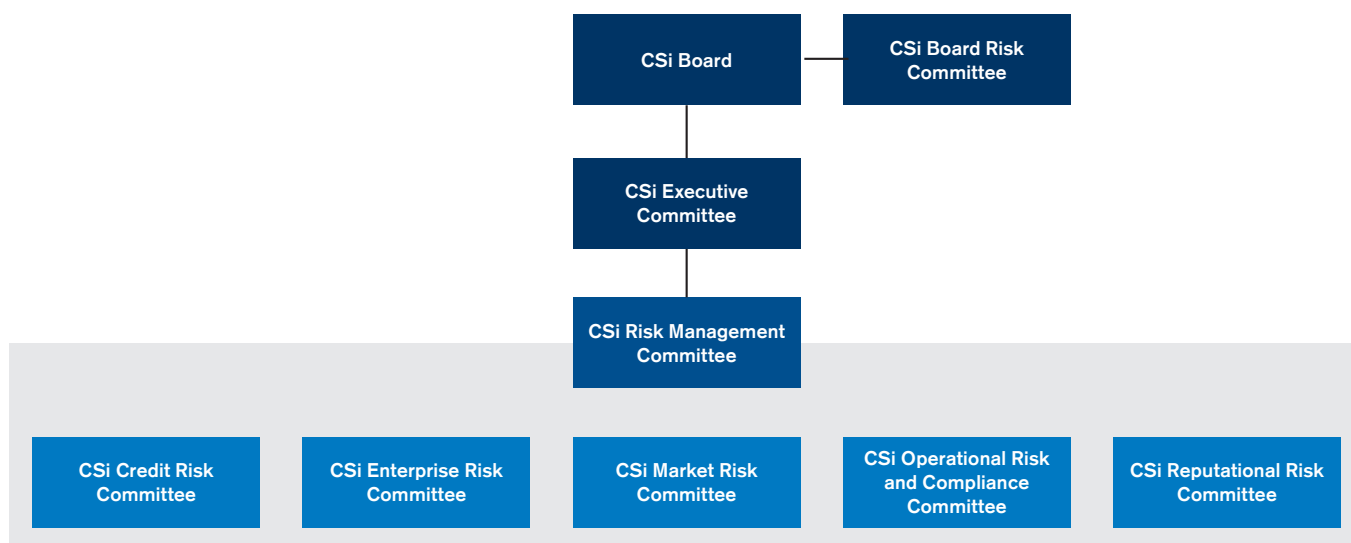
## Risk Organisation and Governance

Risks are monitored and managed as part of the Risk Appetite Framework. CSi's risk management organisation reflects its risk profile to ensure risks are managed in a transparent and timely manner. CSi's independent risk management function is headed by CSi's Chief Risk Officer ('CRO'), who reports jointly to CSi's CEO and the CRO of the CS group.

The CRO is responsible for overseeing CSi's risk profile and for ensuring that there is an adequate independent risk management function. This responsibility is delegated from the Board of Directors, via the ExCo, to the CRO, who in turn has established a risk governance framework and supporting organisation.

- **The CSi Board of Directors:** responsible to shareholders for the strategic direction, supervision and control of the entity and for defining the overall tolerance for risk;
- **The CSi Board Risk Committee:** responsible for assisting the Board of Directors in fulfilling their oversight responsibilities by providing guidance regarding risk governance and the development of the risk profile and capital adequacy, including the regular review of major risk exposures and recommending approval by the Board of overall risk appetite limits; and
- **The CSi Executive Committee:** this is the primary management committee of CSi and is charged with managing all aspects including strategy, culture, revenue, risk and control, costs and employees.

## Committee Hierarchy



The Board of Directors approves the overall framework for risk appetite. The authority to establish more granular limits within the bounds of the overall risk appetite is delegated to the CSi Risk Management Committee ('RMC'), which is chaired by CSi's CRO and comprises members of senior risk and business managers.

The purpose of the RMC is to:

- Ensure that proper standards as well as practices and controls for risk management are established for CSi;
- Define, implement and review the risk appetite framework for CSi covering material risk types;
- Review and set/approve limits and other appropriate measures to monitor and manage the risk portfolio and risk of the individual businesses that contribute to CSi;
- Review the Internal Capital Adequacy Assessment Process ('ICAAP') and the Individual Liquidity Adequacy Assessment Process ('ILAAP') for CSi;
- Ensure that proper standards for risk oversight and management are in place;
- Review and consider any matters to escalate to the CSi Executive Committee;
- Review and recommend all limit applications subject to approval by the CSi Board/Board Risk Committee;
- Define and establish risk limits for individual businesses and at the portfolio level within authorities delegated by the CSi Board; and
- Review the design and execution of stress testing scenarios and results.

In addition to this, and aligned with the organisation structure, CSi's CRO has implemented several sub-committees of the RMC:

- **The CSi Credit Risk Committee:** chaired by the CSi Chief Credit Officer, defines and implements the CSi Credit Risk Framework. It is responsible for reviewing emerging risks and assessing the impact of any issues that impact the UK IB

credit portfolio including counterparty, sector, and concentration. This process is supported by the Credit Risk Management department, which is responsible for approving credit limits, monitoring and managing individual exposures, and assessing and managing the quality of credit portfolios and allowances;

- **The CSi Market Risk Committee:** chaired by the CSi Head of Market Risk, defines and implements the CSi Market Risk Framework. It is responsible for reviewing emerging risks and assessing any issues that impact on the CSi market risk profile. This process is supported by the Market Risk Management department ('MRM') which is responsible for assessing and monitoring the market risk profile of the Bank and recommends corrective action where necessary;
- **The CSi Operational Risk & Compliance Committee:** co-chaired by the CSi Head of Enterprise & Operational Risk Management with the CSi Chief Compliance Officer, is responsible for ensuring that proper standards for management of operational, conduct and compliance risks are established for CSi and provide effective oversight over the risk profiles. It is also responsible for defining and implementing operational risk management strategies. This process is supported by the Enterprise & Operational Risk Management ('EORM') department which is responsible for the identification, assessment, and monitoring of operational risks;
- **The CSi Enterprise Risk Committee:** chaired by the CSi Head of Enterprise & Operational Risk, develops and maintains stress scenario processes which are appropriate for CSi, based on material risk factors identified. Reviews and monitors the Enterprise Risk Management ('ERM') risk appetite metrics and data quality issues. This process is supported by the Enterprise & Operational Risk Management ('EORM') department which is responsible for covering cross-divisional and cross-functional approaches towards identifying and measuring risks as well as defining and managing risk appetite levels;

- **The CSi Reputational Risk Committee:** co-chaired by the CSi CRO, CSi Chief Compliance Officer and CSi Deputy CEO, is responsible for reviewing and approving transactions that pose a material risk to the bank's reputation and are escalated as having potential to have a negative impact on CSi's reputation. This process is supported by the Reputational Risk Management ('RRM') department which is responsible for assessing actions or transactions which may pose a reputational risk to the Bank's reputation as escalated by both the First and Second Lines of defense, providing independent appraisal and facilitating the calibration of such risk.

The departments which support the CSi Risk Heads form part of a matrix management structure with reporting lines into both the CSi CRO and the relevant Global Risk Head. Furthermore, these departments are supported by a global infrastructure and data process which is maintained by the central Risk and Finance Data and Reporting ('RFDAR') group as well as the CRO Change team which is responsible for the delivery of the strategic and regulatory change portfolio sponsored by the Risk division. Support is also provided by the Global Risk functions in areas such as model development and credit analytics.

## Risk Appetite

Risk appetite represents the aggregate level and types of risk CSi is willing to assume to achieve the strategic objectives and business plan. The Risk Appetite Framework is the overall approach including policies, processes and controls through which risk appetite is established, communicated and monitored. This includes:

- Risk Appetite Statements;
- Risk limits and/or metrics; and
- Roles and responsibilities of those overseeing the implementation and monitoring of the Risk Appetite Framework.

The Risk Appetite Framework incorporates all material risks facing CSi and aligns to the strategy through use of the forward-looking business plan and is owned by the Board. In order to ensure alignment to the strategy CSi uses the following processes:

- Risk Capacity (capital and liquidity) is evaluated and quantified;
- Risks arising from the business strategy are identified (quantitative and qualitative) and assessed;
- Board Tolerance for these risks is defined using both enterprise-wide and individual measures; and
- Should the business strategy result in risk outside of Board tolerance, there is a feedback loop into the business planning process to ensure corrective action is taken.

The Risk Appetite is approved by the Board of Directors on an annual basis as part of the strategic planning process. The Risk Appetite is expressed through both qualitative statements and quantitative measures. It is underpinned by the strategic risk objectives which include:

- **Managing and controlling Conduct Risk:** Conduct business practices in line with the CSi code of conduct and proactively identify sources of risk that may negatively impact clients or markets and/or lead to reputational risk and/or regulatory sanctions;
- **Capital Adequacy:** Sufficient capital must be held to maintain capital ratios above both regulatory and stressed capital requirements;
- **Earnings Stability:** Limit earnings volatility to support the ability to achieve stated financial objectives;
- **Sound management of Funding Liquidity Risk:** Manage liquidity and funding liquidity risk by maintaining sufficient funds to meet all obligations on both a BAU basis, and in periods of liquidity stress;
- **Minimising Reputational Risk:** Aim to protect our reputation through a prudent approach to risk taking, an appropriate seniority and a responsible approach to business and which only accepts reputational risk where we can justify that the activity is in line with our internal policies and standards including local governance;
- **Enterprise Risk and Control Framework:** Ensure sustainable performance through the sound management of Enterprise Risk and Control Framework ('ERCF') risks (including Operational, Compliance and other non-financial risks) in our day to day operations and forward looking business strategy; and
- **Controlling Concentration Risk:** Proactively control concentrations within risk positions or revenues which pose a material risk to Firm-wide capital adequacy and/or earnings stability while maintaining a well-diversified funding base.

## Risk Limits

Based on these principles, the Board approves limits by key risk type. These limits are then used as a basis for defining a more granular framework of risk limits. The CRO is responsible for setting specific limits deemed necessary to manage the risk within individual lines of business and across counterparties as follows:

- Enterprise risk limits are based on portfolio level measures (RWA etc.) and are calibrated for both normal and stressed conditions. The overall risk limit calibration is recommended by the Head of Enterprise & Operational Risk who has responsibility for development and calibration of the full suite of enterprise risk limits;
- Market risk limits are based on a variety of sensitivity, portfolio and stress measures including, for example, Value at Risk ('VaR') and portfolio stress loss metrics. The overall market risk limit calibration is recommended by the Head of Market Risk who has responsibility for development and calibration of the full suite of market risk limits;
- Credit risk limits are based on a variety of exposure and stress measures including, for example, counterparty exposure and portfolio loss stress metrics. The overall credit risk limit calibration is recommended by CSi's Chief Credit Officer and is designed to control overall credit quality and mitigate

concentration risks (such as single name and industry type) within the portfolio;

- Operational risk thresholds are based on a series of metrics designed to assess control effectiveness. The overall calibration is recommended by the Head of Enterprise & Operational Risk and is designed to identify areas of potential control weakness and drive development of programmes to reduce operational risk. These thresholds are set in both quantitative (considering historical losses and gains) and qualitative (CS group-wide statements linked to risk and control indicators) terms; and
- Liquidity risk limits are based on regulatory and internal requirements for monitoring funding under a range of conditions. The overall liquidity risk limit calibration is recommended by the Head of Liquidity Risk who has responsibility for development and calibration of the full suite of liquidity risk limits.

The limits define CSI's maximum risk appetite given management resources, the market environment, business strategy and financial resources available to absorb potential losses.

CSI's financial risk management objectives and policies and the exposure of CSI to market risk, credit risk, liquidity risk and currency risk are also considered in the 2018 Annual Report, Note 44 – 'Financial Risk Management'.

## Stress Testing

These individual risk type limits are supplemented by an enterprise-wide stress testing programme which is designed to provide an aggregate view of CSI's financial risks. The enterprise-wide stress testing process begins with a scenario setting process, with the choice of scenarios being approved by the Enterprise Risk Committee. The scenarios are designed to be severe, but plausible, and relevant to CSI's business. The stress test process is based on both models and expert judgement. These stress test results are reported to the Board Risk Committee at each meeting and form a key input to the ICAAP and Internal Liquidity Adequacy Assessment Process.

# Current and Emerging Risks

Current and emerging risks are described in sections "Other Significant Risks" and "Risk exposures" on page 17 in the 2018 Annual Report.

# Linkages between Financial Statements and Regulatory Exposures

## LI1 – Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories

end of 2018	Carrying values of items						
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitisation framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital
<b>Assets (USD million)</b>							
Cash and due from banks	2,229	2,196	2,196				
Interest-bearing deposits with banks	17,859	17,859	17,859				
Securities purchased under resale agreements and securities borrowing transactions	10,487	10,487		10,487		3,414	
Trading financial assets mandatorily at fair value through profit or loss	148,674	148,518	174	124,516	8	147,642	71
Non-trading financial assets mandatorily at fair value through profit or loss	17,659	17,712	536	15,650		16,157	904
Net loans	3,512	3,512	3,512				
Investment property	18						
Current tax assets	21	21	21				
Deferred tax assets	330	330	323				6
Other assets	30,254	30,254	679	29,575		1,245	–
Property and equipment	234	234	234				–
Intangible assets	476	476					476
Assets held for sale	–	–	–	–			–
<b>Total assets</b>	<b>231,753</b>	<b>231,599</b>	<b>25,535</b>	<b>180,228</b>	<b>8</b>	<b>168,458</b>	<b>1,458</b>
<b>Liabilities (USD million)</b>							
Deposits	1,028	1,028					1,028
Securities sold under repurchase agreements and securities lending transactions	2,391	2,391		2,391		1,447	
Trading financial liabilities at fair value through profit or loss	126,414	126,414		123,456		125,273	
Financial liabilities designated at fair value through profit or loss	24,164	24,103		14,929		22,045	2,019
Borrowings	19,555	19,555	17,859				19,555
Current tax liabilities	51	51					51
Other liabilities	23,339	23,339		21,297		778	2,042
Provisions	5	5					5
Debt in issuance	12,146	11,988				–	11,988
Liabilities held for sale							
<b>Total liabilities</b>	<b>209,093</b>	<b>208,874</b>	<b>17,859</b>	<b>162,073</b>		<b>149,542</b>	<b>36,687</b>

## LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

end of 2018	Items subject to				
	Total	Credit risk framework	CCR framework	Securitisation framework	Market risk framework
<b>(USD million)</b>					
Asset carrying value amount under scope of regulatory consolidation (as per template LI1)	230,141	25,535	180,228	8	168,458
Liabilities carrying value amount under regulatory scope of consolidation (as per template LI1)	172,188	17,859	162,073		149,542
Total net amount under regulatory scope of consolidation	57,953	7,675	18,155	8	18,916
Off-balance sheet amounts	4,928	2,621			
Differences in valuations due to standardised approach (SA)					
Differences due to different netting rules due to standardised approach (SA), other than those already included in row 2					
Differences due to consideration of provisions					
Differences due to application of potential future exposures					
Derivative transactions – Differences due to application of Standard Rules (SR)	74,193		74,193		
SFT – differences due to application of Standard Rules (SR) (Repo-Var)	(3,612)		(3,612)		
Other Differences not classified above		2,915		3	(18,916)
<b>Exposure amounts considered for regulatory purposes</b>	<b>133,462</b>	<b>13,211</b>	<b>88,736</b>	<b>10</b>	<b>–</b>

The reasons for differences between accounting and regulatory exposures are as follows:

- (1) Notional for sold CDS trades are off balance sheet items as per accounting rules, however for regulatory purposes, sold CDS trades in the regulatory banking book are considered as regulatory exposures for credit risk;
- (2) The accounting balance sheet only records the default fund deposited with central counterparties, whereas for regulatory purposes, RWA is calculated in line with the prescribed regulatory default fund calculation;
- (3) Regulatory exposures are calculated on a net delta basis, as compared to gross exposures shown in the accounting balance sheet;
- (4) The regulatory exposure for certain loan positions is dependent on the market/present value, as compared to the gross exposure that is shown in the accounting balance sheet.

### LI3 – Outline of the differences in the scopes of consolidation (entity by entity)

end of 2018	Method of accounting consolidation	Method of regulatory consolidation			Description of the entity
		Full consolidation	Proportional consolidation	Neither consolidated nor deducted	
				Deducted	
<b>Name of the entity</b>					
AI3 (USD) Segregated Portfolio	Full consolidation			x	Special purpose entity
Ajanta Limited	Full consolidation			x	Special purpose entity
Andrea Cell 1000 EUR	Full consolidation			x	Special purpose entity
Andrea Cell 1000 USD	Full consolidation			x	Special purpose entity
Andrea Investments (Jersey) PCC (MASTER VEHICLE)	Full consolidation			x	Special purpose entity
Andrea Investments (Jersey) PCC: 1000	Full consolidation			x	Special purpose entity
Argentum Capital Series 2015-5	Full consolidation			x	Special purpose entity
Argentum Capital Series 2015-51	Full consolidation			x	Special purpose entity
Argentum Capital Series 2016-20	Full consolidation			x	Special purpose entity
Argentum Capital Series 2018-64	Full consolidation			x	Special purpose entity
Argentum Netherlands Series 2018-15	Full consolidation			x	Special purpose entity
Argentum Netherlands Series 2018-17	Full consolidation			x	Special purpose entity
Arundel (International) Limited	Full consolidation			x	Special purpose entity
Bellingham Properties Limited	Full consolidation			x	Special purpose entity
BOATS 557 (Nifco CB repack for JPY 1.5bn)	Full consolidation			x	Special purpose entity
BOATS 562 (SIIX CB repack)	Full consolidation			x	Special purpose entity
BOATS 567 (Tohoku Elec 20 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 568 (Nifco CB Repack Notes)	Full consolidation			x	Special purpose entity
BOATS 577 (Tohoku Elec CB Repack)	Full consolidation			x	Special purpose entity
BOATS 587 (Chugoku Elec CB Repack Notes)	Full consolidation			x	Special purpose entity
BOATS 590 (Chugoku Elec CB Repack Note)	Full consolidation			x	Special purpose entity
BOATS 600 (DAIO CB Repack)	Full consolidation			x	Special purpose entity
BOATS 603(Daio Paper CB Repack)	Full consolidation			x	Special purpose entity
BOATS 605(TORAY19 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 608 (NIFCO CB Repack)	Full consolidation			x	Special purpose entity
BOATS 613 (Daio paper 20 CB repack)	Full consolidation			x	Special purpose entity
BOATS 618 (Toray19 CB repack)	Full consolidation			x	Special purpose entity
BOATS 619 (Daio CB Repack)	Full consolidation			x	Special purpose entity
BOATS 620 (Daio CB Repack)	Full consolidation			x	Special purpose entity
BOATS 621 (TOHOKU20 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 624 (RELGRI 21 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 627 (SUMIMM 23 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 628 (TOHPHA 23 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 630 (HISJP 24 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 631 (SUMIMM 23 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 632 (SIIXCO 20 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 633 (SUMIMM 23 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 634 (LINECP 23 CB Repack)	Full consolidation			x	Special purpose entity
BOATS 637 (NIFCO 20 CB Repack)	Full consolidation			x	Special purpose entity
Bondstreet 2 GmbH	Full consolidation			x	Special purpose entity
CARMF Alternative 1	Full consolidation			x	Special purpose entity
Carmil Properties Limited	Full consolidation			x	Special purpose entity
Cepheus Holdings Limited	Full consolidation			x	Special purpose entity
Class K1 AHL Global Futures 7 EUR Shares	Full consolidation			x	Special purpose entity
Class L1 AHL Global Futures 8 EUR Shares	Full consolidation			x	Special purpose entity
COXARO HOLDINGS LIMITED	Full consolidation			x	Special purpose entity
Custom Markets AIFAM (MASTERVEHICLE)	Full consolidation			x	Special purpose entity



end of 2018	Method of regulatory consolidation			Description of the entity	
	Method of accounting consolidation	Full consolidation	Proportional consolidation	Neither consolidated nor deducted	Deducted
<b>Name of the entity</b>					
Dutch Holding Rembrandt B.V.	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 1 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 2 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 3 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 4 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 5 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 6 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 7 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 8 BV	Full consolidation			x	Special purpose entity
Dutch Property Company Rembrandt 9 BV	Full consolidation			x	Special purpose entity
Global Bond Fund	Full consolidation			x	Special purpose entity
HOLT Emerging Markets Equity Fund	Full consolidation			x	Special purpose entity
Interleuvenlaan 15 Real Estate Ltd	Full consolidation			x	Special purpose entity
Kaylen Properties Limited	Full consolidation			x	Special purpose entity
Mistral (SPC) (MASTER VEHICLE)	Full consolidation			x	Special purpose entity
Mistral (SPC) Long/Short Equity	Full consolidation			x	Special purpose entity
New Jersey S.A.	Full consolidation			x	Special purpose entity
Ramper Investments (Jersey) Limited – Series 11, Class A	Full consolidation			x	Special purpose entity
Ramper Investments (Jersey) Limited – Series 11, Class B	Full consolidation			x	Special purpose entity
Ramper Investments (Jersey) Limited – Series 12	Full consolidation			x	Special purpose entity
SAPIC Global Macro Master Fund Ltd.	Full consolidation			x	Special purpose entity
SAPIC Separate Account EV (Ecureuil Vie) Segregated Portfolio	Full consolidation			x	Special purpose entity
SAPIC-98 Master Fund	Full consolidation			x	Special purpose entity
Silver Hake Limited	Full consolidation			x	Special purpose entity
Simplon Capital Ltd. SPC – Alpalgo Seg Port (EUR) FLP3457	Full consolidation			x	Special purpose entity
Sontex (International) Limited	Full consolidation			x	Special purpose entity
Weveldlaan 41 Real Estate Ltd	Full consolidation			x	Special purpose entity
Westwood S.A	Full consolidation			x	Special purpose entity
YI Active Spezial ESPA Fund.	Full consolidation			x	Special purpose entity
Zephyros Limited	Full consolidation			x	Special purpose entity

# Credit Risk

## Overview

For regulatory purposes, exposures to borrowers or counterparties are categorised into exposure classes according to the framework set out in the CRR.

