

Credit Suisse Securities (Europe) Limited

Basel III Pillar 3 Disclosures 2016

(incorporating Credit Suisse Investments (UK))

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Introduction

This document comprises the Pillar 3 disclosures for Credit Suisse Securities (Europe) Limited ('CSSEL' or 'the Firm') at 31 December 2016. It should be read in conjunction with CSSEL's 2016 Annual Report which can be found at: www.credit-suisse.com

The Basel II Framework was updated by the introduction of Basel III, and in the EU the amended regime was implemented from 1 January 2014 by means of a Directive and a Regulation, collectively known as 'CRD IV'. 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.

CSSEL 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 and concurrently with the annual report, although key capital adequacy ratios are disclosed more frequently and may be found on the Credit Suisse website at 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. A reconciliation of regulatory 'own funds' calculated under CRD IV to CSSEL's 2016 Statement of Financial Position is presented in the Capital Management section below.

This Pillar 3 document has been verified and approved in line with internal policy. It has not been audited by CSSEL's external auditors. However, it includes information that is contained within the audited financial statements as reported in the 2016 Annual Report.

Basis of consolidation

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

CSSEL is also an indirect wholly-owned subsidiary of Credit Suisse Investments (UK) ('CSIUK'). The CSIUK group is subject to consolidated regulatory supervision in the UK.

As required by CRR Article 13, Pillar 3 disclosures are required in respect of CSIUK group on a consolidated basis, and in respect of CSSEL, on a solo basis, as it represents the principal operating ('significant') subsidiary in the group. The disclosures for CSSEL are contained in the main body of this document while supplementary disclosures in respect of the CSIUK group can be found in Appendix 1.

Restrictions on transfer of funds or regulatory capital within the CSIUK group

In general, the restrictions around the repayment of liabilities and transfer of regulatory capital within the CSIUK 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 2016') on the Credit Suisse website at: 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, CSSEL 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 CSSEL, taking into account its business strategy and the impact of known regulatory changes. These plans are subjected to various stress tests, reflecting both macroeconomic and specific risk scenarios, 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 regularly, as part of the ICAAP, with results documented and reviewed by the Board of Directors. The ICAAP then forms the basis for any 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. CSSEL's CET1 comprises permanent share capital of ordinary shares and reserves. The ordinary shares carry voting rights and the right to receive dividends. CSSEL has no AT1 capital and the terms of its Tier 2 capital instruments are disclosed in Appendix 2.

CSSEL's capital composition and principal capital ratios are presented in the tables below, together with a reconciliation to CSSEL's 2016 Statement of Financial Position. No amount shown in 'own funds' is subject to CRD IV transitional provisions.

Capital composition (USD million)

As at 31 December	2016	2016		2015
	Own funds	Statement of Financial Position ⁽¹⁾	Difference	Own funds
Note	(a)	(b)	(a) - (b)	
Tier 1 (and CET1) capital				
Ordinary shares	3,859	3,859	0	3,859
Share premium	5,661	5,661	0	5,661
Other reserves/Capital contribution	5,662	5,662	0	5,662
Retained earnings	(7,029)	(7,029)	0	(7,001)
Accumulated other comprehensive income	(28)	(28)	0	(211)
Tier 1 (and CET1) before prudential filters and regulatory adjustments	8,125	8,125	0	7,970
Prudential filters and regulatory adjustments				
Cash flow hedge reserve (2)	0			6
Prudent valuation adjustments (3)	(124)			(173)
Intangible assets (4)	(1)			(1)
Excess of expected losses over credit risk adjustments (5)	(41)			(43)
Securitisation positions (Trading Book) (6)	(3)			(19)
Defined benefit pension fund (7)	(729)			(616)
Total Tier 1 (and CET1) capital	7,227			7,125
Tier 2 capital				
Subordinated loans (9)	3,501	3,501	0	3,501
Total Tier 2 capital	3,501	3,501	0	3,501
Total capital ('own funds')	10,728	11,626	(907)	10,626

Capital ratios

As at 31 December	2016	2016
Common Equity Tier 1	23.8%	24.0%
Tier 1	23.8%	24.0%
Total Capital	35.3%	31.9%

Notes to table of Capital Composition

- (1) 2016 Statement of Financial Position for (i) Total Equity and (ii) Subordinated Debt values prepared under IFRS.
- (2) Elimination of losses on cash flow hedges of financial instruments that are not fair valued [CRR Article 33(1)(a)].
- (3) A prudent valuation adjustment is applied in respect of fair valued instruments as required under CRD IV [CRR Articles 34,105].
- (4) Intangible assets and goodwill do not qualify as capital for regulatory purposes under CRD IV [CRR Articles 36(1)(b), 37].
- (5) For institutions using the AIRB Approach, represents shortfall of credit risk adjustments to expected losses.
- (6) 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].
- (7) CRD IV does not permit pension fund assets to be treated as regulatory capital [CRR Articles 36(1)(e), 41].
- (8) Subordinated debt is either accrual accounted or fair valued under IFRS (eg. including accrued interest) whereas 'own funds' recognises it at nominal value.

Countercyclical capital buffer

The Financial Policy Committee ('FPC') of the Bank of England is responsible for setting the UK Countercyclical Capital Buffer ('CCB') rate, ie. 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.

No CCB rates were set for 2016 by the FPC to apply to UK exposures. CCB rates have been set by Hong Kong, Norway and Sweden for 2016 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 CSSEL are summarised below, along with the relevant risk-weighted asset ('RWA') values. Credit risk capital requirements and RWAs are further broken down by risk-weight methodology and exposure class.

RWAs and capital requirements (USD million)

As at 31 December	2016	2016	2015	2015
	RWAs	Capital Requirement	RWAs	Capital Requirement
Credit and counterparty risk				
<i>Standardised Approach</i>				
Central governments or central banks	554	44	652	52
Public sector entities	28	2		
Multilateral development banks	0	0	1	0
Institutions	1,290	103	1,015	81
Corporates	938	75	843	67
Claims on institutions and corporates with a short-term credit assessment	557	45	703	56
Other items	140	11	21	2
Total Standardised Approach	3,507	280	3,235	258
<i>Advanced Internal Ratings Based Approach (AIRB)</i>				
Central governments and central banks	313	25	731	58
Institutions	1,490	119	2,042	163
Corporates - other	8,798	704	10,818	865
Equity	24	2	6	0
Non-credit obligation assets	7	1	4	0
Total AIRB Approach	10,632	851	13,601	1,086
<i>Credit Valuation Adjustment (CVA) and settlement / delivery risk</i>				
CVA - Standardised Method	2,458	197	2,328	186
Settlement or delivery risk	50	4	13	1
Total CVA and settlement / delivery risk	2,508	201	2,341	187
(i) Total credit and counterparty credit risk	16,647	1,332	19,177	1,531
Market risk				
Market risk under PRA Standard Rules	121	10	606	48
Market risk under Internal Models Approach	8,044	644	7,176	574
(ii) Total market risk	8,165	654	7,782	622
Other risks				
Contributions to the default fund of a CCP	128	10	106	8
Operational risk - Basic Indicator Approach	3,640	291	3,587	287
Large exposures (Trading Book)	1,811	145	2,625	210
(iii) Total other risks	5,579	446	6,318	505
Grand total RWA and capital requirements (i) – (iii)	30,391	2,432	33,277	2,658

Risk management

Overview

CSSEL's risk management framework is based on transparency, management accountability and independent oversight. Risk management plays an important role in CSSEL'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 CSSEL's financial strength and reputation, while ensuring that capital is well deployed to support business activities and increase shareholder value. CSSEL 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 CSSEL'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 CSSEL'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.

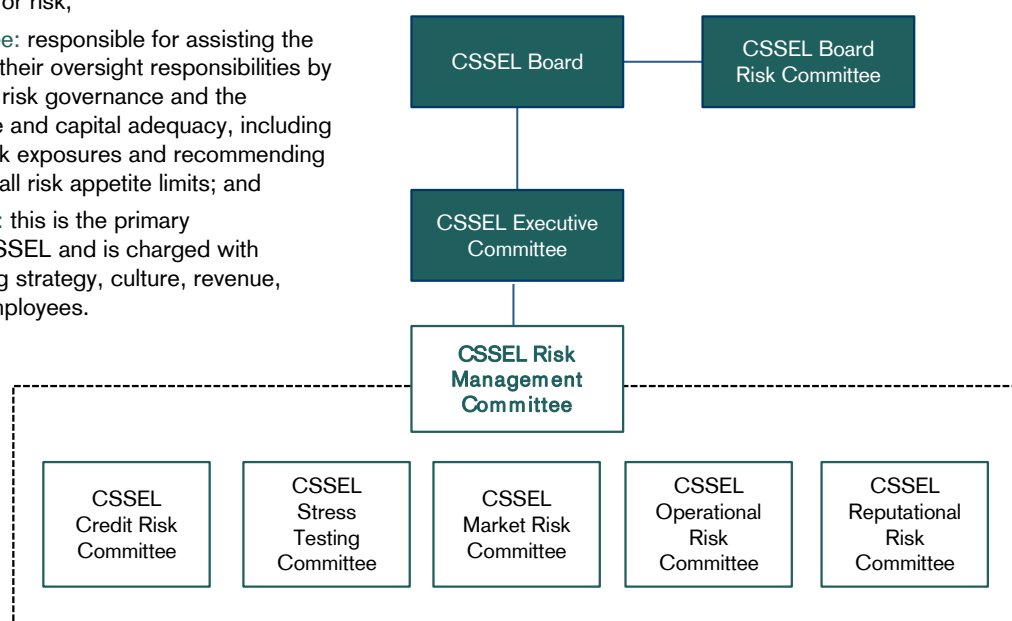
Recruitment to CSSEL's Board of Directors is governed by a nominations policy that is applied consistently to all subsidiaries within the CS group. At local level, this policy is implemented by a nominations committee that is required to evaluate the balance of skills, knowledge and experience of the Board of Directors by reference to the requirements of the Firm, and similarly to consider the skills, knowledge and experience of individual candidates for appointment. Consistent with the fact that the Firm 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 CSSEL 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. Details of directorships held by Board Members are shown in Appendix 3.

Risk organisation and governance

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

The CRO is responsible for overseeing CSSEL'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.

- **CSSEL Board of Directors:** responsible to shareholders for the strategic direction, supervision and control of the entity and for defining the overall tolerance for risk;
- **CSSEL 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
- **CSSEL Executive Committee:** this is the primary management committee of CSSEL and is charged with managing all aspects including strategy, culture, revenue, risk and control, costs and employees.