The majority of Pillar 1 credit and counterparty risk capital requirements are calculated using the Advanced Internal Ratings Based Approach to risk weights ('AIRB'), with certain exposure classes treated under the Standardised Approach to risk weights.

Credit risk in CSi is managed by the CSi Credit Risk Management department, which is headed by the CSi Chief Credit Officer, who in turn reports to the CSi Chief Risk Officer. CSi Credit Risk Management is a part of the wider Credit Risk Management department, which is an independent function with responsibility for approving credit limits, monitoring and managing individual exposures and assessing and managing the quality of the segment and business areas' credit portfolios and allowances. CSi Credit Risk Management's processes and policies cover credit risk arising from exposures to borrowers and counterparty credit risk. Counterparty credit risk arises from OTC and exchange-traded derivatives, repurchase agreements, securities lending and borrowing and other similar products and activities. The related 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. CSi enters into derivative contracts in the normal course of business principally for market-making and positioning purposes, as well as for risk management needs, including mitigation of interest rate, foreign currency, credit and other risks.

Effective credit risk management is a structured process to assess, quantify, measure, monitor and manage risk on a consistent basis. This requires careful consideration of proposed extensions of credit, the setting of specific limits, monitoring during the life of the exposure, active use of credit mitigation tools and a disciplined approach to recognising credit impairment. Credit limits are used to manage concentration to individual counterparties. A system of limits is also established to address concentration risk in the portfolio, including country limits, industry limits and limits for certain products. In addition, credit risk concentration is regularly supervised by credit and risk management committees, taking current market conditions and trend analysis into consideration.

A primary responsibility of CSi Credit Risk Management is to monitor the exposure to and 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 CSi'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). All credit exposure is approved, either by approval of an individual transaction or 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 on a potential 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 CSi's internal exposure models. Secondary debt inventory positions are subject to separate limits that are set at the issuer level.

A credit quality review process provides an early identification of possible changes in the creditworthiness of clients and includes regular asset and collateral quality reviews, business and financial statement analysis and relevant economic and industry studies. Regularly updated watch lists and review meetings are used for the identification of counterparties where adverse changes in creditworthiness could occur.

Counterparty credit limits are governed by the Credit Risk Appetite Framework, which establishes a set of ratings-based appetite limits for specific counterparty classes. Appetite limits have been calibrated to the Bank's capital through scenario-based approach which serves the dual purpose of protecting the strategic diversification of the portfolio while promoting an efficient usage of the available capital. Credit Risk Management does not explicitly manage internal capital at the level of individual counterparties. However, all counterparty limits are managed within the Credit Risk Appetite Framework. Credit Risk Management reviews CSi's credit risk appetite at least annually and considers historical information, forward-looking risk assessments, stress-testing results as well as business and capital plans when proposing or affirming appetite limits. The formulation of appetite is anchored to the capital base of CSi in order to protect the firm's capital resources in the event of large credit losses. An on-going risk identification process includes regular review and challenge of portfolio MI, credit officer interviews, review of business strategy and new business proposals, and may result in the development of new operating limits to protect CSi's capital resources. The CSi Credit Risk Committee monitors compliance with the Credit Risk Appetite Framework and reports any appetite breaches to the CSi Risk Management Committee on a monthly basis and, as needed, to the CSi Board Risk Committee.

## Credit Hedges and Risk Mitigation

Counterparty credit risk may be reduced through various forms of mitigation, including: credit default swaps, third-party guarantees, credit insurance, letters of credit and other written assurances (unfunded credit risk mitigation); and collateral or fully-collateralised derivatives (forms of funded protection).

For risk management purposes, the use of unfunded credit risk mitigation is subject to a risk transference guideline which sets out the roles and responsibilities of Credit Risk Management, General Counsel, and the Regulatory Reporting function in ensuring risk mitigation is effective and is given the correct capital treatment. In circumstances where the borrower is heavily reliant on the protection provider in order to secure the credit, Credit Risk Management will require the protection provider to be internally-rated higher than the borrower. The main types of guarantors are investment-grade rated insurers, mainly A-rated and above, that are active providers of risk mitigation to the CS Group on a global basis. The providers of credit default swap ('CDS') contracts for risk mitigation are mainly investment-grade rated international banks and CCPs. The residual risk associated with risk transference and concentration to specific protection providers is assessed on a semi-annual basis. The amount of credit risk arising from the concentration to protection providers is not considered to be material.

Taking of financial collateral is a key risk management tool for securities financing transactions, derivatives, FX, other OTC products and share-backed financing. Subject to legally enforceable agreements, collateral may be accepted in many different currencies and jurisdictions, and the collateral process creates potentially significant legal, tax, credit, regulatory and operational issues, in addition to the liquidity issues involved in running a large portfolio of collateral assets and liabilities. CSi's strategy with respect to collateral is subject to a robust collateral policy, which details standards of acceptable collateral (including collateral type, liquidity, quality and jurisdiction), valuation frequency, haircuts and agreement type (most agreements are two-way arrangements, meaning CSi may post as well as receive collateral). Additionally, limits and thresholds are established for the management of collateral concentrations to ensure there is no significant build-up of specific collateral types on a portfolio basis.

However, concentration with respect to cash collateral in major currencies is deemed acceptable from a risk management perspective. Similarly, high-quality liquid sovereign bonds are preferred over other less liquid or less stable collateral types. The majority of CSi's collateral portfolio is made up of cash and liquid securities which are subject to daily valuations.

The policies and processes for collateral valuation and management are driven by a legal documentation framework that is bilaterally agreed with clients, and a collateral management risk framework enforcing transparency through self-assessment and management reporting. For portfolios collateralised 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 internally-modelled and market prices sourced from trading platforms and service providers, where appropriate. The management of collateral is standardised and centralised to ensure complete coverage of traded products.

## Wrong-way Exposures

Wrong-way risk arises when CSi enters into a financial transaction in which exposure is adversely correlated to the creditworthiness of the counterparty. In a wrong-way trading situation, the exposure to the counterparty increases while the counterparty's financial condition and its ability to pay on the transaction diminishes. Capturing wrong-way risk ('WWR') requires the establishment of basic assumptions regarding correlations for a given trading product. The management of WWR is integrated within CSi's overall credit risk assessment approach and is subject to a framework for identification and treatment of WWR, which includes governance, processes, roles and responsibilities, methodology, scenarios, reporting, review and escalation.

A conservative treatment for the purpose of calculating exposure profiles is applied to material trades with WWR features. The WWR framework applies to OTC, securities financing transactions, loans and centrally cleared trades.

In instances where a material WWR presence is detected, limit utilisation and default capital are accordingly adjusted through more conservative exposure calculations. These adjustments cover both transactions and collateral and form part of the daily credit exposure calculation process, resulting in correlated transactions utilising more of the counterparty credit limit. In addition, WWR is considered in both the country and scenario risk reporting processes as follows:

- **Country exposure reporting:** exposure is reported against country limits established for emerging market countries. For country exposure reporting, wrong-way risk characteristics are established based on country of risk and currency. Exposures that exhibit wrong-way characteristics are given higher risk weighting, resulting in a greater amount of country limit usage for these trades; and
- **Scenario risk reporting:** in order to identify areas of potential WWR within the portfolio, a set of defined scenarios is run on a monthly basis. The scenarios are determined by Credit Risk Management for each counterparty, taking into account aspects such as revenue sources, systemic relevance of the counterparty and other considerations.

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. The Front Office is responsible as a first line of defense for identifying and escalating trades that could potentially give rise to WWR. Any material WWR at portfolio or trade level would be escalated to senior Credit Risk Management executives and risk committees.

## Credit Risk Reporting and Measurement

The RFDAR Risk Reporting group is responsible for the production of regular and ad hoc reporting of credit and counterparty

risk, country, industry and scenario exposures, in support of internal clients such as the senior management of the Bank and CRO management, as well as external stakeholders such as regulators.

CSi's credit exposures are captured in its INSIGHT system, where exposures are calculated from various inputs including trade data, mark-to-market valuations, economic sensitivities, legal documentation and jurisdiction, collateral and other forms of risk mitigation. The Credit Analytics group is responsible for the development and maintenance of exposure calculation methodologies.

## Effect of a Credit Rating Downgrade

CSi is subject to contractual and contingent commitments in derivative documentation which can be triggered by a credit rating downgrade. The additional collateral calls or settlement payments arising from ratings downgrade (3-notch for the 30-day stress or 2-notch for the 365-day stress) are quantified according to the terms included in the respective legal agreements. Downgrades under market, idiosyncratic and combined scenarios are considered in the stress assumptions. A liquidity pool made up of 'high quality liquid assets' ('HQLA') is held to mitigate these risks. Collateral outflows are based on CSA thresholds and individual terms agreed with counterparts and SPVs.

## Netting

Credit risk mitigation processes under the AIRB and Standardised Approaches include on- and off-balance sheet netting and utilising eligible collateral, as defined in the CRR.

CSi transacts bilateral OTC derivatives mainly under ISDA master agreements. These agreements provide for the net settlement of all transactions under the agreement through a single payment in the event of default or termination.

Reverse repurchase and repurchase agreements are generally covered by global master repurchase agreements with netting terms similar to ISDA master agreements. In addition, securities lending and borrowing transactions are generally executed under global master securities lending agreements, with netting terms also similar to ISDA master agreements. In certain situations, for example in the event of default, all contracts under the agreements are terminated and are settled in one single net payment.

## Equity Type Exposures in the Banking Book

The classification of equity type exposures into Trading Book and Banking Book is made for regulatory reporting purposes. The Banking Book includes all items that are not classified in the

Trading Book, for example, on the basis that there is no trading intent or on the basis of valuation approach or frequency.

For equity type exposures in the Banking Book, risk weights are determined using the IRB Simple Risk Weight Approach, which differentiates by equity sub-asset types (qualifying private equity, listed equity and all other equity positions). The significant majority of CSi's Banking Book equity exposures are in the Fund-Linked Product ('FLP') business area. These instruments are fair valued for accounting purposes, but fall within the regulatory Banking Book category, as valuations are not available sufficiently frequently to meet the standards required for Trading Book eligibility. In the context of business objectives and trading activity, the Banking Book positions are indistinguishable from FLP instruments that fall within the regulatory Trading Book category, and the positions are actively traded and risk-managed.

No further disclosure is made concerning cumulative realised gains or losses from sales or liquidations in the period and total latent revaluation gains or losses on the basis of materiality.

## Standardised Approach to Risk Weights

Under the Standardised Approach to risk weights, ratings published by External Credit Assessment Institutions ('ECAIs') are mapped to Credit Quality Steps ('CQS') according to mapping tables laid down by the European Banking Authority ('EBA'). The CQS value is then mapped to a risk weight percentage.

The ECAIs used by CSi are Standard & Poor's and Moody's.

## Internal Ratings Based Approach

The Basel Framework permits banks a choice between two broad methodologies in calculating their capital requirements for credit risk by exposure class, the IRB Approach (within which there are two variants, Foundation and Advanced) or the Standardised Approach. CSi has received approval from the PRA to use the AIRB Approach.

Under the AIRB Approach, risk weights are determined using internal models and risk parameters, whereas under the Standardised Approach, the risk weights are based on regulatory prescribed parameters. Credit risk models are reviewed and updated on an ongoing basis, reflecting more recent data, changes to methodologies, and updated regulatory requirements. For those portfolios where CSi has not received approval from the PRA to use the AIRB approach, the Standardised Approach is applied.

Currently, the AIRB Approach is used for the majority of exposures whereby internal estimates for probability of default ('PD') and loss given default ('LGD') are used when calculating credit risk capital requirements. As prescribed in its AIRB permission,

CSi calculates the credit risk capital requirement for equity exposures using the Simple Risk Weight Approach.

## Rating Models

The majority of the credit rating models used by CSi are developed internally by Credit Analytics, a specialised unit within CS Group Credit Risk Management. These models are independently validated by Model Risk Management prior to use in the regulatory capital calculation and thereafter on a regular basis (see below). CSi also uses models purchased from recognised data and model providers (eg. credit rating agencies).

All new or material changes to rating models are subject to a robust governance process. After development and validation of a rating model or model change, the model is reviewed by relevant governance committees where model developers, validators and users of the models consider the technical and regulatory aspects of the model. The relevant committees consider the information provided and decide to either approve or reject the model or model change.

## 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 are required to pass statistical performance tests, where feasible, followed by usability tests by designated Credit Risk Management experts to proceed to formal approval and implementation. The development process of a new model is 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 within CSi is performed by an independent function subject to clear and objective internal standards as outlined in the validation policy. This ensures a consistent and meaningful approach for the validation of models across all areas within CSi

and over time. All models are subject to Model Governance and depending on their risk-tiering to independent model validation. Where used, externally developed models are subject to the same governance and validation standards as internal models.

New Models and significant changes to existing models must be validated and approved before 'go-live'. A waiver is required to allow for use of an unapproved model including unapproved significant changes to an existing model.

Existing models are subject to a regular review process which requires each model to be periodically revalidated and its performance to be monitored at least annually.

Each validation review is a comprehensive quantitative and qualitative assessment aiming:

- to confirm that the model remains conceptually sound and the model design is suitable for its intended purpose;
- to verify that model assumptions are still supported and that limitations are known and mitigated;
- to confirm that model outputs are in line with realised outcomes;
- to establish whether the model is accepted by the users and is used as intended;
- to check whether a model is implemented correctly; and
- to ensure that the model is sufficiently transparent and is well documented.

To meet these goals, models are validated against a series of quantitative and qualitative criteria, and each validation is reviewed by the model governing committees. Quantitative analyses may include a review of model performance (comparison of model output against realised outcome), calibration accuracy against appropriate time series, assessment of a model's ability to rank order risk and performance against available benchmarks. Qualitative assessment includes a review of the appropriateness of the key model assumptions, the identification of the model limitations and their mitigation, and further review to ensure appropriate model use. The modelling approach is reassessed in light of developments in academic literature and industry practice.

Shortcomings and required improvements identified by the independent validation process must be remediated within an agreed deadline.

## Descriptions of the Rating Processes

Credit Risk Management policy requires that all credit-bearing transactions are approved by Credit Risk Management prior to trading. Generally, this approval takes the form of a credit analysis of the counterparty, which includes the assignment of a credit rating. In the cases of small, one-off and short-term trades, Credit Risk Management approval may take the form of a transaction approval, which may include an indicative rating or no rating. At the time of initial credit approval and review, relevant quantitative data (such as financial statements and financial

projections) and qualitative factors relating to the counterparty are used by Credit Risk Management in the models and result 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

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 from credit officers via a model-override framework. CSi has a PD model (PD-Master-scale), which applies to the following types of exposure: Banking Book bonds, commercial lending, exchange-traded derivatives, OTC derivatives, secured financing, open trades, and uncollateralised loans. The Masterscale PDs are estimated through reference to an external database, which contains the rating history of issuers over 30 years to the present. Annual default rates are calculated for each rating category, with default rates forming the basis of the PD calculation. For higher quality ratings, where there is relatively little default experience on which to base estimates, a low default portfolio ('LDP') estimator is used. All PDs are floored at 0.03% for all exposure classes with the exception of central governments and central banks, where no floor applies. The overrides by credit officers are intended to incorporate information not captured by the approved counterparty rating models. 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 support their fundamental credit analysis and determine model inputs. This analysis emphasises 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 judgement process which captures key factors specific to the type of counterparty.

The exposures in scope of CSi's LGD model are the same as those in the PD model. The main sources of information for LGD estimation purposes are data on experienced losses and recoveries. The CS group participates in data-pooling in which lending institutions contribute historical information on defaulted loans. LGDs are discounted and therefore reflect economic losses. They also include recovery cost and downturn effects. LGD estimates are annually backtested against internal experience.

EAD for loan products is calculated following the CCF approach. The scope of CCFs is irrevocable commitments such as regular loans and contingent liabilities such as letters of credit. For regular loans, a scalar CCF is used to convert an undrawn but committed amount into a loan equivalent. The EAD is modelled for each facility as the sum of the drawn exposure at reference date plus a percentage ('CCF') of the undrawn portion of the commitment. The CCF estimate is obtained using historical information on realised CCFs. This type of calculation requires information on exposures for defaulted counterparties both at default and at a given date prior to default (i.e. 12 months prior to default).

This information is sourced from CSi's default and loss database. CCFs include downturn and conservative add-ons. For contingent liabilities, CCFs are used to convert the exposures from drawn products to a cash exposure, and the CCFs used are based on CCF values under the foundation approach. CCF estimates are annually back-tested against recent internal experience.

For PD, LGD and CCF parameters, there are no deviations from the Regulatory definition of default and all are applied in the same way for central banks and central governments, institutions and corporates.

Credit Risk Management has established guidelines for the analysis and rating of all significant counterparty types. Analysis guidelines include the following requirements for specific IRB exposure classes:

- **Central governments and central banks:** the analysis of central governments and central banks must consider the connection to the sovereign. The legal enforceability, economic structure and level of development can vary vastly from one country to another, in addition to other factors that can drive the credit risk of an individual sovereign counterparty. Credit analysis includes an assessment of connection to the sovereign (for central banks), the legal basis on which the counterparty is established, the level of sovereign support (implicit or explicit), and a discussion of economic factors, including revenue generation (both current and future), the ability to collect additional revenue, current and future financial liabilities, access to capital markets, and quality of governance and administration. Analysis must also include a review of the current credit portfolio, including a summary of risk mitigation used to reduce credit exposure.
- **Institutions:** analysis of institutions is founded on a review of capital adequacy, asset quality, management, earnings, liquidity and funding. Analysis must also consider the counterparty's risk management (eg. credit, market, interest rate and operational risk), the counterparty's industry and franchise, and its operating environment, including regulatory environment. The credit review must include both quantitative and qualitative factors. The review must cover reported financials, ratios, and financial trends both in relation to historical performance and relative to peers. Peer analysis provides context for the analysis and is required in all reviews unless suitable peers are unavailable. Banks and bank holding companies are generally reviewed at the consolidated entity level, as well as at the legal entity level with which CSi is trading. This approach helps to uncover any particularly strong or weak entities within a group. To the extent that external ratings and research exist (rating agency and/or fixed income and equity), these must be reflected in the assessment if relevant. The analysis must also encompass relevant media information. As part of the counterparty review, Credit Risk Management is responsible for classifying whether certain institutions are 'regulated' per specific regulatory definitions and, if so, for capturing the financial institution's group asset value.
- **Corporates:** analysis of corporates includes an overview of the company including main business segments, sources of

revenue, and financial sponsor ownership. Corporate credit analysis is a function of the industry in which a company operates. Therefore industry and peer analysis is to be included in the review; if the counterparty competes in a global industry, global competitors may be the most appropriate. The comparisons should include credit ratings as well as financial metrics appropriate for the industry. Analysis must also include an assessment of specific financial factors, including profitability, cash flow adequacy, capital structure (leverage) and liquidity. As a minimum, review and peer analyses must include the following ratios: debt to earnings before interest, taxation, depreciation and amortisation ('EBITDA'), senior debt to EBITDA (if applicable) and net debt to EBITDA; interest coverage based on industry; and debt to capitalisation or debt to assets. Finally, where CSI extends loan facilities containing financial covenants, the review must include an analysis of those covenants.