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 CSSEL Risk Management Committee ('RMC'), which is chaired by CSSEL's CRO and comprises members of senior risk and business managers. The purpose of the RMC is to:

- Ensure that proper standards for risk oversight and management are in place;
- Make recommendations to the CSSEL Board on risk appetite;
- Review the Internal Capital Adequacy Assessment Process ('ICAAP') and the Individual Liquidity Adequacy Assessment Process ('ILAAP') and make recommendations to the CSSEL Board;
- Define and establish risk limits for individual businesses and at the portfolio level within authorities delegated by the CSSEL Board;
- Review and implement appropriate controls over remote booking risk relating to CSSEL.

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

- **The CSSEL Credit Risk Committee:** chaired by CSSEL's Chief Credit Officer, defines and implements the CSSEL Credit Risk Framework. It is responsible for reviewing emerging risks and assessing the impact of any issues that impact the CSSEL 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 CSSEL Market Risk Committee:** chaired by CSSEL's Head of Market Risk, defines and implements the CSSEL Market Risk Framework. It is responsible for reviewing emerging risks and assessing any issues that impact on the CSSEL market risk profile. This process is supported by the Market & Liquidity Risk Management department ('MLRM') which is responsible for assessing and monitoring the market and liquidity risk profiles of the Company and recommends corrective action where necessary;
- **The CSSEL Operational Risk Committee:** chaired by CSSEL's Head of Operational Risk, is responsible for defining and implementing the Operational Risk Framework. It is responsible for reviewing emerging risks and assessing the impact of any issues on the operational risk profile. This process is supported by the Operational Risk Management ('ORM') department which is responsible for the identification, assessment, and monitoring of operational risks;
- **The CSSEL Stress Testing Committee:** chaired by CSSEL's Head of Enterprise Risk, is responsible for identifying, developing and maintaining appropriate stress scenarios which are relevant for CSSEL based on material risk factors. This process is supported by the Enterprise Risk Management ('ERM') 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; and
- **The CSSEL Reputational Risk Committee:** co-chaired by the CSSEL CRO, CSSEL CCO and Deputy CEO CSSEL, is responsible for reviewing and approving transactions that pose a material risk to the company's reputation and are escalated as having potential to have a negative impact on the Bank'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 Defence, providing independent appraisal and facilitating the calibration of such risks.

The departments which support the CSSEL Risk Heads form part of a matrix management structure with reporting lines into both the CSSEL CRO and the relevant Global Risk Head. Furthermore, these departments are supported by a global infrastructure and data process which is maintained by the Risk and Finance Data and Reporting ('RFDAR') group. Support is also provided by the Global Risk functions in areas such as model development, credit analytics etc.

Risk appetite

Risk appetite represents the aggregate level and types of risk CSSEL is willing to assume within the risk capacity 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:

1. Risk Appetite Statements.
2. Risk limits and/or metrics.
3. Roles and responsibilities of those overseeing the implementation and monitoring of the Risk Appetite Framework.

The Risk Appetite Framework incorporates all material risks facing CSSEL 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 CSSEL 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 Framework is outlined 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 Credit Suisse code of conduct and proactively identify sources of risk and/or breaches that may damage or 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 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;
- Minimizing Reputational Risk: Avoid any transactions or services that brings with it the risk of an unacceptable level of damage to our reputation;
- Managing Operational Risk: Ensure sound management of operational risk in 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 RMC and CRO are 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 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, 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 CSSEL'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 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 enterprise risk limits.

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

CSSEL's financial risk management objectives and policies and the exposure of CSSEL to market risk, credit risk, liquidity risk and currency risk are also considered in the 2016 Annual Report, Note 38 – 'Financial Instruments Risk Positions'.

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 CSSEL's financial risks. The enterprise-wide stress testing process begins with a scenario setting process, with the choice of scenarios being approved by the Stress Testing Committee. The scenarios are designed to be severe, but plausible, and relevant to CSSEL'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.

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 ('AIRB') to risk weights. Certain exposure classes are treated under the Standardised Approach to risk weights.

Credit exposures, RWAs and capital requirements

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

The following table contains an analysis of CSSEL's actual and average credit exposures, RWAs and capital requirements. Credit exposures are stated before the effects of credit risk mitigation ('CRM').

Credit exposures and RWAs by exposure classes (USD million)

Credit exposures by regulatory approach:	Exposure at default (pre-CRM)		RWAs		Capital requirement
	Average for year	Year-end	Average for year	Year-end	Year-end
<i>Standardised Approach</i>					
Central governments or central banks	239	223	595	554	44
Public sector entities	99	141	20	28	2
Multilateral development banks	35	23	0	0	0
Institutions	8,483	7,666	1,555	1,290	103
Corporates	1,675	926	991	938	75
Claim on institutions and corporates with a short-term credit assessment	10,599	9,003	775	557	45
Other items	103	140	103	140	11
Total Standardised Approach	21,233	18,122	4,039	3,507	280
<i>AIRB Approach</i>					
Central governments and central banks	3,431	1,697	679	313	25
Institutions	9,426	7,075	1,912	1,490	119
Corporates	24,449	21,993	10,237	8,798	704
Equity	22	8	64	24	2
Non-credit obligation assets	6	7	6	7	1
Total AIRB Approach	37,334	30,780	12,898	10,632	851
Total	58,567	48,902	16,937	14,139	1,131

The following table contains a geographical analysis of credit exposures (before the effects of credit risk mitigation):

Credit exposures – analysed by geographical region (USD million)