For structured and asset finance deals, 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 (eg. bond spreads, equity performance).

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

## Use of Internal Ratings

Internal ratings play an essential role in the decision-making and credit approval processes. CSI's internal counterparty ratings

system has a 22-grade ratings scale. Ratings are reviewed regularly (at least annually), and consideration is given to external credit ratings during the review process. The portfolio credit quality is set in terms of the proportion of investment and non-investment grade exposures. Investment or 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 CCFs for loan commitments are inputs to RWA calculations. Model outputs are the basis for risk-adjusted pricing or assignment of credit competency levels.

The internal ratings are also integrated into CSI's risk management reporting infrastructure and are reviewed in senior risk management committees.

To ensure ratings are assigned on a consistent basis, the Credit Risk Review function, which is an independent team, performs periodic portfolio reviews on a sampled basis, which cover, inter alia:

- accuracy and consistency of assigned counterparty/transaction ratings;
- transparency of rating justifications (both the counterparty rating and transaction rating);
- quality of the underlying credit analysis and credit process; and
- adherence to CSI and CS group policies, guidelines, procedures, and documentation checklists.

Credit Risk Review is an independent control function of the Board of Directors Risk Committee of the CS Group. Credit Risk Review presents the findings of its reviews of the CSI portfolio to the CSI Risk Committee at least semi-annually.

## Credit Exposures RWA and Capital Requirements

The tables in this section contain analyses of credit exposures in both the Trading Book and Banking Book.

## CRB-B – Total and average net amount of exposures

	2018	
	Net value of exposures at the end of the period	Average net exposures over the period
<b>USD million</b>		
Central governments or central banks	974	982
Institutions	2,282	1,218
Corporates	9,215	9,429
Of which: Specialised lending	–	–
Of which: SMEs	–	–
Retail	–	–
Secured by real estate property	–	–
SMEs	–	–
Non-SMEs	–	–
Qualifying revolving	–	–
Other retail	–	–
SMEs	–	–
Non-SMEs	–	–
Equity	13	41
<b>Total IRB approach</b>	<b>12,484</b>	<b>11,670</b>
Central governments or central banks	1	19
Regional governments or local authorities	–	–
Public sector entities	81	90
Multilateral development banks	11	12
International organisations	–	–
Institutions	356	926
Corporates	1,064	1,487
Of which: SMEs	–	–
Retail	–	–
Of which: SMEs	–	–
Secured by mortgages on immovable property	–	–
Of which: SMEs	–	–
Exposures in default	20	61
Items associated with particularly high risk	–	–
Covered bonds	–	–
Claims on institutions and corporates with a short-term credit assessment	3	10
Collective investments undertakings	–	–
Equity exposures	–	–
Other exposures	–	4
<b>Total standardised approach</b>	<b>1,536</b>	<b>2,609</b>
<b>Total</b>	<b>14,020</b>	<b>14,279</b>



## CRB-C – Geographical breakdown of exposures

end of 2018	UK	of which England and Wales	Europe <sup>1</sup>	of which France	Americas	Asia	Africa & Middle East	Total
<b>Net value (USD million)</b>								
Central governments or central banks	482	482	417	196	23	23	29	974
Institutions	532	532	481	–	1,028	223	18	2,282
Corporates	4,089	4,089	4,652	1,697	234	110	130	9,215
Retail	–	–	–	–	–	–	–	–
Equity	7	7	6	–	–	–	–	13
<b>Total IRB approach</b>	<b>5,110</b>	<b>5,110</b>	<b>5,556</b>	<b>1,893</b>	<b>1,285</b>	<b>356</b>	<b>177</b>	<b>12,484</b>
Central governments or central banks	1	1	–	–	–	–	–	1
Regional governments or local authorities	–	–	–	–	–	–	–	–
Public sector entities	–	–	–	–	81	–	–	81
Multilateral development banks	–	–	–	–	–	11	–	11
International organisations	–	–	–	–	–	–	–	–
Institutions	189	189	166	–	1	–	–	356
Corporates	169	169	619	213	193	75	8	1,064
Retail	–	–	–	–	–	–	–	–
Secured by mortgages on immovable property	–	–	–	–	–	–	–	–
Exposures in default	–	–	20	–	–	–	–	20
Items associated with particularly high risk	–	–	–	–	–	–	–	–
Covered bonds	–	–	–	–	–	–	–	–
Claims on institutions and corporates with a short-term credit assessment	–	–	3	3	–	–	–	3
Collective investments undertakings	–	–	–	–	–	–	–	–
Equity exposures	–	–	–	–	–	–	–	–
Other exposures	–	–	–	–	–	–	–	–
<b>Total standardised approach</b>	<b>359</b>	<b>359</b>	<b>808</b>	<b>216</b>	<b>275</b>	<b>86</b>	<b>8</b>	<b>1,536</b>
<b>Total</b>	<b>5,469</b>	<b>5,469</b>	<b>6,364</b>	<b>2,109</b>	<b>1,560</b>	<b>442</b>	<b>185</b>	<b>14,020</b>

<sup>1</sup> All regions are shown plus any individual country where its exposure is greater than 10% of the total

## CRB-D – Concentration of Exposures by Industry or Counterparty types

end of 2018	Agriculture, forestry and fishing	Mining and quarrying	Manu- facturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade
<b>USD million</b>							
Central governments or central banks	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	-
Corporates	7	290	1,514	-	11	-	533
Retail	-	-	-	-	-	-	-
Equity	-	-	4	-	-	-	-
<b>Total IRB approach</b>	<b>7</b>	<b>290</b>	<b>1,518</b>	<b>-</b>	<b>11</b>	<b>-</b>	<b>533</b>
Central governments or central banks	-	-	-	-	-	-	-
Regional governments or local authorities	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	-
Corporates	-	1	261	331	1	1	-
Retail	-	-	-	-	-	-	-
Secured by mortgages on immovable property	-	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	3	-
Collective investments undertakings	-	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-	-
Other exposures	-	-	-	-	-	-	-
<b>Total standardised approach</b>	<b>-</b>	<b>1</b>	<b>261</b>	<b>331</b>	<b>1</b>	<b>4</b>	<b>-</b>
<b>Total</b>	<b>7</b>	<b>291</b>	<b>1,779</b>	<b>331</b>	<b>12</b>	<b>4</b>	<b>533</b>

Transport and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work-activities	Arts, entertainment and recreation	Financial and insurance activities	Other services	Total
-	-	-	-	-	-	938	-	-	-	36	-	974
-	-	-	-	-	-	-	-	-	-	2,282	-	2,282
351	55	1,913	14	49	715	-	-	95	137	3,531	-	9,215
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	9	-	13
<b>351</b>	<b>55</b>	<b>1,913</b>	<b>14</b>	<b>49</b>	<b>715</b>	<b>938</b>	<b>-</b>	<b>95</b>	<b>137</b>	<b>5,858</b>	<b>-</b>	<b>12,484</b>
-	-	-	-	-	-	1	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	81	-	-	-	-	-	81
-	-	-	-	-	-	-	-	-	-	11	-	11
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	356	-	356
-	-	32	-	-	-	-	-	1	-	436	-	1,064
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	16	-	-	-	-	-	-	4	-	20
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	3
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	32	16	-	-	82	-	1	-	807	-	1,536
<b>351</b>	<b>55</b>	<b>1,945</b>	<b>30</b>	<b>49</b>	<b>715</b>	<b>1,020</b>	<b>-</b>	<b>96</b>	<b>137</b>	<b>6,665</b>	<b>-</b>	<b>14,020</b>

## CRB-E – Maturity of exposures

end of 2018	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
<b>Net exposure value (USD million)</b>						
Central governments or central banks	36	550	327	61	–	974
Institutions	2,084	192	6	–	–	2,282
Corporates	110	1,461	6,954	690	–	9,215
Retail	–	–	–	–	–	–
Equity	–	–	–	–	13	13
<b>Total IRB approach</b>	<b>2,230</b>	<b>2,203</b>	<b>7,287</b>	<b>751</b>	<b>13</b>	<b>12,484</b>
Central governments or central banks	–	1	–	–	–	1
Regional governments or local authorities	–	–	–	–	–	–
Public sector entities	–	–	81	–	–	81
Multilateral development banks	–	–	11	–	–	11
International organisations	–	–	–	–	–	–
Institutions	169	187	–	–	–	356
Corporates	33	319	691	21	–	1,064
Retail	–	–	–	–	–	–
Secured by mortgages on immovable property	–	–	–	–	–	–
Exposures in default	–	20	–	–	–	20
Items associated with particularly high risk	–	–	–	–	–	–
Covered bonds	–	–	–	–	–	–
Claims on institutions and corporates with a short-term credit assessment	–	3	–	–	–	3
Collective investments undertakings	–	–	–	–	–	–
Equity exposures	–	–	–	–	–	–
Other exposures	–	–	–	–	–	–
<b>Total standardised approach</b>	<b>202</b>	<b>530</b>	<b>783</b>	<b>21</b>	<b>–</b>	<b>1,536</b>
<b>Total</b>	<b>2,432</b>	<b>2,733</b>	<b>8,070</b>	<b>772</b>	<b>13</b>	<b>14,020</b>

## CR1-A – Credit quality of exposures by exposure class and instrument

end of 2018	Gross carrying values of					Credit risk adjustment charges of the period	Net values
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs		
<b>USD million</b>							
Central governments or central banks	–	974	–	–	–	–	974
Institutions	–	2,282	–	–	–	–	2,282
Corporates	52	9,168	4	1	–	5	9,215
Of which: Specialised lending	–	–	–	–	–	–	–
Of which: SMEs	–	–	–	–	–	–	–
Retail	–	–	–	–	–	–	–
Secured by real estate property	–	–	–	–	–	–	–
SMEs	–	–	–	–	–	–	–
Non-SMEs	–	–	–	–	–	–	–
Qualifying revolving	–	–	–	–	–	–	–
Other retail	–	–	–	–	–	–	–
SMEs	–	–	–	–	–	–	–
Non-SMEs	–	–	–	–	–	–	–
Equity	–	13	–	–	–	–	13
<b>Total IRB approach</b>	<b>52</b>	<b>12,437</b>	<b>4</b>	<b>1</b>	<b>–</b>	<b>5</b>	<b>12,484</b>
Central governments or central banks	–	1	–	–	–	–	1
Regional governments or local authorities	–	–	–	–	–	–	–
Public sector entities	–	81	–	–	–	–	81
Multilateral development banks	–	11	–	–	–	–	11
International organisations	–	–	–	–	–	–	–
Institutions	–	356	–	–	–	–	356
Corporates	20	1,070	–	6	–	6	1,064
Of which: SMEs	–	–	–	–	–	–	–
Retail	–	–	–	–	–	–	–
Of which: SMEs	–	–	–	–	–	–	–
Secured by mortgages on immovable property	–	–	–	–	–	–	–
Of which: SMEs	–	–	–	–	–	–	–
Exposures in default	20	–	–	–	–	–	20
Items associated with particularly high risk	–	–	–	–	–	–	–
Covered bonds	–	–	–	–	–	–	–
Claims on institutions and corporates with a short-term credit assessment	–	3	–	–	–	–	3
Collective investments undertakings	–	–	–	–	–	–	–
Equity exposures	–	–	–	–	–	–	–
Other exposures	–	–	–	–	–	–	–
<b>Total standardised approach</b>	<b>20</b>	<b>1,522</b>	<b>–</b>	<b>6</b>	<b>–</b>	<b>6</b>	<b>1,536</b>
<b>Total</b>	<b>72</b>	<b>13,959</b>	<b>4</b>	<b>7</b>	<b>–</b>	<b>11</b>	<b>14,020</b>
Of which: Loans	72	6,685	4	6	–	11	6,747
Of which: Debt securities	–	77	–	–	–	–	77
Of which: Off- balance-sheet exposures	–	6,066	–	1	–	1	6,065

## CR1-B – Credit quality of exposures by industry or counterparty types

end of 2018	Gross carrying values of					Credit risk adjustment charges of the period	Net values
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs		
<b>USD million</b>							
Agriculture, forestry and fishing	–	7	–	–	–	–	7
Mining and quarrying	25	270	4	–	–	4	291
Manufacturing	–	1,786	–	7	–	7	1,779
Electricity, gas, steam and air conditioning supply	–	331	–	–	–	–	331
Water supply	–	12	–	–	–	–	12
Construction	–	4	–	–	–	–	4
Wholesale and retail trade	–	533	–	–	–	–	533
Transport and storage	–	351	–	–	–	–	351
Accommodation and food service activities	26	29	–	–	–	–	55
Information and communication	–	1,945	–	–	–	–	1,945
Real estate activities	16	14	–	–	–	–	30
Professional, scientific and technical activities	–	49	–	–	–	–	49
Administrative and support service activities	–	715	–	–	–	–	715
Public administration and defence, compulsory social security	–	1,020	–	–	–	–	1,020
Education	–	–	–	–	–	–	–
Human health services and social work activities	–	96	–	–	–	–	96
Arts, entertainment and recreation	–	137	–	–	–	–	137
Financial and insurance activities	5	6,660	–	–	–	–	6,665
Other services	–	–	–	–	–	–	–
<b>Total</b>	<b>72</b>	<b>13,959</b>	<b>4</b>	<b>7</b>	<b>–</b>	<b>11</b>	<b>14,020</b>

## CR1-C – Credit quality of exposures by geography

end of 2018	Gross carrying values of					Credit risk adjustment charges	Net values
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs		
<b>USD million</b>							
UK	–	5,475	–	6	–	6	5,469
<i>of which England and Wales<sup>1</sup></i>	–	5,475	–	6	–	6	5,469
Europe	49	6,316	–	1	–	1	6,364
<i>of which France</i>	–	2,109	–	–	–	–	2,109
Americas	14	1,546	–	–	–	–	1,560
Asia	–	442	–	–	–	–	442
Africa & Middle East	9	180	4	–	–	4	185
Other geographical areas	–	–	–	–	–	–	–
<b>Total</b>	<b>72</b>	<b>13,959</b>	<b>4</b>	<b>7</b>	<b>–</b>	<b>11</b>	<b>14,020</b>

<sup>1</sup> All regions are shown plus any individual country where its exposure is greater than 10% of the total

## CR1-D – Ageing of past-due exposures

end of 2018	Gross carrying values					
(USD million)	≤ 30 days	> 30 days ≤ 60 days	> 60 days ≤ 90 days	> 90 days ≤ 180 days	> 180 days ≤ 1 year	> 1 year
Loans	–	–	–	–	–	714
Debt securities	–	–	–	–	–	–
<b>Total exposures</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>714</b>

'Past due' and 'Impaired' are described in Note 2 Significant Accounting Policies on page 55-58 of the 2018 Annual Report.

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## CR1-E – Non-performing and forborne exposures

end of 2018

(USD million)	Of which performing but past due > 30 days and <= 90 days		Of which performing forborne		Of which defaulted	
	010		020	060	090	
Debt securities	-	-	-	-	-	-
Loans and advances	52,488	-	-	735	709	-
Off-balance-sheet exposures – (Loan commitments given)	5,576	-	-	-	-	-



Gross carrying amount of performing and non-performing exposures		Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
		Of which non-performing		On performing exposures		On non-performing exposures	
Of which impaired	Of which forborne		Of which forborne		Of which forborne		
100	110	120	130		140		170 + 180
-	-	-	-	-	-	-	-
8	-	3	-	692	-	25	-
-	-	2	-	-	-	-	-

## CR2-A – Changes in the stock of general and specific credit risk adjustments

end of 2018 (USD million)	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
1 <b>Opening balance</b>	682	1
2 Increases due to amounts set aside for estimated loan losses during the period	17	6
3 Decreases due to amounts reversed for estimated loan losses during the period	(15)	(6)
4 Decreases due to amounts taken against accumulated credit risk adjustments	(3)	-
5 Transfers between credit risk adjustments	-	-
6 Impact of exchange rate differences	(2)	1
7 Business combinations, including acquisitions and disposals of subsidiaries	-	-
8 Other adjustments	14	-
9 <b>Closing balance</b>	692	3
10 Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	-	-
11 Specific credit risk adjustments directly recorded to the statement of profit or loss	1	-

Specific Credit Risk Adjustments: The movement on provision of all impaired loans (including Stage 3 assets) is reported under specific credit risk adjustments.

General Credit Risk Adjustments: The movement on provision of loans those classified Stage 1 and Stage 2 as per IFRS 9

categorization is reported under general credit risk adjustments. With IFRS 9 implemented in 2018, the general credit risk balances are reported for the first time in the year.

## CR2-B – Changes in the stock of defaulted and impaired loans and debt securities

end of 2018	Gross carrying value defaulted exposures
<b>USD million</b>	
<b>Opening balance</b>	156
Loans and debt securities that have defaulted or impaired since the last reporting period	41
Returned to non-defaulted status	-
Amounts written off	-
Other changes	(125)
<b>Closing balance</b>	<b>72</b>

## CR3 – CRM techniques – Overview

end of 2018	Exposures unsecured – Carrying amount	Exposures secured – Carrying amount	Exposures secured by		
			Collateral	Financial guarantees	Credit derivatives
<b>USD million</b>					
Total loans	4,075	2,672	2,596	75	-
Total debt securities	77	-	-	-	-
<b>Total exposures</b>	<b>4,152</b>	<b>2,672</b>	<b>2,596</b>	<b>75</b>	<b>-</b>
Of which defaulted	67	-	-	-	-

## CR4 – Standardised approach – Credit risk exposure and CRM effects

Exposure classes	Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RWA density	
	On-balance- sheet amount	Off-balance- sheet amount	On-balance- sheet amount	Off-balance- sheet amount	RWA	RWA density
<b>end of 2018 (USD million, except where indicated)</b>						
Central governments or central banks	1	–	1	–	1	100%
Regional government or local authorities	–	–	–	–	–	–
Public sector entities	81	–	44	–	44	100%
Multilateral development banks	–	11	–	1	1	100%
International organisations	–	–	–	–	–	–
Institutions	356	–	356	66	135	32%
Corporates	624	446	586	270	712	83%
Retail	–	–	–	–	–	–
Secured by mortgages on immovable property	–	–	–	–	–	–
Exposures in default	20	–	20	–	20	100%
Higher-risk categories	–	–	–	–	–	–
Covered bonds	–	–	–	–	–	–
Claims on institutions and corporates with a short-term credit assessment	3	–	3	–	2	67%
Collective investment undertakings	–	–	–	–	–	–
Equity	–	–	–	–	–	–
Other items	–	–	–	–	–	–
<b>Total</b>	<b>1,085</b>	<b>457</b>	<b>1,010</b>	<b>337</b>	<b>915</b>	<b>68%</b>

## CR5 – Standardised approach – Exposures by asset classes and risk weights

Exposure classes	0%	2%	4%	10%	20%
<b>2018 (USD million)</b>					
Central governments or central banks	–	–	–	–	–
Regional government or local authorities	–	–	–	–	–
Public sector entities	–	–	–	–	–
Multilateral development banks	–	–	–	–	–
International organisations	–	–	–	–	–
Institutions	–	66	–	–	169
Corporates	–	–	–	–	87
Retail	–	–	–	–	–
Secured by mortgages on immovable property	–	–	–	–	–
Exposures in default	–	–	–	–	–
Higher-risk categories	–	–	–	–	–
Covered bonds	–	–	–	–	–
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–
Equity	–	–	–	–	–
Other items	–	–	–	–	–
<b>Total</b>	<b>–</b>	<b>66</b>	<b>–</b>	<b>–</b>	<b>256</b>

											Risk weight		
35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	Of which unrated	
-	-	-	-	1	-	-	-	-	-	-	1	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	44	-	-	-	-	-	-	44	44	
-	1	-	-	-	-	-	-	-	-	-	1	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	172	-	-	15	-	-	-	-	-	-	422	67	
-	164	-	-	589	16	-	-	-	-	-	856	390	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	20	-	-	-	-	-	-	20	20	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	3	-	-	-	-	-	-	-	-	-	3	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	340	-	-	669	16	-	-	-	-	-	1,347	521	

## CR6 – IRB approach – Credit risk exposures by portfolio and PD range

end of 2018	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF	Average CCF	EAD post-CRM and post-CCF	Average PD
<b>(USD million, except where indicated)</b>					
<b>CENTRAL GOVERNMENTS &amp; CENTRAL BANKS</b>					
0.00% to <0.15%	105	410	1.00	484	0.04
0.15% to <0.25%	38	17	–	38	0.22
0.25% to <0.50%	–	–	–	–	–
0.50% to <0.75%	–	29	1.00	29	0.64
0.75% to <2.50%	375	–	–	375	1.10
2.50% to <10.00%	–	–	–	–	–
10.00% to <100.00%	–	–	–	–	–
100.00% (Default)	–	–	–	–	–
<b>Sub-total</b>	<b>518</b>	<b>456</b>	<b>1.00</b>	<b>926</b>	<b>0.49</b>
<b>INSTITUTION</b>					
0.00% to <0.15%	2,232	6	1.00	2,287	0.05
0.15% to <0.25%	26	–	–	26	0.22
0.25% to <0.50%	–	–	–	–	–
0.50% to <0.75%	14	–	–	14	0.64
0.75% to <2.50%	4	–	–	4	1.89
2.50% to <10.00%	–	–	–	–	–
10.00% to <100.00%	–	–	–	–	–
100.00% (Default)	–	–	–	–	–
<b>Sub-total</b>	<b>2,276</b>	<b>6</b>	<b>1.00</b>	<b>2,331</b>	<b>0.06</b>
<b>CORPORATES</b>					
0.00% to <0.15%	3,310	1,759	0.59	1,788	0.08
0.15% to <0.25%	81	620	0.55	445	0.22
0.25% to <0.50%	344	147	0.56	430	0.37
0.50% to <0.75%	4	41	0.55	28	0.64
0.75% to <2.50%	46	296	0.55	240	1.16
2.50% to <10.00%	214	2,285	0.55	1,523	6.30
10.00% to <100.00%	22	–	1.00	7	16.50
100.00% (Default)	51	–	–	51	100.00
<b>Sub-total</b>	<b>4,072</b>	<b>5,148</b>	<b>0.56</b>	<b>4,512</b>	<b>3.47</b>
<b>Total (all portfolios)</b>	<b>6,866</b>	<b>5,610</b>	<b>0.60</b>	<b>7,769</b>	<b>2.09</b>

	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjustments and provisions
	9	0.5925	1.70	81	17%	-	-
	2	0.5200	1.07	15	39%	-	-
	-	-	-	-	-	-	-
	3	1.0000	2.47	53	183%	-	-
	1	0.5550	1.00	937	250%	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	<b>15</b>	<b>0.5872</b>	1.42	<b>1,086</b>	117%	-	-
	88	0.5815	1.02	482	21%	1	-
	5	0.7267	1.00	19	73%	-	-
	-	-	-	-	-	-	-
	1	1.0000	1.00	26	186%	-	-
	4	1.0000	1.00	10	250%	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	<b>98</b>	<b>0.5863</b>	1.02	<b>537</b>	23%	<b>1</b>	-
	103	0.5456	2.58	690	39%	1	-
	31	0.6451	3.13	361	81%	1	-
	32	0.5129	2.07	286	67%	1	-
	16	0.9972	2.07	48	171%	-	-
	33	0.4338	3.92	280	117%	1	-
	272	0.3780	2.93	2,237	147%	32	-
	5	0.9952	2.29	35	500%	1	-
	13	0.7533	2.48	51	100%	-	-
	<b>505</b>	<b>0.4957</b>	2.77	<b>3,988</b>	88%	<b>50</b>	<b>6</b>
	<b>639</b>	<b>0.5338</b>	2.08	<b>5,611</b>	72%	<b>37</b>	<b>6</b>

## CR7 – IRB approach – Effect on the RWAs of credit derivatives used as CRM techniques

	2018	
end of 2018 (USD million)	Pre-credit derivatives RWA	Actual RWA
<b>Exposures under FIRB</b>		
Central governments and central banks	–	–
Institutions	–	–
Corporates – SMEs	–	–
Corporates – Specialised lending	–	–
Corporates – Other	–	–
<b>Exposures under AIRB</b>		
Central governments and central banks	1,105	1,086
Institutions	526	537
Corporates – SMEs	–	–
Corporates – Specialised lending	–	–
Corporates – Other	3,999	3,988
Retail – Secured by real estate SMEs	–	–
Retail – Secured by real estate non- SMEs	–	–
Retail – Qualifying revolving	–	–
Retail – Other SMEs	–	–
Retail – Other non-SMEs	–	–
Equity IRB	45	45
Other non credit obligation assets	235	235
<b>Total</b>	<b>5,910</b>	<b>5,891</b>

## CR8 – RWA flow statements of credit risk exposures under the IRB approach

	RWA amounts	Capital requirements
<b>2018</b>		
<b>USD million</b>		
<b>RWAs as at the end of the previous reporting period</b>	<b>6,394</b>	<b>512</b>
Asset size	(989)	(79)
Asset quality	(162)	(13)
Model updates	–	–
Methodology and policy	605	48
Acquisitions and disposals	–	–
Foreign exchange movements	–	–
Other	–	–
<b>RWAs as at the end of the reporting period</b>	<b>5,848</b>	<b>468</b>



## CR9 – IRB approach – Backtesting of PD per exposure class

2018	PD range (%)	External rating equivalent	Weighted average PD (%)	Arithmetic average PD by obligors (%)	Number of obligors	
					End of previous year	End of the year
<b>CENTRAL GOVERNMENTS &amp; CENTRAL BANKS</b>						
	0.00 to <= 0.021	AAA	0.02%	0.02%	1	1
	> 0.021 to <= 0.027	AA+	0.02%	0.02%	1	1
	> 0.027 to <= 0.034	AA	0.03%	0.03%	2	1
	> 0.034 to <= 0.044	AA-	0.04%	0.04%	2	3
	> 0.044 to <= 0.056	A+	0.05%	0.05%	-	1
	> 0.056 to <= 0.068	A	-	-	-	-
	> 0.068 to <= 0.097	A-	-	-	-	-
	> 0.097 to <= 0.167	BBB+	0.13%	0.13%	2	2
	> 0.167 to <= 0.285	BBB	0.22%	0.22%	2	2
	> 0.285 to <= 0.487	BBB-	0.37%	0.37%	3	-
	> 0.487 to <= 0.839	BB+	0.64%	0.64%	-	3
	> 0.839 to <= 1.442	BB	1.10%	1.10%	2	1
	> 1.442 to <= 2.478	BB-	-	-	3	-
	> 2.478 to <= 4.259	B+	-	-	1	-
	> 4.259 to <= 7.311	B	-	-	1	-
	> 7.311 to <= 12.550	B-	-	-	2	-
	> 12.550 to <= 21.543	CCC+	-	-	-	-
	> 21.543 to <= 100	CCC to C	-	-	-	-
<b>INSTITUTIONS</b>						
	0.00 to <= 0.021	AAA	-	-	5	7
	> 0.021 to <= 0.027	AA+	-	-	-	-
	> 0.027 to <= 0.034	AA	-	-	1	-
	> 0.034 to <= 0.044	AA-	0.04%	0.04%	12	14
	> 0.044 to <= 0.056	A+	0.05%	0.05%	10	10
	> 0.056 to <= 0.068	A	0.06%	0.06%	25	27
	> 0.068 to <= 0.097	A-	0.07%	0.07%	10	10
	> 0.097 to <= 0.167	BBB+	0.13%	0.13%	9	16
	> 0.167 to <= 0.285	BBB	0.22%	0.22%	9	5
	> 0.285 to <= 0.487	BBB-	0.37%	0.37%	6	4
	> 0.487 to <= 0.839	BB+	0.64%	0.64%	2	1
	> 0.839 to <= 1.442	BB	0.00%	0.00%	3	-
	> 1.442 to <= 2.478	BB-	1.89%	1.89%	2	3
	> 2.478 to <= 4.259	B+	-	-	2	-
	> 4.259 to <= 7.311	B	-	-	-	-
	> 7.311 to <= 12.550	B-	9.58%	9.58%	1	1
	> 12.550 to <= 21.543	CCC+	-	0.00%	-	-
	> 21.543 to <= 100	CCC to C	-	-	-	-
<b>CORPORATES</b>						
	0.00 to <= 0.021	AAA	-	-	-	-
	> 0.021 to <= 0.027	AA+	-	-	-	-
	> 0.027 to <= 0.034	AA	-	-	7	-
	> 0.034 to <= 0.044	AA-	-	-	13	-
	> 0.044 to <= 0.056	A+	0.05%	0.05%	33	10
	> 0.056 to <= 0.068	A	0.06%	0.06%	36	25
	> 0.068 to <= 0.097	A-	0.07%	0.07%	49	33
	> 0.097 to <= 0.167	BBB+	0.13%	0.13%	64	35
	> 0.167 to <= 0.285	BBB	0.22%	0.22%	49	31
	> 0.285 to <= 0.487	BBB-	0.37%	0.37%	42	32
	> 0.487 to <= 0.839	BB+	0.64%	0.64%	18	16
	> 0.839 to <= 1.442	BB	1.10%	1.10%	17	18
	> 1.442 to <= 2.478	BB-	1.89%	1.89%	15	15
	> 2.478 to <= 4.259	B+	3.25%	3.25%	48	100
	> 4.259 to <= 7.311	B	5.58%	5.58%	89	102
	> 7.311 to <= 12.550	B-	9.58%	9.58%	51	70
	> 12.550 to <= 21.543	CCC+	16.44%	16.44%	16	3
	> 21.543 to <= 100	CCC to C	99.95%	90.43%	15	15

In the year 2018, there were 15 defaulted obligors.

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**CR10 – IRB (specialised lending and equities)**

end of 2018 (USD million, except where indicated)	On-balance- sheet amount	Off-balance- sheet amount	Risk weight	Exposure amount	RWA	Capital requirements
<b>Equities under the simple risk-weighted approach</b>						
<b>Regulatory categories</b>						
Private equity exposures	–	–	190%	–	–	–
Exchange-traded equity exposures	3	–	290%	3	8	1
Other equity exposures	10	–	370%	10	37	3
<b>Total</b>	<b>13</b>	<b>–</b>		<b>13</b>	<b>45</b>	<b>4</b>

# Counterparty Credit Risk

## Overview

Counterparty credit risk arises from OTC and exchange-traded derivatives, repurchase agreements, securities lending and borrowing and other similar products and activities. The related credit risk exposures depend on the value of underlying market factors (eg. interest rates and foreign exchange rates), which can be volatile and uncertain in nature. CSi enters into derivative contracts in the normal course of business principally for market-making and positioning purposes, as well as for risk

management needs, including mitigation of interest rate, foreign currency, credit and other risks.

CSi calculates Exposure at Default ('EAD') for derivatives under the Counterparty Credit Risk Mark-to-market Method ('CCRMTM') approach. The CCRMTM calculation takes into account potential future credit exposure ('PFCE') and thus may generate exposures greater than the derivative net replacement values.

### CCR1 – Analysis of CCR exposure by approach

end of 2018	Notional	Replacement cost/current market value	Potential future-credit exposure	EEPE	Multiplier	EAD post-CRM	RWA
<b>(USD million, except where indicated)</b>							
Mark to market	-	23,629	55,378	-	-	56,951	36,090
Original exposure	-	-	-	-	-	-	-
Standardised approach	-	-	-	-	-	-	-
IMM (for derivatives and SFTs)	-	-	-	-	-	-	-
Of which securities financing transactions	-	-	-	-	-	-	-
Of which derivatives and long settlement transactions	-	-	-	-	-	-	-
Of which from contractual cross-product netting	-	-	-	-	-	-	-
Financial collateral simple method (for SFTs)	-	-	-	-	-	-	-
Financial collateral comprehensive method (for SFTs)	-	-	-	-	-	5,484	1,603
VaR for SFTs	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	<b>62,435</b>	<b>37,693</b>

### CCR2 – CVA capital charge

end of 2018	Exposure value	RWA
<b>USD million</b>		
Total portfolios subject to the advanced method	-	-
(i) VaR component (including the 3x multiplier)	-	-
(ii) SVaR component (including the 3x multiplier)	-	-
All portfolios subject to the standardised method	42,177	19,675
Based on the original exposure method	-	-
<b>Total subject to the CVA capital charge</b>	<b>42,177</b>	<b>19,675</b>

### CCR3 – Standardised approach – CCR exposures by regulatory portfolio and risk

Exposure classes	0%	2%	4%	10%	20%
<b>2018 (USD million)</b>					
Central governments or central banks	33	–	–	–	–
Regional government or local authorities	–	–	–	–	–
Public sector entities	–	–	–	–	6
Multilateral development banks	250	–	–	–	39
International organisations	4	–	–	–	–
Institutions	–	25,296	7,377	–	1,726
Corporates	–	–	–	–	1,094
Retail	–	–	–	–	–
Institutions and corporates with a short-term credit assessment	–	–	–	–	2,089
Other items	–	–	–	–	–
<b>Total</b>	<b>287</b>	<b>25,296</b>	<b>7,377</b>	<b>–</b>	<b>4,954</b>

	Risk weight						Total	Of which unrated
	50%	70%	75%	100%	150%	Others		
-	-	-	2	-	-	-	35	2
-	-	-	-	-	-	-	-	-
-	-	-	347	-	-	-	353	352
22	-	-	2	-	-	-	313	2
-	-	-	-	-	-	-	4	4
6,801	-	-	10	-	-	-	41,210	26,946
101	-	-	1,589	17	-	-	2,801	1,507
-	-	-	-	-	-	-	-	-
65	-	-	61	-	-	-	2,215	61
-	-	-	-	-	-	-	-	-
<b>6,989</b>	<b>-</b>	<b>-</b>	<b>2,011</b>	<b>17</b>	<b>-</b>	<b>-</b>	<b>46,931</b>	<b>28,874</b>

## CCR4 – IRB approach – CCR exposures by portfolio and PD scale

end of 2018  
(USD million, unless otherwise indicated)

	EAD post-CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
<b>CENTRAL GOVERNMENTS &amp; CENTRAL BANKS</b>							
<b>PD scale</b>							
0.00% to <0.15%	209	0.02	17	0.53	3.65	44	21%
0.15% to <0.25%	831	0.22	2	0.52	1.44	369	44%
0.25% to <0.50%	–	–	1	–	–	–	–
0.50% to <0.75%	–	–	–	–	–	–	–
0.75% to <2.50%	–	–	–	–	–	–	–
2.50% to <10.00%	2	9.58	1	0.52	1.50	4	200%
10.00% to <100.00%	–	–	–	–	–	–	–
100.00% (Default)	–	–	–	–	–	–	–
<b>Sub-total</b>	<b>1,042</b>	<b>0.20</b>	<b>21</b>	<b>0.52</b>	<b>1.89</b>	<b>417</b>	<b>40%</b>
<b>INSTITUTIONS</b>							
0.00% to <0.15%	27,874	0.07	223	0.56	3.07	13,221	47%
0.15% to <0.25%	914	0.22	35	0.56	4.78	1,060	116%
0.25% to <0.50%	826	0.37	31	0.57	3.48	1,025	124%
0.50% to <0.75%	232	0.64	20	0.93	1.42	412	178%
0.75% to <2.50%	103	1.82	17	0.95	2.00	293	284%
2.50% to <10.00%	107	4.86	20	0.74	3.63	310	290%
10.00% to <100.00%	25	28.17	2	0.56	4.98	90	360%
100.00% (Default)	–	–	–	–	0.00	–	–
<b>Sub-total</b>	<b>30,081</b>	<b>0.13</b>	<b>348</b>	<b>0.57</b>	<b>3.12</b>	<b>16,411</b>	<b>55%</b>
<b>CORPORATES</b>							
0.00% to <0.15%	9,259	0.06	2,316	0.55	2.81	3,575	39%
0.15% to <0.25%	752	0.22	495	0.54	2.42	502	67%
0.25% to <0.50%	1,035	0.37	137	0.52	3.43	916	89%
0.50% to <0.75%	1,212	0.64	105	0.57	1.72	1,397	115%
0.75% to <2.50%	3,988	1.43	316	0.53	2.71	6,418	161%
2.50% to <10.00%	791	4.71	256	0.50	2.62	1,519	192%
10.00% to <100.00%	–	16.44	1	0.41	3.28	–	–
100.00% (Default)	–	–	–	–	–	–	–
<b>Sub-total</b>	<b>17,037</b>	<b>0.67</b>	<b>3,626</b>	<b>0.54</b>	<b>2.72</b>	<b>14,327</b>	<b>84%</b>
<b>Total (all portfolios)</b>	<b>48,159</b>	<b>0.32</b>	<b>3,995</b>	<b>0.56</b>	<b>2.95</b>	<b>31,155</b>	<b>65%</b>

## CCR5-A – Impact of netting and collateral held on exposure values

	Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
<b>2018 (USD million)</b>					
Derivatives	438,847	334,030	104,817	28,711	83,587
SFTs	49,023	8,930	40,093	35,672	5,316
Cross-product netting	–	–	–	–	–
<b>Total</b>	<b>487,870</b>	<b>342,960</b>	<b>144,910</b>	<b>64,383</b>	<b>88,903</b>

## CCR6 – Credit derivatives exposures

end of 2018	Credit derivative hedges		
	Protection bought	Protection sold	Other credit derivatives
<b>Notionals (USD million)</b>			
Single-name credit default swaps	6,272	2,177	419,190
Other	3,340	30	87,265
<b>Total notionals</b>	<b>9,612</b>	<b>2,207</b>	<b>506,455</b>
<b>Fair values (USD million)</b>			
Positive fair value (asset)	37	22	8,207
Negative fair value (liability)	(74)	(6)	(8,632)

## CCR8 – Exposures to CCPs

	2018	
	EAD post-CRM	RWA
<b>USD million</b>		
<b>Exposures to QCCPs (total)</b>	<b>–</b>	<b>1,149</b>
Exposures for trades at QCCPs (excluding initial margin and default fund contributions)	32,673	801
(i) OTC derivatives	–	–
(ii) Exchange-traded derivatives	32,603	800
(iii) SFTs	70	1
(iv) Netting sets where cross-product netting has been approved	–	–
Segregated initial margin	4,506	–
Non-segregated initial margin	–	–
Prefunded default fund contributions	845	348
Alternative calculation of own funds requirements for exposures	–	–
<b>Exposures to non-QCCPs (total)</b>	<b>–</b>	<b>–</b>
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions)	–	–
(i) OTC derivatives	–	–
(ii) Exchange-traded derivatives	–	–
(iii) SFTs	–	–
(iv) Netting sets where cross-product netting has been approved	–	–
Segregated initial margin	–	–
Non-segregated initial margin	–	–
Prefunded default fund contributions	–	–
Unfunded default fund contributions	–	–

# Securitisation

## Overview

A traditional securitisation is a structure where an underlying pool of assets is sold to a special purpose entity ('SPE'), which issues tranches of securities that are collateralised by, and which pay a return based on the underlying asset pool.

A synthetic securitisation is a tranching structure where the credit risk of an underlying pool of exposures is transferred, in whole or in part, through the use of credit derivatives or guarantees that serve to hedge the credit risk of the portfolio. In both traditional and synthetic securitisations, risk is dependent on the seniority of the retained interest and the performance of the underlying asset pool.

## Objectives in Relation to Securitisation Activity and CSI's Role

CSI acts as derivative counterparty for securitisation SPEs. Additionally, CSI holds securitisation positions in its Trading Book. CSI's key objective in relation to Trading Book securitisation is to meet clients' investment and divestment needs through its market making role in securitised products across all major collateral types.

CSI's exposure resulting from continuing involvement in transferred financial assets is generally limited to beneficial interests typically held in the form of instruments issued by SPEs that are senior, subordinated or equity tranches, or derivative instruments.

Beneficial interests, which are fair valued, include rights to receive all or portions of specified cash inflows received by an SPE, including, but not limited to, senior and subordinated shares of interest, principal, or other cash inflows to be 'passed through' or 'paid through' residual interests, whether in the form of debt or equity. Any changes in the fair value of these beneficial interests are recognised in CSI's financial statements.

## Risks Assumed and Retained

The key risks retained are related to the performance of the underlying assets. These risks are summarised in the securitisation 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 (see below).