As at 31 December 2016						
Credit exposures by regulatory approach:	UK	Other Europe	Americas	Middle East and Africa	Asia Pacific	Total
<i>Standardised Approach</i>						
Central governments or central banks	222	1	0	0	0	223
Public sector entities	0	0	0	0	141	141
Multilateral development banks	23	0	0	0	0	23
Institutions	1,547	1,792	1,933	0	2,394	7,666
Corporates	48	325	335	1	217	926
Claim on institutions and corporates with a short-term credit assessment	723	176	7,422	0	682	9,003
Other items	0	2	138	0	0	140
Total Standardised Approach	2,563	2,296	9,828	1	3,434	18,122
<i>AIRB Approach</i>						
Central governments and central banks	121	1,309	0	219	48	1,697
Institutions	1,154	5,587	174	10	150	7,075
Corporates	3,976	6,934	6,061	1,276	3,746	21,993
Equity	0	8	0	0	0	8
Non-credit obligation assets	7	0	0	0	0	7
Total AIRB Approach	5,258	13,838	6,235	1,505	3,944	30,780
Total	7,821	16,134	16,063	1,506	7,378	48,902

The following table contains an analysis of credit exposures by type of industry (before the effects of credit risk mitigation).

Credit exposures – analysed by industry (USD million)

As at 31 December 2016				
Credit exposures by regulatory approach:	Financial	Commercial	Public Authorities	Total
<i>Standardised Approach</i>				
Central governments or central banks	0	0	223	223
Public sector entities	141	0	0	141
Multilateral development banks	0	0	23	23
Institutions	7,666	0	0	7,666
Corporates	923	3	0	926
Claim on institutions and corporates with a short-term credit assessment	9,000	3	0	9,003
Other items	3	137	0	140
Total Standardised Approach	17,733	143	246	18,122
<i>AIRB Approach</i>				
Central governments and central banks	1,517	0	180	1,697
Institutions	7,075	0	0	7,075
Corporates	18,347	3,645	1	21,993
Equity	8	0	0	8
Non-credit obligation assets	0	7	0	7
Total AIRB Approach	26,947	3,652	181	30,780
Total	44,680	3,795	427	48,902

The following table contains an analysis of credit exposures by residual maturity (before the effects of credit risk mitigation):

Credit exposures – analysed by residual maturity (USD million)

As at 31 December 2016				
Credit exposures by regulatory approach:	Up to 12 months	1 - 5 years	Greater than 5 years	Total
<i>Standardised Approach</i>				
Central governments or central banks	223	0	0	223
Public sector entities	0	141	0	141
Multilateral development banks	23	0	0	23
Institutions	5,124	1,839	703	7,666
Corporates	605	151	170	926
Claim on institutions and corporates with a short-term credit assessment	9,003	0	0	9,003
Other items	3	137	0	140
Total Standardised Approach	14,981	2,268	873	18,122
<i>AIRB Approach</i>				
Central governments and central banks	150	1,547	0	1,697
Institutions	5,600	1,475	0	7,075
Corporates	13,052	6,889	2,052	21,993
Equity	8	0	0	8
Items representing securitisation positions	0	0	0	0
Non-credit obligation assets	7	0	0	7
Total AIRB Approach	18,817	9,911	2,052	30,780
Total	33,798	12,179	2,925	48,902

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 (eg. interest rates and foreign exchange rates), which can be volatile and uncertain in nature. CSSEL enters into derivative contracts in the normal course of business for market-making and positioning, as well as for risk management needs, including mitigation of interest rate, foreign currency, credit and other risks.

Counterparty credit exposure by regulatory approach

CSSEL 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.

The following table analyses derivative exposures by regulatory method. CCRMTM exposures are not measured using a modelled approach but are subject to netting and collateral offsets. The value of collateral is adjusted with own estimates of volatility. The value of collateral is adjusted with own estimates of volatility.

Net derivatives credit exposure (USD million)

As at 31 December 2016					
	Gross positive fair value of contracts ⁽ⁱ⁾	Netting benefits	Netted current credit exposure	Collateral held	Net derivatives credit exposure
CCR Mark to Market Method	29,092	(16,341)	12,750	(6,698)	6,052
Total	29,092	(16,341)	12,750	(6,698)	6,052

(i) including Gross PFCE

The regulatory exposure for secured financing transactions is calculated using the Master Netting Agreement Method with own estimates of volatility.

Credit derivative contracts – notional exposure

The following table analyses the notional values of credit derivatives by both own credit portfolio and intermediation activities. Own credit portfolio positions consist of trades used for hedging and credit management whereas intermediation refers to all credit derivative market-making activity.

Counterparty credit risk exposure – credit derivatives (USD million)

As at 31 December 2016			
	Protection bought	Protection sold	Total
<i>Intermediation activity</i>			
Credit default swaps	1,748	362	2,110
Total credit derivative notional value	1,748	362	2,110

Effect of a credit rating downgrade

CS monitors the level of incremental collateral that would be required by derivative counterparties in the event of a CS group ratings downgrade.

The impact of a downgrade to CS long-term debt ratings is considered in the stress assumptions used to determine the liquidity and funding profile of CSSEL. CSSEL holds a liquidity pool made up of 'high quality liquid assets' ('HQLA') to meet additional collateral calls or settlement payments as a result of a downgrade. The assessment takes into consideration potential contingent liquidity outflows arising from a two-notch downgrade in CS credit ratings.