Financial models project risk drivers based on market interest rates and volatility and macro-economic variables.

For re-securitisation risk, models take a 'look through' approach where they model the behaviour of the underlying securities based on their own collateral and then transmit that to the re-securitised position.

The impact of liquidity risk for securitisation products is embedded within CSI's historical simulation model through the incorporation of market data from stressed periods, and in the scenario framework through the calibration of price shocks to the same period.

Correlation and first-to-default products are valued using a correlation model which uses the market implied correlation and detailed market data such as constituent spread term structure and constituent recovery. The risks embedded in securitisation and re-securitisations are similar and include spread risk, recovery risk, default risk and correlation risk. The risks for different seniority of tranches will be reflected in the tranche price sensitivities to each constituent in the pools. The complexity of the correlation portfolio's risk lies in the level of convexity and inherent cross risk, for example, the risk of large spread moves, and the risk of spread and correlation moving together. The risk limit framework is designed to address the key risks for the correlation trading portfolio.

## Management of Credit and Market Risk

CSI has in place a comprehensive risk management process whereby the Front Office and Risk monitor positions and position changes, portfolio structure and trading activity and calculate a set of risk measures on a daily basis using risk sensitivities and loss modelling methodologies.

CSI has set limits for the purpose of managing its risk in relation to securitisations and re-securitisations. These limits cover exposure measures, risk sensitivities, VaR and capital measures with the majority monitored on a daily basis.

Retained Banking Book exposures for transactions are risk managed on the same basis as similar Trading Book transactions. Other transactions are managed in line with their individual structural or parameter requirements.

Where counterparty credit risk exposure is identified for a particular transaction, there is a requirement for it to be approved through normal credit risk management processes with collateral taken as required. CSI may also use various proxies including corporate single name and index hedges to mitigate the price and spread risks to which it is exposed. Hedging decisions are made by the trading desk based on current market conditions and will be made in consultation with Risk, requiring approval under CSI's pre-trade approval governance process.

Risk monitors portfolio composition by capital structure and collateral type on a daily basis with subordinate exposure and each collateral type subject to separate risk limits. In addition, the internal risk methodology is designed such that risk charges are based on the seniority the particular security holds in the capital structure, the less senior the bond the higher the risk charges.



## Credit Risk Mitigation

There are no instances where CSi has applied credit risk mitigation approaches to Banking Book securitisation or re-securitisation exposures. CSi does not typically retain material servicing responsibilities from securitisation activities.

In the normal course of business, CSi may hold tranches which have a monoline guarantee. No benefit from these guarantees is currently included in the calculation of regulatory capital.

## Calculation of RWA

Securities are classified by the nature of the collateral (eg. commercial mortgages and corporate loans) and the seniority each security has in the capital structure (eg. senior, mezzanine, subordinate), which in turn will be reflected in the transaction risk assessment.

For Trading Book securitisations, specific risk of securitisation transactions is calculated using the IRB or Standardised Approach as applicable to the underlying asset type of the securitisation position; general market risk of securitisations is captured in market risk models.

For Banking Book securitisations, the RWA are calculated under the available IRB approaches.

## Accounting Policies

The accounting policy with respect to special purpose entities and recognition of gains on sale for securitisations is described in

the Significant Accounting Policies Note of the CSi 2018 Annual Report, with further information provided in the Interests in Other Entities Note.

The accounting policy with respect to valuation of securitisation positions is described in the Financial Instruments Note of the CSi 2018 Annual Report. The valuation of assets awaiting securitisation follows the same policies as for other assets, as described in the above Note. The assignment of those assets awaiting securitisation to the banking or trading book follows the same policies as for other assets, further described in the Notes to the CSi 2018 Annual Report.

The policies for recognising liabilities on the balance sheet for arrangements that could require the institution to provide financial support for securitised assets follow the same policies as for other provisions and financial guarantees. These policies are described in the Significant Accounting Policies Note of the CSi 2018 Annual Report.

## Trading Book Securitisation Exposures

There was USD 344m of synthetic securitisation positions outstanding at 31 December 2018 that are held in the Trading Book at that date. These were classified as loans to corporates or SMEs. Unrated positions of USD 62m were deducted from capital.

There were no losses, impairments or past due items in relation to securitisation positions in the Trading Book exposures as at 31 December 2018.

### Outstanding exposures securitised – Banking Book

end of 2018	Sponsor	Other role		Total
		Traditional	Synthetic	
<b>USD million</b>				
Commercial mortgages	–	388	–	388
Loans to corporates or SMEs	–	–	–	–
Covered bonds	–	–	–	–
<b>Total</b>	<b>0</b>	<b>388</b>	<b>0</b>	<b>388</b>

## Securitisation exposures purchased or retained – Trading Book

end of 2018	Traditional	Synthetic
<b>USD million</b>		
Residential mortgages	–	–
Commercial mortgages	–	–
Loans to corporates or SMEs	–	344
Consumer loans	–	–
Other assets	–	–
<b>Total</b>	<b>–</b>	<b>344</b>

## Securitisation and re-securitisation exposures by regulatory capital approach – Trading Book

end of 2018	Securitisation exposure		Re-securitisation exposure		Total	
	EAD – purchased or retained	RWA	EAD – purchased or retained	RWA	EAD – purchased or retained	RWA
<b>USD million</b>						
Ratings-based approach (RBA)	344	850	–	–	344	850
Supervisory formula approach (SFA)	–	–	–	–	–	–
<b>Total IRB approaches</b>	<b>344</b>	<b>850</b>	<b>–</b>	<b>–</b>	<b>344</b>	<b>850</b>
Standardised approach	–	–	–	–	–	–
<b>Total</b>	<b>344</b>	<b>850</b>	<b>–</b>	<b>–</b>	<b>344</b>	<b>850</b>

## Securitisation and re-securitisation exposures under RBA by rating grade – Trading Book

end of 2018	Securitisation exposure		Re-securitisation exposure		Total	
	EAD – purchased or retained	RWA	EAD – purchased or retained	RWA	EAD – purchased or retained	RWA
<b>USD million</b>						
AAA	8	1	–	–	8	1
AA	101	11	–	–	101	11
A	102	11	–	–	102	11
BBB	58	22	–	–	58	22
BB	6	21	–	–	6	21
B or lower or unrated	69	784	–	–	69	784
<b>Total</b>	<b>344</b>	<b>850</b>	<b>–</b>	<b>–</b>	<b>344</b>	<b>850</b>

## Securitisation and re-securitisation exposures under SFA by risk weight band – Trading Book

end of 2018	Securitisation exposure		Re-securitisation exposure		Total	
	EAD – purchased or retained	RWA	EAD – purchased or retained	RWA	EAD – purchased or retained	RWA
<b>USD million</b>						
0% – 10%	–	–	–	–	–	–
>10% – 50%	–	–	–	–	–	–
>50% – 100%	–	–	–	–	–	–
>100% – 650%	–	–	–	–	–	–
> 650% – 1250%	–	–	–	–	–	–
<b>Total</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

# Market Risk

## Overview

CSi has policies and processes in place to ensure that market risk is captured, accurately modelled and reported, and effectively managed. Trading and non-trading portfolios are managed at various organisational levels, from the overall risk positions at entity level down to specific portfolios. CSi uses market risk measurement and management methods in line with industry standards. These include general tools capable of calculating comparable exposures across CSi's many activities and focused tools that can specifically model unique characteristics of certain instruments or portfolios. The tools are used for internal market

risk management, internal market risk reporting and external disclosure purposes. The principal measurement methodologies are VaR and scenario analysis. The risk management techniques and policies are regularly reviewed to ensure they remain appropriate.

## Market Risk Capital Requirements

The following table details the components of CSi's capital requirement for market risk (Trading Book unless otherwise stated):

### MR1 – Market risk under standardized approach

end of 2018	RWA	Capital requirements
<b>Risk-weighted asset (USD million)</b>		
<b>Outright products</b>		
Interest rate risk (general and specific)	–	–
Equity risk (general and specific)	–	–
Foreign exchange risk	588	47
Commodity risk	–	–
<b>Options</b>		
Simplified approach	–	–
Delta-plus method	–	–
Scenario approach	–	–
Securitisation (specific risk)	72	6
<b>Total risk-weighted asset</b>	<b>661</b>	<b>53</b>

### MR2-A – Market risk capital requirements under IMA

(USD million)	2018		2017	
	RWAs	Capital requirements	RWAs	Capital requirements
<b>1 VaR (higher of values a and b)</b>	<b>1,851</b>	<b>148</b>	<b>1,093</b>	<b>87</b>
(a) Spot VaR	706	57	329	26
(b) Average of the daily VaR preceding 60 business days * multiplication factor	1,851	148	1,093	87
<b>2 SVaR (higher of values a and b)</b>	<b>2,372</b>	<b>190</b>	<b>1,803</b>	<b>144</b>
(a) Spot SVaR	1,013	81	543	43
(b) Average of the daily SVaR preceding 60 business days * multiplication factor	2,372	190	1,803	144
<b>3 IRC (higher of values a and b)</b>	<b>5,058</b>	<b>405</b>	<b>5,398</b>	<b>432</b>
(a) Spot IRC	5,058	405	4,257	341
(b) Average of the IRC number over the preceding 12 weeks	3,947	316	5,398	432
<b>4 Other<sup>1</sup></b>	<b>11,650</b>	<b>932</b>	<b>13,096</b>	<b>1,048</b>
<b>5 Total</b>	<b>20,931</b>	<b>1,675</b>	<b>21,390</b>	<b>1,711</b>

<sup>1</sup> Risk not in VaR add-on

The following tables detail the RWA flow statement of market risk exposures (Trading Book unless otherwise stated):

## MR2-B – RWA flow statements of market risk exposures under the IMA

(USD million)	VaR	SVaR	IRC	Compre- hensive risk measure	Other	Total RWAs	Total capital requirements
<b>1 RWAs at previous year end</b>	1,093	1,803	5,398	n/a	13,096	21,390	1,711
(1a) Regulatory adjustment	(39)	(65)	(1,141)	n/a	-	(1,245)	(100)
(1b) RWAs at YE2017 (spot-based)	1,054	1,739	4,257	n/a	13,096	20,146	1,612
2 Movement in risk levels	871	1,473	2,238	n/a	(588)	3,994	320
3 Model updates/changes	334	30	-	n/a	(431)	(67)	(5)
4 Methodology and policy	-	-	(1,437)	n/a	(426)	(1,863)	(149)
5 Acquisitions and disposals	-	-	-	n/a	-	-	-
6 Foreign exchange movements	-	-	-	n/a	-	-	-
7 Other	-	-	-	n/a	-	-	-
(8a) RWAs at YE2018 (spot-based)	2,260	3,241	5,058	n/a	11,650	22,209	1,777
(8b) Regulatory adjustment	(409)	(869)	-	n/a	-	(1,278)	(102)
<b>8 RWAs at the end of the reporting period</b>	1,851	2,372	5,058	n/a	11,650	20,931	1,675

## Risk Measurement and Management

Internal Models Approach ('IMA') models are used to quantify market risk capital requirements in the trading portfolio which includes those financial instruments treated as part of the Trading Book for regulatory capital purposes. The trading portfolio includes a majority of trading assets and liabilities, selected fair-valued positions of investment securities, other investments, other assets (mainly derivatives used for hedging, loans and real estate held-for-sale), short-term borrowings, long-term debt and other liabilities (mainly derivatives used for hedging).

CSi is active in most of the principal trading markets of the world, using the majority of common trading and hedging products, including derivatives such as swaps, futures, options and structured products (some of which are customised transactions using combinations of derivatives and executed to meet specific client or proprietary needs). CSi conducts its Trading Book activities primarily through the Global Markets, Asia Pacific and Investment Banking & Capital Markets divisions.

CSi provides listed and vanilla OTC options, structured OTC derivatives on indices, single stocks and hybrid underlyings and hedging equity products to clients globally. It participates as a market maker in the investment grade credit default swaps and secondary loans markets, trades in mortgage-backed and asset-backed products and provides underwriting services on loans. It trades local FX spot, bonds, interest rates derivatives and structured notes products for the developed markets currencies. It also provides client advisory services on M&A and conducts underwriting transactions across all main industry sectors in APAC and EMEA locations.

As a result of CSi's broad participation in products and markets, trading strategies are correspondingly diverse and exposures are generally spread across a range of risk factors and locations. Risks associated with the embedded derivative elements of CSi's structured products are actively monitored and managed on a portfolio basis as part of the overall trading portfolio and are reflected in all IMA-based measures.

## Scope of IMA Calculations: Criteria for Inclusion in the Trading Book

CSi falls within the scope of the CS group's Trading Book Policy. The policy sets out the principles for the classification of products between Trading and Banking Book for the purpose of regulatory capital and market risk measurement. Specifically, it sets out the criteria which must be met in order to allocate positions to the Trading Book. The policy is common to all entities within the CS group and adherence to its requirements is mandatory.

The criteria for Trading Book classification are, broadly, that the position must be a transferable or hedgeable financial instrument; that there must be trading intent or a hedging relationship with another Trading Book item; and that daily fair value methodology must be applied for regulatory and risk management purposes. The fair value methodology is itself the subject of policies, procedures and controls that exist separately as part of the overall valuation process operated across the CS group.

In addition to the policy document, the governance arrangements relating to the Trading Book classification, management and control incorporate a number of components. These include a Trading Book Eligibility Committee which is responsible for i) reviewing

and approving (or rejecting) proposed transfers between Trading and Banking Books, and ii) reviewing complex Trading/Banking Book classification decisions. Trading Book status is subject to re-validation by Product Control each year, and additionally on an ad-hoc basis when required.

Trading Book classification is one of the criteria for inclusion of positions in the scope of calculations for regulatory capital requirements under the IMA as defined in the IMA waiver.

## Internal Models Approach ('IMA') Framework

The key components of the market risk IMA framework are VaR (intended as both regulatory VaR and Stressed VaR) and IRC. This is complemented by a Risks Not In VaR ('RNIV') Framework.

Within CSi's model-based calculations of market risk, values measured during the period are summarised as follows:

in / end of	2018	2017
<b>MR3 – Regulatory VaR, stressed VaR and Incremental Risk Charge</b>		
<b>(USD million)</b>		
<b>Regulatory VaR (10 day 99%)</b>		
Maximum value	67	47
Average value	33	26
Minimum value	16	16
Period end	57	26
<b>Stressed VaR (10 day 99%)</b>		
Maximum value	348	200
Average value	58	42
Minimum value	28	17
Period end	81	43
<b>IRC (99.9%)</b>		
Maximum value	717	532
Average value	373	323
Minimum value	279	149
Period end	405	341

CSi received permission from the PRA to use internal models to calculate Trading Book market risk capital requirements under the IMA permission. CSi applies the IMA models to the majority of the positions in its Trading Book. CSi continues to seek regulatory approval for ongoing enhancements to the IMA methodologies where applicable. The VaR model does not cover all identified market risk types, and as such CSi also captures RNIV through capital add-ons. Credit correlation products (including ABS positions) are not fully covered by the VaR model approval. These positions are permitted to remain in VaR, but CSi is additionally required to hold capital under standard rules for specific risk as set out in the CRR.

CSi uses a historical simulation approach in modelling VaR. The VaR model used for both Regulatory and Risk Management

purposes is calculated as a 99th percentile measure using a 10-day holding period. Both measures use a 2-year data period which is updated weekly and apply exponential weighting with a time decay factor of 0.994 to provide sufficient responsiveness to market regime changes. For Regulatory Stressed VaR ('SVaR'), CSi uses a 99th percentile, one tailed confidence interval for a 1-year data period of financial stress without a time decay factor. No difference exists between the SVaR model used for management purposes and the model used for regulatory purposes.

The 10-day VaR is modelled directly using overlapping 10-day returns. There are two approaches used to incorporate Specific Risk:

- **Full Simulation approach:** This approach uses an individual risk factor for each security. Therefore, for each security, this approach incorporates both Specific Risk and General Risk within the same risk factor.
- **Regression approach:** This approach uses a common risk factor across related securities in conjunction with additional specific risk add-ons for each security. This modelling approach divides historical price variations into Specific and General market risk components.

Under the Full Simulation approach, scenario P&Ls incorporating both specific and general risk are aggregated in the Historical Simulation VaR. Under the Regression approach, scenario P&Ls corresponding to general risk are aggregated in the Historical Simulation VaR, while for each specific risk, a VaR is calculated by applying either a 1st or a 99th percentile historical move (depending on the direction of the position). Specific risk VaR components are aggregated with Historical Simulation VaR under a zero correlation assumption (square root sum of squares).

The CSi VaR model uses Full Revaluation, Partial Revaluation or Taylor Series approximation, depending on the individual portfolios and their respective degree of non-linearity. Full Revaluation and Partial Revaluation are the most accurate approaches and use the same Front Office valuation models that are used for fair value purposes:

- Under Full Revaluation, scenario P&L is calculated by re-evaluation for every historical scenario. Given the resulting computational cost, Full Revaluation is generally reserved for non-linear products with material dependence on multiple risk factors, or vanilla hedges against such products.
- Under Partial Revaluation, P&L is calculated by re-evaluation at the nodes of a grid of possible market moves. Scenario P&L is then calculated by interpolation over the grid. Partial Revaluation is an efficient and accurate approach for products with low dimensionality (in terms of the number of material risk drivers). Typically the grid has two dimensions, representing spot price and volatility.

The methods used to simulate the potential movements in risk factors are primarily dependent on the risk types. For risk types pertaining to equity prices, FX rates and volatilities, the returns are modelled as a function of proportional historical moves. For certain spread risks, the returns are modelled as a function of

absolute historical moves. For some risk types, such as interest rates, swap spreads and EM credit spreads, a mixed approach is used.

The SVaR is calculated as a 10-day 99th percentile with no time decay factor and uses a 1-year time period corresponding to significant financial stress for the legal entity's current portfolio. The SVaR measure is identical to the Regulatory VaR in the following aspects:

- 10-day VaR is modelled directly using overlapping 10-day returns.
- Use of the same individual VaR risk types and aggregation methodology.
- The same coverage of the positions/underlying securities using time series market data.
- The same set of relevant trading book positions.
- The same IT infrastructure.
- The same valuation approach.

The stress period chosen is reviewed on a monthly basis and includes all possible SVaR windows from 2006 on, staggered by one month. Regulatory SVaR is maximised for the average of the preceding 60 days of actual positions for all stressed windows within the review. The valuation approach used in selecting the maximising SVaR window is generally the same as for calculating Regulatory VaR. The only exception concerns Equity positions where the Regulatory VaR calculation uses Full Revaluation. Given the computational cost of calculating Full Revaluation over the twelve-year period from 2006 during SVaR window selection, Full Revaluation is used for the most recent two-year period and also a two-year period around the current SVaR window, and a sensitivity-based approximation is used in other periods. The appropriateness of this approach is monitored on a monthly basis by calculating the Full Revaluation and sensitivity-based approaches over the full twelve-year history for a single portfolio date.

The SVaR window for the CSi legal entity as of the December 2018 month-end assessment is 'November 2007 – October 2008'.

CSi imposes robust requirements around minimum data standards which ensure the accuracy and reliability of data and parameters used in the VaR model. CSi operates a global function responsible for data validation, aggregation & reporting, and has established operational procedures which are based on the policies outlined in the Market Risk and Enterprise Risk and Control Framework. The procedures describe the business process and controls applied to verify the completeness and accuracy of the system feeds received for sensitivities and key risk data

attributes. These controls include verifying the Market Risk data inputs received from upstream systems, validating the Market Risk sensitivities and performing reconciliations. The controls include automated reviews for data completeness, validation checks to ensure report completeness and accuracy, including review of breaches, back testing exception process review, large moves analysis, and report review. The controls are identified, documented, and are subjected to ongoing monitoring for effectiveness including supervisory oversight and control governance.

For any implementation of new/changed models, CSi relies on the standard change control processes overseen by a dedicated change function to review and sign-off changes to impacted systems prior to release.

CSi executes a T+1 process for validating data. Data delivery agreements are monitored by the Risk and Finance IT teams. The global data validation, aggregation & reporting function may modify the risk data to normalise it across the sources, enrich the data to infer internal model parameter inputs or additional attributes for reporting and MI purposes, etc. The function also makes adjustments for misbooking or valuation errors from front office valuation systems.

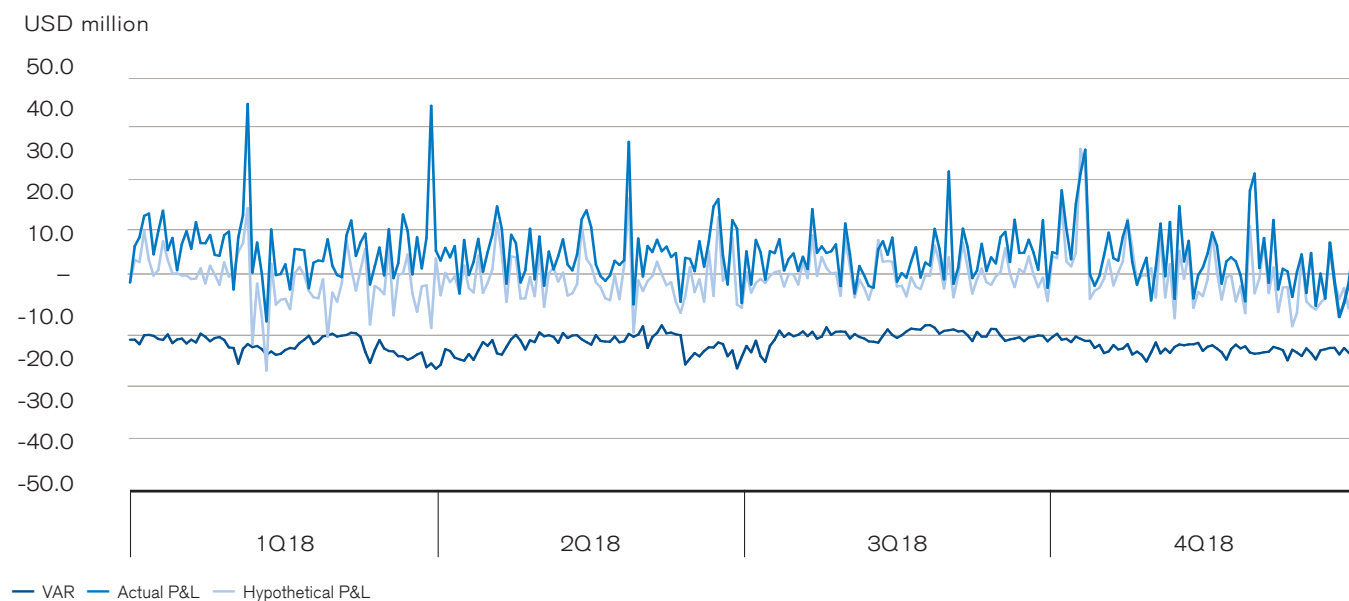
CSi employs a range of different control processes to help ensure that the models used for market risk remain appropriate over time. As part of these control processes, UK Model Performance Committee as the delegate committee of the UK Market Risk Committee reviews model performance and approve any new or amended models.

## Value at Risk Backtesting

Various techniques are used to assess the accuracy of the VaR model used for trading portfolios, including backtesting. In line with industry practice, CSi undertakes backtesting using actual and hypothetical daily trading revenues. Actual and hypothetical daily trading revenues are compared with a regulatory 99% VaR calculated using a one-day holding period. A backtesting exception occurs when the daily trading loss exceeds the daily VaR estimate.

For capital purposes, a backtesting multiplier is added for every backtesting exception over four in the prior rolling 12-month period. This is calculated using the higher number of exceptions under either actual or hypothetical daily trading revenues. The backtesting multiplier is equal to zero as CSi had two backtesting exception in 2018 (2017: one).

## MR4 – Backtesting VaR vs Actual/Hypothetical P&L



Date	Actual P&L	Hypothetical P&L	VaR	Exception Category	Exception Summary
06.02.18	\$(9.3)m	\$(21.1)m	\$17.3m	Hypothetical P&L	The Hypothetical P&L losses were due to extreme market movements for various equity indices in the Structured Equity business within the Global Markets division.
28.02.18	\$10.4m	\$(13.0)m	\$12.7m	Hypothetical P&L	The Hypothetical P&L losses were due to extreme market movements for various equity indices within the Structured Equity business across the APAC and Global Markets divisions.

## Incremental Risk Capital Charge

The Incremental Risk Charge ('IRC') capitalizes issuer default and migration risk in the trading book, such as bonds or credit default swaps, but excludes securitizations and correlation trading. CSi has received PRA approval to use the IRC model within the Specific Risk Capital Framework for the bank. CSi continues to seek regulatory approval for ongoing enhancements to the IRC methodology, and the IRC model is subject to regular reviews by PRA.

The IRC model assesses risk at 99.9% confidence level over a one-year time horizon assuming the Constant Position Assumption, i.e. a single liquidity horizon of one year. This corresponds to the most conservative assumption on liquidity that is available under current IRC regulatory rules.

The IRC portfolio model is a Merton-type portfolio model designed to calculate the cumulative loss at the 99.9% confidence level. The model's design is based on the same principles as industry standard credit portfolio models including the Basel II A-IRB model.

In 2017, CSi proposed to refine the capture of systematic risks in the IRC model by expanding the asset correlation framework into a multifactor set-up. Following PRA's approval, this model improvement has been taken live in 2018.

As part of the exposure aggregation model, stochastic recovery rates are used to capture recovery rate uncertainty, including the case of basis risks on default, where different instruments issued by the same issuer can experience different recovery rates.

To achieve the IRB soundness standard, CSi uses IRC parameters that are either based on the A-IRB reference data sets (migration matrices including PDs, LGDs, LGD correlation and volatility), or parameters based on other internal or external data qualifying under the IRB data quality criteria, such as data used for indices published by CSi.

## Scenario Analysis

Stress testing complements other risk measures by capturing CSi's exposure to unlikely but plausible events, which can be expressed through a range of significant moves across multiple

financial markets. The majority of scenario analysis calculations performed are specifically tailored toward the risk profile of particular businesses, and limits may be established if they are considered the most appropriate control. In addition, to identify areas of risk concentration and potential vulnerability to stress events at entity level, a set of scenarios is consistently applied across all businesses to assess the impact of significant, simultaneous movements across a broad range of markets and exposure classes.

Stress testing is a fundamental element of CSi's risk control framework, with results used in risk appetite discussions and strategic business planning, and to support the internal capital

adequacy assessment ('ICAAP'). Stress test scenarios are conducted on a regular basis and the results, trend information and supporting analysis are reported to the Board of Directors, senior management and business lines.

CSi's stress testing framework is governed through a dedicated steering committee that operates across the CS group. Scenarios can be defined with reference to historic events or based on forward-looking, hypothetical events that could impact CSi's positions, capital, or profitability. The scenarios are reviewed and updated as markets and business strategies evolve, and new scenarios are designed by the Risk division in collaboration with Global Research and business divisions.



# Operational Risk

## Overview

The Enterprise Risk and Control Framework ('ERCF') Policy sets out the principles and components for managing operational risk in CSI. The ERCF provides a structured approach to managing operational and compliance risks. It seeks to apply consistent standards and techniques for evaluating risks across CSI while providing individual businesses with sufficient flexibility to tailor specific components to their own needs, as long as they meet Group-wide minimum standards. The main components of the ERCF are described below.

## Risk Appetite

The ERCF risk appetite determines our approach to risk-taking and articulates the motivations for taking, accepting or avoiding certain types of risks or exposures.

## Risk Taxonomy

The ERCF risk taxonomy represents a unified and standardized catalogue of inherent non-financial risk definitions across operational and compliance risk. It provides a consistent approach to the identification and classification of these risks across both CSI and the Group.

## Internal Controls

The ERCF key controls are documented and assessed under a common controls assessment framework, ensuring that key controls are identified, documented, executed and assessed consistently and comprehensively, with a focus on the most significant risks and associated key controls. We utilize a comprehensive set of internal controls that are designed to ensure that our activities follow agreed policies and that processes operate as intended. Key controls are subject to independent testing to evaluate their effectiveness. The results of these tests are considered by other ERCF components, such as in the Risk and Control Self-Assessment ('RCSA') process.

## Metrics

The ERCF metrics are risk and control indicators that are used to monitor identified operational risks, compliance risks and controls over time. A key control indicator is defined as a metric that assesses and monitors the effectiveness of one or several controls. Minimum standards apply to the identification, selection, risk mapping approval, monitoring and escalation of metrics that are linked to the ERCF risk appetite and top ERCF risks. Key risk and control indicators may also be used as inputs into scenario analysis and capital allocation.

## Incident Data

Incidents describes the process in which we systematically collect, analyze and report data on operational and compliance risk incidents to ensure that we understand the reasons why they occurred and how controls can be improved to reduce the risk of future incidents. We focus both on incidents that result in economic losses and on events that provide information on potential control gaps, even if no losses occurred. We also collect and utilize available data on incidents at relevant peer firms to identify potential risks that may be relevant in the future, even if they have not impacted the legal entity. Incident data is also a key input for our operational risk capital models and other analytics.

## Risk and Control Self-Assessment

Enterprise risk and control assessment consolidates the assessment, review and challenge activities for operational, compliance and legal risks across all divisions and functions into a single framework and consists of the elements RCSA, compliance risk assessment and any associated legal risk assessment:

- Risk and control self-assessments ('RCSA') are comprehensive, bottom-up assessments of the key operational and compliance risks in each business and control function. The process of preparing RCSAs comprises a self-assessment of the relevant business line or functional risk profile based on the ERCF risk taxonomy classifying risks under a standardized approach. It covers an assessment of the inherent risks of each business and control function, provides an evaluation of the effectiveness of the controls in place to mitigate these risks, determines the residual risk ratings and requires a decision to either accept or remediate any residual risks. In the case of remediation, mitigating actions are defined and approved by management. While these are self-assessments, they are subject to independent review and challenge by relevant risk management functions to ensure that they have been conducted appropriately. RCSAs utilize other components of the ERCF, such as ERCF metrics and incidents, and they generate outputs that are used to manage and monitor risks.
- Compliance risk assessment is the process which provides the framework for the independent second line compliance function to formally assess the overall compliance and regulatory risks associated with a particular business unit or business activity. The results are used to identify potential or actual areas of risk in the business which also assists Compliance management in planning the compliance objectives to mitigate risks identified. This risk assessment consists of an analysis of the inherent risk and control effectiveness aligned to the compliance risk categories and is performed at the level of a risk unit. Quantitative metrics are leveraged wherever possible, supplementing the qualitative assessments. Upon completion of the assessment, ratings are established through a compliance divisional and Group-wide review and mitigating actions are identified as appropriate. The results of the compliance risk

assessment are presented to the Board and the Group's Audit Committee and the CSi Board of Directors.

- Legal risk assessment is a sub-assessment of the Group's RCSA with the objective to conduct an enhanced assessment of legal risks across the Group. The legal risk assessment is based on the principles defined for the RCSA program. The General Counsel function reviews the results of the legal risk assessments performed by business units. The legal risk assessment complements the RCSA process in providing an independent review and challenge process by the second line of defense.

## Reverse Stress Testing

Reverse stress testing is a complementary tool that introduces a more forward-looking element into the RCSA process. It assumes that a business has suffered an adverse outcome, such as a large operational risk loss, and requires consideration of the events that could have led to the result. As such, it allows for the consideration of risks beyond normal business expectations and it challenges common assumptions about the risk profile, the emergence of new risks or interactions between existing risks, as well as the performance of expected control and mitigation strategies.

## Top Risks

Top ERCF Risks are identified at the legal entity level and represent the most significant risks requiring senior management attention. They are generated through a combination of top-down assessment by senior management and a bottom-up process collating the main themes arising from the RCSA and compliance risk assessment processes. Where appropriate, remediation plans are put in place with ownership by senior management.

## Capital Modelling and Scenarios

CSi uses the Basic Indicator Approach to determine its Pillar 1 capital requirement in respect of operational risk.

Incremental capital requirements are determined as part of Pillar 2A through the use of an internal model which is based on the Advanced Measurement Approach used by CS Group. The operational risk model used for the Internal Capital Adequacy and Assessment Process estimates the capital required for operational risk at the 99.9% confidence level over a one-year period using a combination of internal loss data, external loss data, business environment and internal control factors, and scenario analysis. This scenario analysis includes an evaluation of CSi's potential exposure to infrequent but high-severity 'tail' events, such as unauthorised trading or severe business disruption.

The results from the model provide management with a more forward looking view of the operational risk profile in order to determine capital adequacy.

## Issues and Actions

Issues and action management encompasses a structured approach to responding to operational and compliance risk incidents and breaches of ERCF quantitative and qualitative risk appetite or metrics, as well as continuous monitoring of remediation actions against identified control issues. Further, the compliance and regulatory responses function consolidates and monitors issues and actions including audit, regulatory, self-identified and second line identified issues and actions. The operational risk incident management component includes a defined process for identifying, categorizing, investigating, escalating and remediating incidents. These reviews seek to assess the causes of control weaknesses, establish appropriate remediation actions and ascertain whether events have implications for other businesses or could have potential impact in the future. They can result in recommendations to impose restrictions on businesses while operational risk management processes and controls are improved. The breach component provides a methodology for evaluating breaches of quantitative and qualitative ERCF risk appetite statements. Its goal is to provide senior management with the information needed to make decisions on how to best remediate issues that fall outside agreed risk appetite levels.

## Change Assessments

Major strategic change programs also undergo independent ERCF change assessments by the operational risk function, leveraging the ERCF assessment framework to determine the potential impact of the change activity on the overall operational risk profile of the impacted area both during and after implementation.

## Conduct Risk

CSi seeks to promote responsible behaviour through the Code of Conduct, which provides a clear statement on the conduct standards and ethical values that we expect of our employees and members of the Board, so that we maintain and strengthen our reputation for integrity, fair dealing and measured risk-taking. In addition, our six conduct and ethics standards, which include client focus, meritocracy, stakeholder management, accountability, partner and transparency, are a key part of our effort to embed our core ethical values into our business strategy and the fabric of our organization.

The Code of Conduct and the set of Conduct and Ethics Standards are linked to the employee performance assessment and compensation processes.

## Technology Risk

Technology risk deserves particular attention given the complex technological landscape that covers our business model. Ensuring

that confidentiality, integrity and availability of information assets are protected is critical to our operations.

Technology risk is the risk that technology-related failures, such as service outages or information security incidents, may disrupt business. As a component of operational risk, technology risk is inherent not only in the Bank's IT assets, but also in the people and processes that interact with them including through dependency on third party suppliers and the worldwide telecommunications infrastructure. The Bank seeks to ensure that the data used to support key business processes and reporting is secure, complete, accurate, available, timely and meets appropriate quality and integrity standards. The Bank requires critical IT systems to be identified, secure, resilient and available and support our ongoing operations, decision making, communications and reporting. CSi systems must also have the capability, capacity, scalability and adaptability to meet current and future business objectives, the needs of the Bank's customers and regulatory and legal expectations. Failure to meet these standards and requirements may result in adverse events that could subject CSi to reputational damage, fines, litigation, regulatory sanctions, financial losses or loss of market share.

Technology risks are managed through our technology risk management program, business continuity management plan and business contingency and resiliency plans. Technology risks are included as part of our overall enterprise risk and control assessment based upon a forward-looking approach focusing on the most significant risks in terms of potential impact and likelihood.

Cyber risk, which is part of technology risk, is the risk that we will be compromised as a result of cyber-attacks, security breaches, unauthorized access, loss or destruction of data, unavailability of service, computer viruses or other events that could have an adverse security impact. Any such event could subject us to litigation or cause us to suffer a financial loss, a disruption of our businesses, liability to our clients, regulatory intervention or reputational damage. We could also be required to expend significant

additional resources to modify our protective measures or to investigate and remediate vulnerabilities or other exposures.

While CSi or the Group has not experienced any major impactful cyber incidents, we recognize that cyber risk represents a rapidly evolving and generally worsening external risk landscape. The financial industry continues to face cyber threats from a variety of actors who are driven by monetary, political and other motivations. We actively monitor external incidents and threats and assess and respond accordingly to any potential vulnerabilities that this may reveal. We are also an active participant in industry forums and information exchange initiatives and engage in regulatory consultation on this subject.

We have an enterprise-wide cybersecurity strategy to provide strategic guidance as part of our efforts to achieve an optimized end-to-end security and risk competence that enables a secure and innovative business environment, aligned with the Group's risk appetite. Our technology security team leverages a wide array of leading technology solutions and industry best practices to support our ability to maintain a secure perimeter and detect and respond to threats in real time.

We regularly assess the effectiveness of our key controls and we conduct ongoing employee training and awareness activities, including for key management personnel, in order to embed a strong cyber risk culture. As part of the ERCF, the CSi Board Risk Committee is given updates on the broader technology risk exposure

Senior management, including the CSi Board of Directors and its Risk Committee, are actively engaged and regularly informed on the extent of the threats and mitigations in place to manage cyber incidents. Related business continuity and response plans are rehearsed regularly at all levels. Significant incidents are escalated to the CSi Board Risk Committee together with lessons learned and mitigation plans.

# Reputational Risk

## Overview

CSi highly values its reputation and is fully committed to protecting it through a prudent approach to risk-taking, and responsible approach to business. This is achieved through use of dedicated processes, resources and policies focused on identifying, evaluating, managing and reporting potential reputational risks. This is also achieved through applying the highest standards of personal accountability and ethical conduct as set out in the CS Group Code of Conduct, and the firm's approach to Conduct and Ethics. CSi acknowledges that as a large global financial institution, with a wide range of businesses and stakeholders, it may be subject to general criticism or negative perception from time to time which may negatively impact its reputation.

CSi also acknowledges that it will knowingly engage in specific activities where opinions may vary depending on the perspective and standpoint of each party, and which may lead to negative perception from some stakeholders.

In both these cases, CSi accepts reputational risk only where we can justify at the time decisions are taken that:

- The activity is in line with our stated Code of Conduct, and Conduct and Ethics Standards
- Informed judgment is exercised in line with our internal sector policies and thematic guidelines, including region specific concerns or mitigation, where applicable.

CSi has no appetite for engaging in activity that exposes the firm to reputational risk where these conditions are not met.

CSi has adopted the CS Global Policy on Reputational Risk ('the Policy') which states that each employee is responsible for assessing the potential reputational impact of all businesses in which they engage, and for determining whether any actions or

transactions should be formally submitted through the Reputational Risk Review Process ('RRRP') for review.

Reputational risk may arise from a variety of sources, including, but not limited to, the nature or purpose of a proposed transaction, action or client relationship, the identity or nature of a potential client, the regulatory or political climate in which the business will be transacted or significant public attention surrounding the transaction itself.

## Process and Governance

The CSi Board has delegated reputational risk issues to be reviewed via the Bank's global RRRP which includes an overview of the transaction or action being considered, the risks identified and relevant mitigating factors and views from internal subject matter experts. All formal submissions in the RRRP require review by the UK Senior Manager in the relevant division, and assuming they are supportive of the proposal are then subsequently referred to one of CSi's Reputational Risk Approvers ('RRA'), each of whom is independent of the business divisions and has the authority to approve, reject, or impose conditions on the Bank's participation. If the RRA considers there to be a material reputational risk associated with a submission, it is escalated to the CSi Reputational Risk Committee ('the Committee') for further discussion, review and final decision. The Committee is comprised of senior Bank entity management across divisions and corporate functions.

Reputational risk is assessed on an entity based approach whereby the region of the RRRP submission is driven by the location of the relevant regional booking entity. Where a submission relates to a Remote Booking, a submission will be made through to CSi RRRP and the RRAs in other regions will be consulted as appropriate, which may include escalation to the Committee.

# Liquidity Risk

## Overview

Liquidity Risk is risk that the Bank is unable to fund its assets or meet its liquidity obligations as they fall due in times of stress, whether caused by market events and/or company specific issues. Liquidity at CSi is managed primarily by Treasury and the Global Liquidity Group, independently overseen by Treasury and Liquidity Risk Management.

## Risk Appetite

The Board defines CSi's risk tolerance, including liquidity risk, and set parameters for the balance sheet and funding usage by businesses. The Board is also responsible for defining the overall risk tolerance in the form of a risk appetite statement.

The authority to set more granular limits is delegated by the CSi Board to the CSi Executive Committee. The CSi Risk Management Committee has the delegated authority from the CSi Executive Committee to approve operating limits.

Liquidity risk controls calibration is recommended by the UK Head of Treasury and Liquidity Risk. Liquidity Risk has a responsibility for development and calibration of the overall liquidity risk control framework.