Credit limits, approval and reviews

A primary responsibility of Credit Risk Management is to monitor counterparty exposure and the creditworthiness of a counterparty, both at the initiation of the relationship and on an ongoing basis. Part of the review and approval process is an analysis and discussion to understand the motivation of the client and to identify the directional nature of the trading in which the client is engaged. Credit limits are agreed in line with CSSEL'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 (eg. level of collateral). All credit exposure is approved, either by approval of an individual transaction or facility (eg. lending facilities), or under a system of credit limits (eg. OTC derivatives). Credit exposure is monitored daily to ensure it does not exceed the approved credit limit. These credit limits are set either on a potential exposure basis or on a notional exposure basis. Potential exposure means the possible future value that would be lost upon default of the counterparty on a particular future date, and is taken as a high percentile of a distribution of possible exposures computed by CSSEL's internal exposure models. Secondary debt inventory positions are subject to separate limits that are set at the issuer level.

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 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 a 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.

As of 1st January 2017 CSSEL must comply with the EBA's guidelines on the management of exposure to non-regulated entities carrying out credit intermediation activities. CSSEL has established a framework for managing exposures to shadow banks, the majority of which will be managed under the principal approach. A small number of counterparties will be managed under the regulatory fallback approach, and exposure to these entities is well below the regulatory limit.

Credit risk reporting and measurement

The Credit 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 Firm, CRO management, and various risk management committees as well as external stakeholders such as regulators.

CSSEL'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.

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. On a semi-annual basis, the residual risk associated with risk transference and concentration to specific protection providers is considered within the Risk Management Framework. The amount of credit risk arising from the concentration to protection providers is not considered to be material.

Collection 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. CSSEL'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 CSSEL 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 prudent 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 CSSEL'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 document 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.

The following table analyses the amount of regulatory exposure covered by unfunded and funded credit risk mitigation, reported by risk weight methodology and exposure class:

Analysis of credit exposures covered by unfunded and funded credit protection (USD million)

As at 31 December 2016		
	Unfunded	Funded
	Guarantees	Financial Collateral
<i>Standardised Approach</i>		
Institutions	607	11
Claim on institutions and corporates with a short-term credit assessment	6,341	0
Total Standardised Approach	6,948	11
<i>AIRB Approach</i>		
Institutions	0	6,949
Total AIRB Approach	0	6,949
Total	6,948	6,960

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.

CSSEL 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 net in one single payment.

Wrong-way exposures

Wrong-way risk arises when CSSEL 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 CSSEL'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 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. Exposures that exhibit wrong-way characteristics are given higher risk weighting than non-correlated transactions, 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 by RFDAR. 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 defence 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.

Internal ratings based approach

The Basel Framework permits firms 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, and CSSEL 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 CSSEL 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, CSSEL calculates the credit risk capital requirement for equity exposures using the Simple Risk Weight Approach.

Portfolios subject to PD and LGD approach

The following tables contain, for principal exposure classes, an analysis by grade of exposures, risk weights, credit conversion factors ('CCFs') and loan exposures (stated before the effects of CRM):

IRB obligor grade disclosure – central governments and central banks

31 December 2016				
	Total exposure (USD million)	Exposure-weighted average LGD (%)	Exposure-weighted average risk weight (%)	Exposure-weighted CCF (%)
AAA	2	52.0	6.5	100.0
AA	1,504	56.9	16.2	100.0
A	191	100.0	36.0	100.0
B or lower	0	52.0	288.6	100.0
Unrated	0	0	0	0
Total	1,697	61.7	18.5	100.0

IRB obligor grade disclosure – institutions

31 December 2016				
	Total exposure (USD million)	Exposure-weighted average LGD (%)	Exposure-weighted average risk weight (%)	Exposure-weighted CCF (%)
AA	1,307	57.4	10.2	100.0
A	5,246	55.5	19.6	100.0
BBB	446	56.0	44.8	100.0
BB	20	69.0	115.5	100.0
B or lower	56	57.9	186.3	100.0
Unrated	0	0.0	0.0	100.0
Default (net of specific provision)	0	55.5	100.0	100.0
Total	7,075	55.9	21.1	100.0

IRB obligor grade disclosure – corporates

31 December 2016				
	Total exposure (USD million)	Exposure-weighted average LGD (%)	Exposure-weighted average risk weight (%)	Exposure-weighted CCF (%)
AAA	468	55.5	8.0	100.0
AA	9,601	60.1	10.8	100.0
A	6,352	59.9	28.4	100.0
BBB	2,186	64.8	71.6	100.0
BB	2,029	58.3	123.1	100.0
B or lower	552	56.5	191.1	100.0
Unrated	800	55.5	99.8	100.0
Default (net of specific provision)	5	55.5	100.0	100.0
Total	21,993	60.0	40.0	100.0

Geographical breakdown of LGD and PD (%)

As at 31 December 2016	Central governments and central banks	Institutions	Corporates
<i>Exposure-weighted average LGD (%)</i>			
UK	52.0	55.5	55.5
Other Europe	55.5	55.5	55.8
Americas	0.0	56.7	56.6
Middle East and Africa	100.0	100.0	95.4
Asia Pacific	82.5	72.0	65.9
Exposure-weighted average LGD (%)	61.7	55.9	60.0
<i>Exposure-weighted average PD (%)</i>			
UK	0.0	0.1	0.4
Other Europe	0.0	0.1	0.2
Americas	0.0	0.3	0.6
Middle East and Africa	0.0	0.5	0.1
Asia Pacific	0.0	0.0	0.2
Exposure-weighted average PD (%)	0.0	0.1	0.3

Rating models

The majority of the credit rating models used by CSSEL 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). CSSEL also uses models purchased from recognised data and model providers (eg. credit rating agencies). These models are owned by Credit Analytics and are validated internally and follow the same governance process as models developed internally.