## The Adequacy of Liquidity Risk Management

An ILAAP document sets out CSi's approach to liquidity and funding and is approved by the CSi Board. The assessment of the liquidity needs of CSi has been made in consideration of the relevant guidance and requirements set out by regulatory bodies, in particular the PRA Supervisory Statement SS24/15 and Internal Liquidity Adequacy Assessment part of the PRA Rulebook. The most recent assessment concludes that CSi was in compliance with the internal controls in place and with the Board approved Risk Appetite.

The entity was also in compliance with the regulatory minimum liquidity requirements under the Liquidity Coverage Requirement ('LCR') and held surplus liquidity above both the Board approved LCR Risk Appetite and internal risk controls.

## Strategies and Processes in the Management of the Liquidity Risk

The liquidity and funding strategy of CSi is approved by the UK IB Asset and Liability ('ALM') Capital Allocation & Risk Management Committee ('CARMC') and overseen by the Board of Directors ('Board').

CARMC is responsible for review of the capital position, balance sheet development, current/prospective funding, interest rate risk and foreign exchange exposure, as well as defining and monitoring the adherence to internal risk limits. CARMC also regularly reviews the methodology and assumptions of the liquidity risk management framework and determines the liquidity horizon to be maintained.

The CSi RMC is responsible to set liquidity risk limits which are in place to strictly control the risk profile within the Board risk appetite. A breach of a limit requires immediate mitigating action to reduce risk below the limit.

The implementation and execution of the liquidity and funding strategy is managed by Treasury and the Global Liquidity Group. Treasury ensures adherence to the funding policy and the efficient coordination of secured funding desks. The Global Liquidity Group was set up in July 2018 to centralise control of liability and collateral management with the aim of optimising liquidity sourcing, funding costs and HQLA portfolio. This approach enhances CSi's ability to manage potential liquidity and funding risks and to promptly adjust liquidity and funding levels to meet stress situations.

The liquidity and funding profile is reported regularly to CARMC and the Board. It reflects CSi's strategy and risk appetite and is driven by business activity levels and the overall operating environment.

## Structure and Organisation of the Liquidity Risk Management Function

The Liquidity Risk Management function is part of the overall Global Liquidity organisation with supporting functions from the Global Liquidity Risk roles to oversee and manage liquidity risk in CSi. It is led by the UK Head of Treasury and Liquidity Risk with dual reporting lines to the Global Head of Treasury & Liquidity Risk and the UK Chief Risk Officer.

The three lines of defense model is adopted by the firm for managing liquidity risks. The current operating model for liquidity risk establishes a clear delineation between Treasury and Liquidity Measurement and Reporting ('LMR') as the first line of defense and Liquidity Risk as the second line of defense. Third line of defense sits with Internal Audit. The segregation of mandates ensures controlled and cohesive management of liquidity risks.

Liquidity Risk Management challenges Treasury, LMR and business divisions for their liquidity risk measurement and management responsibilities.

## Overview of the Liquidity Management Function

All liquidity management functions have regional presence outside head offices to ensure regional liquidity risk requirements are met.

The entity liquidity management functions have dual reporting lines to the local treasurers and functionally to the Global Head of Liquidity management. The teams are responsible for managing liquidity positions at the local level in conjunction with regulatory and senior management requirements.

## Overview of the Group Governance Structure

All functions involved in the liquidity risk management governance and risk management framework have regional presence to ensure liquidity risk management governance is implemented locally and satisfies local liquidity requirements, local rules and regulations.

The Entity and Global Committees governance is aligned in terms of the group-wide operating model. This setup is mirrored locally in the entities. This application ensures that risk control frameworks are developed and adhered to consistently at the Group and local entity levels while allowing for a nuanced approach to entity specific business lines and regulations.

## Liquidity Risk Reporting and Measurement Systems

The legal entity internal liquidity risk management framework is aligned with the group-wide approach but also incorporates local regulatory compliance requirements. Such compliance requirements are measured as part of the Prudential Regulation Authority's ('PRA') Individual Liquidity Guidance ('ILG') which results in CSi holding term funding and a local liquid asset buffer of qualifying securities.

The LCR addresses liquidity risk over a 30-day period. The LCR aims to ensure that banks have unencumbered high-quality liquid assets ('HQLA') available to meet short-term liquidity needs under a severe stress scenario. The LCR is comprised of two components, the value of HQLA in stressed conditions and the total net cash outflows calculated according to specified scenario parameters.

The NSFR establishes criteria for a minimum amount of stable funding based on the liquidity of a bank's on- and off-balance sheet activities over a one-year horizon. The NSFR is a complementary measure to the LCR and is structured to ensure that illiquid assets are funded with an appropriate amount of stable long-term funds. The NSFR is defined as the ratio of available stable funding over the amount of required stable funding.

Under CRDIV guidelines, the LCR is currently 100% since 1 January, 2018 (one year prior to BCBS guidelines). The NSFR was

expected to be introduced on 1 January, 2018 in line with the BCBS proposal, however in November 2016 the European Commission confirmed that it will not apply at a level of 100% until two years after the date of entry in to force of the proposed regulation. The date of entry into force is not yet known.

The LCR is used as one of the bank's primary tools, in parallel with the internal liquidity model (referred to as the Barometer), and the NSFR, to monitor the structural liquidity position and plan funding.

In February 2018, the PRA have introduced the PRA 110 template which is a regulatory report for maturity ladder capturing the maturity mismatch of an institution's activities. It covers contractual flows and contingent outflows allocated across various maturity buckets according to their residual maturity. The PRA 110 compliance deadline is 1 July 2019 and CSi has undertaken a project to ensure readiness.

The internal liquidity model (Barometer) is used to manage liquidity to internal targets and as a basis to model both the bank specific and market-wide stress scenarios and their impact on liquidity and funding. The internal Barometer framework supports the management of the firm's funding structure. It allows the management of the time horizon over which the stressed market value of unencumbered assets (including cash) exceeds the aggregate value of contractual outflows of unsecured liabilities plus a conservative forecast of anticipated contingent commitments. This Barometer framework allows the management of liquidity to a desired profile under stress in order to be able to continue to pursue activities for a period of time without changing business plans during times of firm specific or market-wide stress. Under this framework, there are also short-term targets based on additional stress scenarios to ensure uninterrupted liquidity for short time frames.

## Processes for Hedging and Mitigating Liquidity Risk

The Barometer framework supports the management of the firm's funding structure. It allows Treasury to manage the time horizon over which the stressed market value of unencumbered assets (including cash) exceeds the aggregate value of contractual outflows of unsecured liabilities plus a conservative forecast of anticipated contingent commitments.

The Barometer framework also allows Treasury to manage liquidity to a desired profile under stress in order to be able to continue to pursue activities for a period of time, without changing business plans during times of stress.

Under this framework, Treasury also has short-term targets based on additional stress scenarios to ensure uninterrupted liquidity for short time frames.

The Barometer and LCR are produced and reviewed on a daily basis. These daily reports are available to be compared versus forecasts, ensuring ongoing monitoring of the liquidity position of the entities.

## LCR Disclosure Template

The table in this section discloses level and components of the LCR.

### LIQ1: LCR

	Total unweighted value (average)				Total weighted value (average)			
Scope of consolidation (solo/consolidated)								
<b>USD million</b>								
<b>Quarter ending on (DD Month YYYY)</b>	<b>31.03.18</b>	<b>30.06.18</b>	<b>30.09.18</b>	<b>31.12.18</b>	<b>31.03.18</b>	<b>30.06.18</b>	<b>30.09.18</b>	<b>31.12.18</b>
<b>Number of data points used in the calculation of averages</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>
<b>HIGH-QUALITY LIQUID ASSETS</b>								
Total high-quality liquid assets (HQLA)					17,253	17,233	16,724	16,086
<b>CASH – OUTFLOWS</b>								
Retail deposits and deposits from small business customers,	–	–	–	–	–	–	–	–
of which stable deposits	–	–	–	–	–	–	–	–
of which less stable deposits	–	–	–	–	–	–	–	–
Unsecured wholesale funding	483	697	910	1,069	483	697	910	1,069
Operational deposits (all counterparties) and deposits in networks of cooperative banks	–	–	–	–	–	–	–	–
Non-operational deposits (all counterparties)	483	697	910	1,069	483	697	910	1,069
Unsecured debt	–	–	–	–	–	–	–	–
Secured wholesale funding	–	–	–	–	637	824	992	1,045
Additional requirements	22,843	22,915	22,621	20,856	15,348	15,145	14,939	14,129
Outflows related to derivative exposures and other collateral requirements	14,973	14,077	12,691	10,927	11,974	11,440	10,642	9,635
Outflows related to loss of funding on debt products	1,691	2,324	2,966	3,341	1,691	2,324	2,966	3,341
Credit and liquidity facilities	6,179	6,514	6,964	6,588	1,683	1,381	1,331	1,153
Other contractual funding obligations	3,416	3,500	3,472	3,441	151	149	120	135
Other contingent funding obligations	1,656	1,957	1,878	1,704	1,167	1,229	1,249	1,234
<b>TOTAL CASH OUTFLOWS</b>					<b>17,786</b>	<b>18,044</b>	<b>18,210</b>	<b>17,612</b>
<b>CASH – INFLOWS</b>								
Secured lending (e.g. reverse repos)	20,255	21,321	22,457	22,442	2,620	2,584	2,573	2,650
Inflows from fully performing exposures	4,206	4,251	4,407	4,418	4,194	4,237	4,394	4,409
Other cash inflows	2,980	2,975	2,631	2,231	2,980	2,975	2,631	2,231
(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)					–	–	–	–
(Excess inflows from a related specialised credit institution)					–	–	–	–
<b>TOTAL CASH INFLOWS</b>	<b>27,441</b>	<b>28,547</b>	<b>29,495</b>	<b>29,091</b>	<b>9,794</b>	<b>9,796</b>	<b>9,598</b>	<b>9,290</b>
<b>Fully exempt inflows</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Inflows subject to 90% cap</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Inflows subject to 75% cap</b>	<b>26,231</b>	<b>27,267</b>	<b>28,201</b>	<b>27,807</b>	<b>9,794</b>	<b>9,796</b>	<b>9,599</b>	<b>9,290</b>

### LIQ1: LCR

	Total adjusted value			
Scope of consolidation (solo/consolidated)				
<b>USD million</b>				
<b>Quarter ending on (DD Month YYYY)</b>	<b>31.03.18</b>	<b>30.06.18</b>	<b>30.09.18</b>	<b>31.12.18</b>
<b>Number of data points used in the calculation of averages</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>
<b>Liquidity buffer</b>	<b>17,253</b>	<b>17,233</b>	<b>16,724</b>	<b>16,086</b>
<b>Total net cash outflows</b>	<b>7,992</b>	<b>8,250</b>	<b>8,611</b>	<b>8,323</b>
<b>Liquidity coverage ratio (%)</b>	<b>219%</b>	<b>213%</b>	<b>199%</b>	<b>199%</b>

There are elements of liquidity risk management that are not covered in the LCR disclosure template. The Pillar 2 framework considers the liquidity risks not captured, or not fully captured, under Pillar 1. For example debt buyback risk that may arise in the absence of a contractual buyback obligation, intraday liquidity risk and the risk from early termination of non-margined derivatives.

The internal liquidity model, internal Barometer, adequately addresses those risks not captured by the LCR. The ILAAP document details how and why these risks are considered and how they are modelled.

## Concentration of Funding and Liquidity Sources

The liquidity and funding policy is designed to ensure that CSi's assets are funded and CSi's liquidity obligations are met as they fall due in times of stress, whether caused by market events and/or CSi specific issues. This is achieved through a conservative asset/liability management strategy aimed at maintaining long-term funding, including stable deposits, in excess of illiquid assets.

To address short-term liquidity stress, a liquidity pool comprising of cash held at central banks and highly liquid unencumbered securities ('HQLA') is maintained and managed by Treasury for the purpose of covering unexpected outflows in the event of severe market and idiosyncratic stress. CSi's liquidity risk parameters reflect various liquidity stress assumptions calibrated as such that in the event CSi is unable to access unsecured funding, CSi expects to have sufficient liquidity to sustain operations for a period of time in excess of the minimum limit. This includes potential currency mismatches, which are monitored and subject to limits, particularly in the significant currencies of EUR, JPY, GBP, CHF and the USD.

### Funding Profile

CSi holds a mix of term unsecured funding supplied by CS AG London Branch, which mitigates its short-term funding risk. The entity also has a diverse funding strategy through structured notes, equity and subordinated debt (including iMREL). A mix of 120-day and 400-day evergreen funding is also employed.

Treasury reviews secured funding profile changes and wider secured funding related activity through its Secured Financing MIs which are discussed on a weekly basis during the UK Liquidity Meeting, with Liquidity Risk Management and Global Liquidity Group representatives attending these meetings.

Treasury works closely with business divisions to understand and forecast material changes in activity whether short, medium or long-term and its potential impact on internal and regulatory metrics.

Treasury have also established a number of Treasury flags which are set at an entity level and used to highlight any material changes to the secured funding profile, including counterparty concentrations.

### Funding Concentration Framework

Funding concentration risk is addressed as part of the overall liquidity risk control framework. It is CSi's funding strategy to ensure that CSi has access to a diversified range of funding sources by customer base, financial market and geography to cover short-term and medium to long-term requirements, without any significant reliance on a particular funding source, counterparty, tenor or product.

The established governance supports the identification of concentration risks, as well as a forward-looking approach to concentration risk management as in the tenor concentration view. Limits and/or tolerances are defined by Risk governance bodies or its delegated authority. Concentration risk exposures, where relevant, are discussed at the CSi RMC, Liquidity Review Board and Treasury UK Liquidity weekly meetings; mitigations are devised and escalated accordingly.

## Derivative Exposures and Potential Collateral Calls

The LCR is used as one of the primary tools, in parallel with the Barometer and the NSFR, to monitor CSi's structural liquidity position and to plan funding. The Barometer is also used to manage liquidity to internal targets and as a basis to model both the CSi specific and market-wide stress scenarios and their impact on the overall liquidity and funding profile.

Derivatives exposure and collateral calls are part of this overarching framework and cover anticipated mark to market changes and collateral calls related to this (variation and initial margin) and other items (such as downgrade risk/additional termination events).

## Currency Coverage

Currency coverage is monitored locally for CSi via an internal measure based on the Barometer, the currency coverage ratio ('CCR'). The Barometer replaced the previous LCR-based approach in October 2018, a change that increased funding currency management transparency and traceability and established a consistent framework at the Group and Legal entity levels.

The framework places controls around potential cross currency mismatches and highlights situations where liquidity deficits are developing due to structural long and short positions in various currencies. These controls are intended to encourage management decision making and planning regarding the currency composition of funding activities.



# Interest Rate Risk in the Banking Book

## Overview

CSi manages the interest rate risk in the Banking Book which includes monitoring the potential impact of changes in interest rates. CSi's interest rate risk exposures in non-trading positions arise primarily from treasury and funding activity, with the majority of interest rate risk transferred to and centrally managed by EMEA Treasury on a portfolio basis within approved limits using appropriate hedging instruments. The CSi Board of Directors defines interest rate risk appetite on an annual basis. Furthermore, the CSi Board of Directors and the Risk Management Committee set risk limits for interest rate risk the banking book which are monitored on at least a monthly basis.

## Risk Measurement

The risks associated with the non-trading interest rate-sensitive portfolios are measured using a range of tools, including the following key metrics:

- **interest rate sensitivity ('DV01')**: expresses the linear approximation of the impact on a portfolio's fair value resulting from a one basis point (0.01%) parallel shift in yield curves, where the approximation tends to be closer to the true change in the portfolio's fair value for smaller parallel shifts in the yield curve. The DV01 is a transparent and intuitive indicator of linear directional interest rate risk exposure, which does not rely on statistical inference. The interest rate sensitivity is measured and reported on a daily basis;
- **VaR**: a statistical indicator of the potential fair value loss, taking into account the observed interest rate moves across yield curve tenors and currencies. In addition, VaR takes into account yield curve risk, spread and basis risks, as well as foreign exchange and equity risk; and

- **DELTA Economic Value of Equity**: expresses the impact of a pre-defined scenario (eg. instantaneous changes in interest rates) on a portfolio's fair value. This metric does not rely on statistical inference.

These measures focus on the impact on a fair value basis, taking into account the present value of all future cash flows associated with the current positions. The metrics estimate the impact on the economic value of the current portfolio, since most non-trading books are not marked-to-market and ignore the development of the portfolio over time.

CSi's Banking Book does not include any replicated non-maturing deposits or loans with prepayment options.

## Monitoring and Review

The economic impacts of adverse parallel shifts in interest rates were significantly below the threshold of 20% of eligible regulatory capital used by regulators to identify excessive levels of non-trading interest rate risk. This risk is not capitalised within the Pillar 1 regime, rather, it is analysed within the ICAAP and addressed within CSi's Pillar 2 capital requirement.

Despite the low interest rate environment, the full downward shock is applied resulting in more conservative impact estimates compared to flooring the downward shocks at zero.

Limits and other interest rate risk metrics are monitored by the Risk division at least monthly or more frequently as deemed necessary with any limit breaches escalated appropriately.

The following tables show the fair value impact of yield curve changes, by currency:

### One-basis-point parallel increase in yield curves by currency – non-trading positions (USD million equivalent)

As at 31 December 2018	USD	GBP	EUR	CHF	Other	Total
Fair value impact of a one-basis-point parallel increase in yield curves	0.2	(0.1)	0.1	(0.0)	0.0	0.2

### Fair value impact of change in interest rates on non-trading positions (USD million equivalent)

As at 31 December 2018	USD	GBP	EUR	CHF	Other	Total
<b>Basis points movement + / (-)</b>						
200	35.8	(11.6)	6.3	(1.6)	0.7	29.5
100	18.0	(6.0)	5.0	(0.8)	0.3	16.5
-100	(18.3)	6.5	(8.7)	0.8	(0.3)	(20.0)
-200	(36.7)	13.3	(21.0)	1.6	(0.7)	(43.4)

# Leverage

## Overview

CSI is required to monitor and disclose its leverage ratio in accordance with the CRR definition, as amended by the European Commission Leverage Ratio Delegated Act. In Nov 2016, the European Commission proposed amendments to CRR, including a binding leverage ratio for certain EU financial institutions.

In conjunction with other regulatory and capital metrics such as RWA levels, leverage ratios are actively monitored and managed within CSI's capital management governance processes. Similar to the CS group level, internal targets (including the setting of internal management buffers where required) are developed and monitored and this process is flexible, reflecting changing regulatory expectations.

Consideration is given to the leveraging or deleveraging impacts resulting from both business development and the impact of

future regulatory change to ensure CSI continues to meet external and internal expectations. CSI's stress testing framework will consider the impact on leverage ratios of both internal and regulator-prescribed stress tests. The impact on the leverage ratio is also considered as part of the ICAAP.

## Factors Impacting the Leverage Ratio during the Period

CSI's leverage ratio improved to 11.8% by 31 December 2018 from 11.7% at 31 December 2017. This is primarily due to decrease in PFE owing to reduction in book size across business areas partially offset by an increase in commercial lending on-balance sheet exposures in H1 2018, specifically new deals completed by GM Credit.

**Table LRSum: Summary reconciliation of accounting assets and leverage ratio exposures**

	Applicable Amounts
1 Total assets as per published financial statements	231,753
2 Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	(154)
3 (Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio exposure measure in accordance with Article 429(13) of Regulation (EU) No 575/2013 "CRR")	-
4 Adjustments for derivative financial instruments	(38,522)
5 Adjustments for securities financing transactions "SFTs"	1,916
6 Adjustment for off-balance sheet items (ie conversion to credit equivalent amounts of off-balance sheet exposures)	5,266
EU-6a (Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013)	-
EU-6b (Adjustment for exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (14) of Regulation (EU) No 575/2013)	-
7 Other adjustments	(19,984)
<b>8 Total leverage ratio exposure</b>	<b>180,275</b>

## Table LRCom: Leverage ratio common disclosure

CRR leverage ratio  
exposures

<b>On-balance sheet exposures (excluding derivatives and SFTs)</b>		
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	62,436
2	(Asset amounts deducted in determining Tier 1 capital)	(1,474)
<b>3</b>	<b>Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets) (sum of lines 1 and 2)</b>	<b>60,962</b>
<b>Derivative exposures</b>		
4	Replacement cost associated with all derivatives transactions (ie net of eligible cash variation margin)	14,694
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	64,808
EU-5a	Exposure determined under Original Exposure Method	–
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	–
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	–
8	(Exempted CCP leg of client-cleared trade exposures)	(2,523)
9	Adjusted effective notional amount of written credit derivatives	9,015
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	–
<b>11</b>	<b>Total derivative exposures (sum of lines 4 to 10)</b>	<b>85,994</b>
<b>Securities financing transaction exposures</b>		
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	26,933
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	–
14	Counterparty credit risk exposure for SFT assets	1,120
EU-14a	Derogation for SFTs: Counterparty credit risk exposure in accordance with Article 429b (4) and 222 of Regulation (EU) No 575/2013	–
15	Agent transaction exposures	–
EU-15a	(Exempted CCP leg of client-cleared SFT exposure)	–
<b>16</b>	<b>Total securities financing transaction exposures (sum of lines 12 to 15a)</b>	<b>28,053</b>
<b>Other off-balance sheet exposures</b>		
17	Off-balance sheet exposures at gross notional amount	7,844
18	(Adjustments for conversion to credit equivalent amounts)	(2,578)
<b>19</b>	<b>Other off-balance sheet exposures (sum of lines 17 to 18)</b>	<b>5,266</b>
<b>Exempted exposures in accordance with CRR Article 429 (7) and (14) (on and off balance sheet)</b>		
EU-19a	(Exemption of intragroup exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off balance sheet))	–
EU-19b	(Exposures exempted in accordance with Article 429 (14) of Regulation (EU) No 575/2013 (on and off balance sheet))	–
<b>Capital and total exposures</b>		
<b>20</b>	<b>Tier 1 capital</b>	<b>21,270</b>
<b>21</b>	<b>Total leverage ratio exposures (sum of lines 3, 11, 16, 19, EU-19a and EU-19b)</b>	<b>180,275</b>
<b>Leverage ratio</b>		
<b>22</b>	<b>Leverage ratio</b>	<b>11.80%</b>
<b>Choice on transitional arrangements and amount of derecognised fiduciary items</b>		
EU-23	Choice on transitional arrangements for the definition of the capital measure	–
EU-24	Amount of derecognised fiduciary items in accordance with Article 429(11) of Regulation (EU) NO 575/2013	–

**Table LRSpl: Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)**

	CRR leverage ratio exposures
EU-1 On-balance sheet items (excluding derivatives and SFTs, but including collateral)	62,436
EU-2 Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	31,635
EU-3 Add-on amounts for PFE associated with all derivatives transactions	30,801
EU-4 Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	–
EU-5 Deductions of receivables assets for cash variation margin provided in derivatives transactions	539
EU-6 Exempted CCP leg of client-cleared trade exposures	–
EU-7 Adjusted effective notional amount of all written credit derivatives	20,374
EU-8 Adjusted effective notional offsets and add-on deductions for written credit derivatives	–
EU-9 Derivative Exposures	–
EU-10 Securities financing transaction exposures (USD million)	9,038
EU-11 Gross SFT assets (with no recognition of netting), after adjusting for sale accounting transactions	23
EU-12 Netted amounts of cash payables and cash receivables of gross SFT assets	827

# Asset Encumbrance

## Overview

The main source of asset encumbrance within CSi relates to securities lending and derivatives transactions. Securities lending transactions encumber assets through a combination of repo and stock loan/borrow activity, with derivatives transactions causing encumbrance through collateralisation of derivative transaction exposures.

## Collateralisation Agreements entered into for Securing Liabilities

Secured lending and stock borrow/loan transactions are principally governed by Global Master Repurchase Agreements ('GMRAs') and Global Master Stock Lending Agreements ('GMSLAs'). These agreements generally focus on the mechanism of collateral delivery, income on the collateral positions and other impacts (eg. corporate actions occurring on collateral or failure to deliver).

## Collateral

Collateral postings on derivatives transactions are principally governed by ISDA agreements, including Credit Support Annex ('CSA') documentation. These agreements determine the asset type used to satisfy collateral obligations and any re-hypothecation restrictions related to derivatives collateralisation. Collateral pledged to CSi in excess of the minimum requirement, and collateral owed by CSi to counterparties which has not yet been called is considered as part of the internal monitoring procedures for the management of asset encumbrance.

## Unencumbered Assets

The amount reported in the first table below as 'other assets' within 'carrying amount of unencumbered assets' comprises mainly derivative assets, intangible assets, deferred tax, tangible fixed assets and various receivable balances (both trade and non-trade). None of these asset types is considered available for encumbrance in the normal course of business.

### Assets – encumbered and unencumbered asset analysis

end of 2018	Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of unencumbered assets	Fair value of unencumbered assets	Total asset carrying amount	Total fair value of assets
<b>USD million</b>						
<i>Assets</i>						
Loans on demand	23,964		19,709		43,673	
Equity instruments	3,002	3,002	3,677	3,677	6,679	6,679
Debt securities	8,034	8,034	8,747	8,766	16,781	16,800
Loans and advances other than loans on demand	7		31,605		31,612	
Other assets	36		132,864		132,900	
<b>Total assets</b>	<b>35,043</b>	<b>11,036</b>	<b>196,603</b>	<b>12,443</b>	<b>231,645</b>	<b>23,479</b>

### Collateral received

end of 2018	Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance
<b>USD million</b>		
<b>Collateral received</b>		
Equity instruments	8,067	3,153
Debt securities	42,572	19,309
Other collateral received	–	4,710
<b>Total collateral received</b>	<b>50,638</b>	<b>27,172</b>
Own debt securities issued other than own covered bonds or ABSs	–	–
<b>Total</b>	<b>50,638</b>	<b>27,172</b>

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**Carrying amount of encumbered assets and collateral received and associated liabilities**

end of 2018

Carrying amount

**USD million**

Matching liabilities, contingent liabilities or securities lent	42,580
Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered	42,992

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# Appendix 1: Capital Instruments' Main Features

## Credit Suisse International – Capital Instruments' Main Features

No.	Term	Capital Instruments				
1	Issuer	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International
2	Unique identifier (eg CUSIP, ISIN or Bloomberg identifier for private placement)	N/A	N/A			
3	Governing law(s) of the instrument	English	English	English	English	English
<b>Regulatory treatment</b>						
4	Transitional CRR rules	Common Equity Tier 1	Tier 2	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Common Equity Tier 1	Tier 2	Tier 2	Tier 2	Tier 2
6	Eligible at solo/ (sub-)consolidated/ solo & (sub-) consolidated	Solo	Solo	Solo	Solo	Solo
7	Instrument type (types to be specified by each jurisdiction)	Common Shares	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	\$12,366.0	\$0.1	\$0.1	\$0.1	\$0.1
9	Nominal amount of instrument	\$12,366.0	\$0.1	\$0.1	\$0.1	\$0.1
9a	Issue price	Par	Par	Par	Par	Par
9b	Redemption price	Par	Par	Par	Par	Par
10	Accounting classification	Shareholders Equity	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	09.05.90	20.08.01	31.01.03	19.09.05	15.03.06
12	Perpetual or dated	Perpetual	Perpetual	Perpetual	Perpetual	Perpetual
13	Original maturity date	No Maturity	N/A	N/A	N/A	N/A
14	Issuer call subject to prior supervisory approval	N/A	Yes	Yes	Yes	Yes
15	Optional call date, contingent call dates, and redemption amount	N/A	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval
16	Subsequent call dates, if applicable	N/A	N/A	N/A	N/A	N/A
<b>Coupons / dividends</b>						
17	Fixed or floating dividend/coupon	N/A	Floating	Floating	Floating	Floating
18	Coupon rate and any related index	N/A	USD 3-month Libor + 150bps	USD 3-month Libor + 150bps	USD 3-month Libor + 150bps	USD 3-month Libor + 150bps
19	Existence of a dividend stopper	No	No	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully Discretionary	Mandatory	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully Discretionary	Mandatory	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	N/A	No	No	No	No
22	Noncumulative or cumulative	Non-Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
23	Convertible or non-convertible	N/A	Non-convertible	Non-convertible	Non-convertible	Non-convertible
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Tier 1	Junior subordinated	Junior subordinated	Junior subordinated	Junior subordinated
36	Non-compliant transitioned features	No	No	No	No	No
37	If yes, specify non-compliant features	N/A	N/A	N/A	N/A	N/A

## Credit Suisse International – Capital Instruments' Main Features

No.	Term	Capital Instruments				
1	Issuer	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International
2	Unique identifier (eg CUSIP, ISIN or Bloomberg identifier for private placement)	N/A	N/A	N/A	N/A	N/A
3	Governing law(s) of the instrument	English	English	English	English	English
<b>Regulatory treatment</b>						
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
6	Eligible at solo/ (sub-)consolidated/ solo & (sub-) consolidated	Solo	Solo	Solo	Solo	Solo
7	Instrument type (types to be specified by each jurisdiction)	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1
9	Nominal amount of instrument	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1
9a	Issue price	Par	Par	Par	Par	Par
9b	Redemption price	Par	Par	Par	Par	Par
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	16.11.06	17.06.03	17.06.03	23.12.03	19.10.04
12	Perpetual or dated	Perpetual	Dated	Dated	Dated	Dated
13	Original maturity date	N/A	31.03.26	31.03.26	31.03.26	31.03.26
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes	Yes	Yes
15	Optional call date, contingent call dates, and redemption amount	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval
16	Subsequent call dates, if applicable	N/A	N/A	N/A	N/A	N/A
<b>Coupons / dividends</b>						
17	Fixed or floating dividend/coupon	Floating	Floating	Floating	Floating	Floating
18	Coupon rate and any related index	USD 3-month Libor + 125bps	USD 3-month Libor + 75bps	USD 3-month Libor + 75bps	USD 3-month Libor + 75bps	USD 3-month Libor + 75bps
19	Existence of a dividend stopper	No	No	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No	No	No
22	Noncumulative or cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
23	Convertible or non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Junior subordinated	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors
36	Non-compliant transitioned features	No	No	No	No	No
37	If yes, specify non-compliant features	N/A	N/A	N/A	N/A	N/A



## Credit Suisse International – Capital Instruments' Main Features

No.	Term	Capital Instruments				
1	Issuer	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International
2	Unique identifier (eg CUSIP, ISIN or Bloomberg identifier for private placement)	N/A	N/A	N/A	N/A	N/A
3	Governing law(s) of the instrument	English	English	English	English	English
<b>Regulatory treatment</b>						
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
6	Eligible at solo/ (sub-)consolidated/ solo & (sub-) consolidated	Solo	Solo	Solo	Solo	Solo
7	Instrument type (types to be specified by each jurisdiction)	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	\$0.1	\$0.1	\$0.1	\$0.5	\$0.5
9	Nominal amount of instrument	\$0.1	\$0.1	\$0.1	\$0.5	\$0.5
9a	Issue price	Par	Par	Par	Par	Par
9b	Redemption price	Par	Par	Par	Par	Par
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	08.11.04	17.11.05	23.08.06	09.05.07	09.05.07
12	Perpetual or dated	Dated	Dated	Dated	Dated	Dated
13	Original maturity date	31.03.26	17.11.30	23.08.31	09.05.32	09.05.32
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes	Yes	Yes
15	Optional call date, contingent call dates, and redemption amount	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval
16	Subsequent call dates, if applicable	N/A	N/A	N/A	N/A	N/A
<b>Coupons / dividends</b>						
17	Fixed or floating dividend/coupon	Floating	Floating	Floating	Floating	Floating
18	Coupon rate and any related index	USD 3-month Libor + 75bps	USD 3-month Libor + 90bps	USD 3-month Libor + 80bps	USD 3-month Libor + 70bps	USD 3-month Libor + 70bps
19	Existence of a dividend stopper	No	No	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No	No	No
22	Noncumulative or cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
23	Convertible or non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors
36	Non-compliant transitioned features	No	No	No	No	No
37	If yes, specify non-compliant features	N/A	N/A	N/A	N/A	N/A

## Credit Suisse International – Capital Instruments' Main Features

No.	Term	Capital Instruments				
1	Issuer	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International	Credit Suisse International
2	Unique identifier (eg CUSIP, ISIN or Bloomberg identifier for private placement)	N/A	N/A	N/A	N/A	N/A
3	Governing law(s) of the instrument	English	English	English	English	English
<b>Regulatory treatment</b>						
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
6	Eligible at solo/ (sub-)consolidated/ solo & (sub-) consolidated	Solo	Solo	Solo	Solo	Solo
7	Instrument type (types to be specified by each jurisdiction)	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	\$0.5	\$0.5	\$0.1	\$0.1	\$987.9
9	Nominal amount of instrument	\$0.5	\$0.5	\$0.1	\$0.1	\$1,100.0
9a	Issue price	Par	Par	Par	Par	Par
9b	Redemption price	Par	Par	Par	Par	Par
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	10.07.07	22.10.07	28.03.08	04.04.08	27.06.13
12	Perpetual or dated	Dated	Dated	Dated	Dated	Dated
13	Original maturity date	10.07.32	22.10.32	15.03.38	15.03.38	27.06.23
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes	Yes	Yes
15	Optional call date, contingent call dates, and redemption amount	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, subject to prior PRA approval	Optional, not before 27 June 2018, regulatory call and tax call, subject to prior PRA approval
16	Subsequent call dates, if applicable	N/A	N/A	N/A	N/A	N/A
<b>Coupons / dividends</b>						
17	Fixed or floating dividend/coupon	Floating	Floating	Fixed	Fixed	Floating
18	Coupon rate and any related index	USD 3-month Libor + 70bps	USD 3-month Libor + 75bps	8.6% Fixed Rate	8.6% Fixed Rate	USD 3-month Libor + 300bps
19	Existence of a dividend stopper	No	No	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No	No	No
22	Noncumulative or cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
23	Convertible or non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors
36	Non-compliant transitioned features	No	No	No	No	No
37	If yes, specify non-compliant features	N/A	N/A	N/A	N/A	N/A

# Appendix 2: Directorships

CSi's Board Members hold the following number of directorships as at 27 March 2019:

## Directorships

	Gender	Independent	Appointment Date	Mandate (Years) <sup>1</sup>	Total Number of Directorships
J Devine	M	Independent	01.11.17	2 years	6
M Dilorio	M		07.12.17	N/A	2
N Doyle	F	Independent	26.08.11	7.7 years	5
R Endersby	M	Independent	29.09.16	4 years	4
A Gottschling	M		01.01.18	2 years	4
A Halsey	F	Independent	05.11.15	3.5 years	5
C Horne	M		14.05.15	N/A	5
P Ingram	M		20.03.15	N/A	2
N Kane	F		07.06.18	N/A	4
D Mathers	M		24.03.16	N/A	4
J Moore	M		07.12.17	N/A	4
C Waddington	F		31.03.17	N/A	9

<sup>1</sup> New non-executive directors are appointed for an initial three-year term and subject to re-appointment, typically expected to serve two three-year terms. The Board may invite a Director to serve additional periods. All terms are subject to review by the Nomination Committee. N/A for Executive Board Directors. All Board Directors are subject to an annual Board Evaluation

# Appendix 3: List of Abbreviations and Glossary

Term	Definition
<b>A</b>	
AIRB	Advanced Internal Ratings-Based: the AIRB Approach is a method of deriving risk weights using internally assessed, rather than supervisory, estimates of risk parameters (eg. for PD, LGD).
ABS	Asset-backed security.
AT1	Additional Tier 1 capital: a form of capital eligible for inclusion in Tier 1, but outside the definition of CET1.
<b>B</b>	
Banking Book	Classification of assets outside the definition of Trading Book (also referred to as the 'Non-Trading Book').
BCBS	Basel Committee on Banking Supervision.
<b>C</b>	
CCB	Countercyclical capital buffer: prescribed under Basel III and CRD IV and aims to ensure that capital requirements mitigate potential future losses arising from excess credit growth and hence increased system-wide risk.
CCF	Credit conversion factor: represents an estimate of undrawn commitments drawn down at the point of default.
CCP	Central counterparty.
CCR	Counterparty credit risk.
CCRMTM	Counterparty credit risk mark-to-market method: a regulatory prescribed method for calculating exposure values in respect of counterparty credit risk.
CDO	Collateralised debt obligation.
CET1	Common Equity Tier 1: the highest quality level of regulatory capital prescribed under Basel III (and by CRD IV in the EU).
CET 1 ratio	CET1 expressed as a percentage of RWAs.
CQS	Credit quality step: a supervisory credit quality assessment scale, based on the credit ratings of ECAIs, and used to assign risk weights under the Standardised Approach.
CRD	Capital Requirements Directive: EU legislation implementing Basel III (and previously Basel II) in the EU.
CRM	Credit Risk Mitigation
CRR	Capital Requirements Regulation: EU legislation implementing Basel III in the EU.
CVA	Credit valuation adjustment: a capital charge under Basel III (CRD IV) covering the risk of mark-to-market losses on expected counterparty risk on derivative exposure arising from deterioration in a counterparty's credit worthiness.
<b>E</b>	
EAD	Exposure at default: the net exposure prior to taking account of any credit risk mitigation at the point of default.
EBITDA	Earnings before interest, taxation, depreciation and amortisation.
ECAI	External Credit Assessment Institutions.
Expected loss	The downturn loss on any exposure during a 12-month time horizon calculated by multiplying EAD by PD and LGD.
<b>F</b>	
FLP	Fund-linked product.
<b>I</b>	
ICAAP	Internal capital adequacy assessment process: a risk-based assessment of the level of regulatory capital to be held by a bank or firm. This may exceed the Pillar 1 capital requirement.
IFRS	International Financial Reporting Standards.
IMA	Internal Models Approach: used in the calculation of market risk capital requirements.
IRC	Incremental risk charge: a capital add-on to VAR calculated in respect of the potential for direct loss due to an internal or external rating downgrade (or upgrade) as well as the potential for indirect losses arising from a credit mitigation event.
ISDA	International Swaps and Derivatives Association.

Term	Definition
ISDA master agreement	Standardised contract developed by ISDA to facilitate bilateral derivatives trading.
<b>L</b>	
Leverage ratio	A calculation prescribed under Basel III (and CRD IV) to measure the ratio of total exposures to available Tier 1 capital.
LGD	Loss given default: the estimated ratio of loss to the amount outstanding at default (EAD) as a result of any counterparty default.
<b>M</b>	
Master netting agreement	An agreement between two counterparties who have multiple contracts with each other that provides for the net settlement of all contracts in the event of default on, or termination of any one contract.
<b>P</b>	
PD	Probability of default: is the probability of an obligor defaulting within a one-year horizon.
PFCE	Potential future credit exposure.
Pillar 1	Minimum regulatory capital requirements to be held by a bank or investment firm as prescribed by Basel III (and CRD IV).
Pillar 2	Regulator imposed risk-based capital requirements to be held in excess of Pillar 1.
Pillar 3	CRD IV prescribed capital, risk and remuneration disclosure requirements.
PRA	Prudential Regulation Authority.
<b>R</b>	
RBA	Ratings-Based Approach: an AIRB approach to securitisations using risk weights derived from ECAI ratings.
RCSA	Risk and control self-assessment.
RFDAR	Risk and Finance Data and Reporting.
RMC	Risk Management Committee.
RNIV	Risks not in VaR.
RWA	Risk-weighted asset: derived by assigning risk weights to an exposure value.
<b>S</b>	
SFA	Supervisory Formula Approach.
SFT	Securities financing transaction: lending or borrowing of securities (or other financial instruments), a repurchase or reverse repurchase transaction, or a buy-sell back or sell-buy back transaction.
SME	Small and medium-sized enterprise.
SRB	Systemic risk buffer: a capital buffer under CRD IV deployed by EU member states to reduce build-up of macro-prudential risk.
SREP	Supervisory Review and Evaluation Process.
Stressed VaR	A market risk capital charge derived from potential market movements applied over a continuous one-year period of stress to a trading book portfolio.
SRW	Supervisory Risk Weights Approach
<b>T</b>	
Tier 1 capital	A component of regulatory capital, comprising CET1 and AT1 capital.
Tier 1 capital ratio	The ratio of Tier 1 capital to total RWAs.
Tier 2 capital	A lower quality of capital (with respect to 'loss absorbency') also known as 'gone concern' capital.
Trading Book	Positions held with intent to trade or to hedge other items in the Trading Book.
<b>V</b>	
VaR	Value-at-risk: loss estimate from adverse market movements over a specified time horizon and confidence level.
<b>W</b>	
WWR	Wrong-way risk: risk exposure to a counterparty is adversely correlated with a counterparty's credit quality.





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