All new or material changes to rating models are subject to a robust governance process. After development and validation of a rating model or model change, the model is reviewed by a number of 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 CSSEL 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 CSSEL and over time. All models whose outputs fall into the scope of the Basel internal model framework are subject to regular independent model validation. Where used, externally developed models are subject to the same governance and validation standards as internal models.

Newly-developed models in scope for the Basel internal model framework must be validated and approved before 'go-live'; a similar process is followed for 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 the academic literature and industry practice.

Results and conclusions are presented to senior risk management; 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 some cases 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. CSSEL has a PD model (PD-Masterscale), 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. An annual default rate is 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 judgment based process which captures key factors specific to the type of counterparty.

The exposures in scope of CSSEL'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 back-tested against internal experience.

EAD for loan products is calculated following the CCF approach. In particular, the scope of the CCF model is irrevocable commitments under regular loans. Under this approach, a scalar CCF is used to convert an undrawn but committed amount into a loan equivalent. Specifically, 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 (ie. 12 months prior to default). This information is sourced from CSSEL's default and loss database. CCFs include downturn and conservative add-ons. CCF estimates are annually back-tested against recent internal experience.

For PD, LGD and CCF parameters, there are no deviations from the Basel 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 should 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 should 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 should include both quantitative and qualitative factors. The review should 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 CSSEL 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 should be reflected in the assessment if relevant. The analysis should 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 CSSEL 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. CSSEL'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 CSSEL'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 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 CSSEL 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.

Regulatory expected loss versus actual outcome

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

Actual loss comprises net specific impairment losses during the year for loans held at amortised cost, loans accounted for at fair value losses and derivatives. The actual value charges provide an equivalent impairment measure for both fair value loans and counterparty derivative exposures similar to loans held at amortised cost (excluding any realised credit default swap gains). The actual value charged may not necessarily be the same as the fair value movements recorded through the income statement.

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

The following table presents the actual loss by exposure class. The actual outcome was a result of low default rates and high market liquidity during the year.

Analysis of expected loss versus actual loss for AIRB exposures (USD million)

2016		
<i>IRB exposure class</i>	Expected loss (beginning of year)	Actual loss
Central governments and central banks	1	0.0
Institutions	4	0.0
Corporates	38	0.0
Equity	0	0.0
Total	43	0.0

Credit model performance – estimated versus actual PD, LGD and CCF

The following table presents the forecast and actual PD, LGD and CCF for exposures under the AIRB approach. Estimated values of PD, LGD and CCF reflect probable long-run average values, allowing for possible good and bad outcomes in different years. As they represent long-run averages, the PD, LGD and CCF values shown below are not intended to predict outcomes in any particular year, and cannot be regarded as predictions of the corresponding actual reported results.

Estimated PD, LGD and CCF are taken from each model and then mapped to the regulatory exposure class. In the table below, the comparison between actual and estimated parameters is derived from the latest available internal multi-year model development and calibration data. Some of these values (marked with * or **) should be interpreted cautiously as they are based on relatively few observations. Disclosed values are not directly comparable to previous years due to the extension of the covered period.

Analysis of expected credit model performance versus actual results

	PD of total portfolio (%)		LGD of defaulted assets (%)		CCF of defaulted assets (%)	
	Estimated	Actual	Estimated	Actual	Estimated	Actual
Central governments and central banks	0.14	-	-	-	-	-
Institutions	0.88	*0.53	-	-	-	-
Corporates	2.82	*0.11	-	-	-	-

* Value based on low observations (<20)

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 carrying value of Banking Book equity exposure in CSSEL stood at USD8.3m at 31 December 2016 (2015: USD1.5m).

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 CSSEL are Standard & Poor's and Moody's.

Credit quality steps and corresponding risk weights under the Standardised Approach

Credit quality step	Credit rating agency		Risk weights (%)		
	Standard and Poor's	Moody's	Central government and central banks	Corporate	Institutions greater than 3 months maturity
1	AAA to AA-	Aaa to Aa3	0	20	20
2	A+ to A-	A1 to A3	20	50	50
3	BBB+ to BBB-	Baa1 to Baa3	50	100	50
4	BB+ to BB-	Ba1 to Ba3	100	100	100
5	B+ to B-	B1 to B3	100	150	100
6	CCC+ and below	Caa1 and below	150	150	150

The following tables analyse credit exposures treated under the Standardised Approach to risk weights according to CQS and exposure class, before and after CRM:

Credit quality step analysis of pre-CRM exposure and capital deductions under the Standardised Approach (USD million)

As at 31 December 2016

	Credit quality step						Unrated	Total	Deduction from capital resources
	1	2	3	4	5	6			
Standardised Approach - credit exposures									
Central governments or central banks	0	0	0	0	0	0	223	223	0
Public sector entities	0	0	0	0	0	0	141	141	0
Multilateral development banks	23	0	0	0	0	0	0	23	0
Institutions	164	1,112	72	0	0	0	6,318	7,666	0
Corporates	54	0	47	0	103	0	722	926	0
Claim on institutions and corporates with a short-term credit assessment	902	7,630	78	0	0	0	393	9,003	0
Other items	0	0	0	0	0	0	140	140	0
Total	1,143	8,742	197	0	103	0	7,937	18,122	0

Credit quality step analysis of post-CRM exposure and capital deductions under the Standardised Approach (USD million)

As at 31 December 2016

	Credit quality step						Unrated	Total	Deduction from capital resources
	1	2	3	4	5	6			
Standardised Approach - credit exposures									
Central governments or central banks	0	0	0	0	0	0	223	223	0
Public sector entities	0	0	0	0	0	0	141	141	0
Multilateral development banks	23	0	0	0	0	0	0	23	0
Institutions	164	1,103	72	0	0	0	5,707	7,046	0
Corporates	54	0	47	0	103	0	721	925	0
Claim on institutions and corporates with a short-term credit assessment	902	1,288	78	0	0	0	393	2,661	0
Other items	0	0	0	0	0	0	140	140	0
Total	1,143	2,391	197	0	103	0	7,325	11,159	0

Securitisation

Overview

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

CSSEL has not undertaken any new securitisations of Banking Book assets during the year. It holds securitisation positions in its Trading Book in order to meet clients' investment and divestment needs by making markets in securitised products across all major collateral types.

CSSEL'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 valued at fair value, 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 CSSEL'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 CSSEL'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.

Management of credit and market risk

CSSEL 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.

CSSEL 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 mortgage and asset-backed securities ('ABS') and collateralised debt obligation ('CDO') 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. CSSEL 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 CSSEL'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 place 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 CSSEL has applied credit risk mitigation approaches to Banking Book securitisation or re-securitisation exposures. CSSEL does not typically retain material servicing responsibilities from securitisation activities.

Calculation of RWAs

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 RWAs are calculated following the hierarchy of 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 CSSEL 2016 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 CSSEL 2016 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 CSSEL 2016 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 CSSEL 2016 Annual Report.

Trading Book securitisation exposures

There were USD 3.2m of exposures securitised by CSSEL which were outstanding at 31 December 2016 and held in the Trading Book at that date. All of these exposures were treated as unrated exposures under the Ratings Based Approach and deducted from capital.

There were no losses, impairments or past due items in relation to securitised Trading Book exposures as at 31 December 2016.

Banking Book securitisation exposures

The amount of exposures securitised by CSSEL and which were outstanding at 31 December 2016 and securitisation positions held in the Banking Book at that date was equal to zero.

Banking Book – losses, impaired and past due assets

There were no losses, impairments or past due items in relation to securitised Banking Book exposures at 31 December 2016.

Market risk

Overview

CSSEL 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. CSSEL uses market risk measurement and management methods in line with industry standards. These include general tools capable of calculating comparable exposures across CSSEL'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 CSSEL's capital requirement for market risk (Trading Book unless otherwise stated):

Market risk capital requirement (USD million)				
As at 31 December	2016		2015	
	RWAs	Capital requirement	RWAs	Capital requirement
<i>PRA Standard Rules</i>				
Interest rate risk on securitisations and tranching risk positions	0	0	60	5
Foreign exchange (Banking Book)	121	10	545	44
Total PRA Standard Rules	121	10	605	49
<i>Internal Models Approach</i>				
VaR	889	71	1,409	113
Stressed VaR	2,239	179	2,708	177
Risks not in VaR ('RNIV')	2,109	169	1,760	141
Stressed RNIV	1,661	133	844	68
Incremental risk charge ('IRC')	1,145	92	455	36
Total Internal Models Approach	8,044	644	7,176	535
Total market risk RWAs and capital requirement	8,166	654	7,781	584

Risk measurement and management

For the purposes of this disclosure, 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).

CSSEL is mainly active in the Credit and Equity trading markets of the world, using the majority of common trading and hedging products in these markets, including derivatives such as credit default swaps, futures and , to a lesser extent, options.

Scope of IMA calculations: Criteria for inclusion in the Trading Book

CSSEL 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 verification 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 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

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

IMA Metrics (USD million)			
2016			
	Regulatory VaR (10-day)	Stressed VaR (10-day)	IRC
Average	30.9	65.4	49.5
Minimum	15.4	41.4	29.7
Maximum	48.0	106.1	93.8
End of period	20.8	52.2	91.6

CSSEL received permission from the PRA to use internal models to calculate Trading Book market risk capital requirements under the IMA permission. CSSEL applies the IMA models to the majority of the positions in its Trading Book. CSSEL continues to seek regulatory approval for ongoing enhancements to the IMA methodologies where applicable. Stressed VaR replicates a VaR calculation in CSSEL's current portfolio taking into account a one-year observation period relating to significant financial stress (this period is appropriately selected looking at data since 2006) and helps to reduce the pro-cyclicality of the minimum capital requirements for market risk. The VaR model does not cover all identified market risk types, and as such CSSEL also captures Risks-Not-In-VaR (RNIV) through capital additions.

Credit correlation products (including ABS positions) are not fully covered by the VaR model approval. These positions are permitted to remain in VaR, but CSSEL is additionally required to hold capital under standard rules for specific risk as set out in the CRR.

VaR measures the potential loss in terms of fair value of financial instruments due to adverse market movements over a defined time horizon at a specified confidence level. The use of VaR allows the comparison and aggregation of risk across different asset classes, businesses and Divisions, reflecting the diversification in existence across them.

CSSEL uses an historical simulation model as the basis for the VaR model. Historical financial market rates, prices and volatilities are the main risk factors used by the historical simulation model. This methodology avoids any explicit assumptions on correlation between risk factors. CSSEL uses a ten-day holding period and a confidence level of 99% for the Regulatory VaR and Stressed VaR models. These assumptions are compliant with CRR requirements. CSSEL uses the same underlying VaR model for risk management and regulatory capital purposes, with identical confidence levels and holding periods used.

To ensure that VaR responds appropriately in times of market stress, CSSEL uses a scaling technique that automatically increases VaR where the short-term market volatility is higher than the long-term volatility in the most recent three-year dataset.

The VaR model uses assumptions and estimates that CSSEL believes are reasonable, but changes to assumptions or estimates could result in a different VaR measure. The main assumptions and limitations of VaR as a risk measure are:

- VaR relies on historical data to estimate future changes in market conditions, which may not capture all potential future outcomes, particularly where there are significant changes in market conditions;
- although VaR captures the interrelationships between risk factors, these interrelationships may break down during stressed market conditions;
- VaR provides an estimate of losses at a 99% confidence level, which means that it does not provide any information on the size of losses that could occur beyond that threshold;
- VaR is based on a ten-day holding period. This assumes that risks can be either sold or hedged over that period, which may not be possible for all types of exposure, particularly during periods of market illiquidity or turbulence; and
- VaR is calculated using positions held at the end of each business day and does not include intraday changes in exposures.

For some positions there can be limited historical data (often because underlying instruments have only traded for a limited time). Where CSSEL does not have sufficient market data, either market data proxies or extreme moves (representing a 99% movement in the risk factor calculated on the available data) for these positions are used. Market

data proxies are selected to be as close to the underlying instrument as possible. Where neither sufficient historical data nor a suitable proxy is available, extreme moves are used. Extreme moves are aggregated assuming a conservative 100% correlation. Risks that are not currently implemented within CSSEL's VaR model such as certain basis risks, higher order risks and cross risks are captured through RNIV calculations.

CSSEL uses a risk factor identification process to ensure that any potentially missing risk is identified and measured correctly. There are two parts to this process. First, the market data dependency approach systematically determines the risk requirements based on data inputs used by Front Office pricing models and compares this with the risk types that are captured by the Firms's VaR model and the RNIV framework. Second, the product-based approach is a qualitative analysis of product types to identify the risk types that those product types would be exposed to. A comparison is again made with the risk types that are captured in the VaR and RNIV frameworks. Through this process, risks that are not yet captured in the VaR model or the RNIV framework are identified. A plan for including these risks in one of these frameworks can then be formulated.

CSSEL's VaR model is subject to internal governance including model validation independent from model developers. Validation includes identifying and testing the model's assumptions and limitations, investigating its performance through historical and potential future stress events, and testing that the live implementation of the model behaves as intended.

CSSEL 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, both the Market Risk Quant Steering Committee and the UK Model Performance Committee will review model performance and approve any new or amended models.

Value at risk back-testing

Various techniques are used to assess the accuracy of the VaR model used for trading portfolios, including back-testing. In line with industry practice, CSSEL undertakes back-testing 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 back-testing exception occurs when the daily trading loss exceeds the daily VaR estimate. CSSEL had five back-testing exception in 2016 (2015: one).

For capital purposes, the PRA applies a multiplier to the 60-day average of the VaR and Stressed VaR metrics. The multiplier is increased for every back-testing exception over four in the prior rolling 12-month period calculated using actual and hypothetical daily trading revenues.

Incremental risk capital charge

The IRC model is required to measure the aggregate risk from the exposure to issuer default and rating migration risk from positions in the Trading Book. The exposures that contribute to IRC are positions where CSSEL is exposed to any profit or loss on default or rating migration of the issuer. Positions excluded from IRC include equity positions, securitisation positions and credit correlation products (such as synthetic CDOs and nth-to-default ('NTD') trades).

The IRC model assesses risk at 99.9% confidence level over a one-year time horizon with a constant level of risk assumption.

The way a position impacts the overall IRC metric also depends on its liquidity horizon which represents the time required to sell the positions or hedge all material risk covered by the IRC model in a stressed market. Liquidity horizons are modelled according to the regulatory requirements. In general, positions with shorter assigned liquidity horizons will contribute less to overall IRC.

The IRC model and liquidity horizon methodology have been validated by an independent team in accordance with CSSEL's Model Validation policy and the Risk Model Validation Sub-Policy for IRC.

The IRC-weighted average liquidity horizons by portfolio are shown in the table below:

IRC-weighted average liquidity horizon

As at 30 December 2016	
<i>Sub-portfolio</i>	Months
Asia Pacific Region	8.5
Global Markets	7.0
Strategic Resolution Unit	9.5
Entity IRC-weighted average liquidity horizon	7.0

Scenario analysis

Stress testing complements other risk measures by capturing CSSEL'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 CSSEL'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.

CSSEL'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 CSSEL'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.

Valuation process

The Basel capital adequacy framework and CRR provide guidance for systems and controls, valuation methodologies and valuation adjustments and reserves to provide prudent and reliable valuation estimates.

Financial instruments in the Trading Book are carried at fair value. The fair value of the majority of these financial instruments is marked-to-market based on quoted prices in active markets or observable inputs. Additionally, CSSEL holds financial instruments which are marked-to-model where the determination of their fair value requires a subjective assessment and varying degrees of judgment depending on liquidity, concentration, pricing assumptions and the risks affecting the specific instrument.

Control processes are applied to ensure that the reported fair values of the financial instruments, including those derived from pricing models, are appropriate and determined on a reasonable basis. These control processes include approval of new instruments, timely review of profit and loss, risk monitoring, price verification procedures and validation of models used to estimate the fair value. These functions are managed by senior management and personnel with relevant expertise, independent of the trading and investment functions.

In particular, the price verification function is performed by Product Control, independent from the trading and investment functions, reporting directly to the Chief Financial Officer, a member of the Executive Board.

The valuation process is governed by separate policies and procedures. To arrive at fair values, the following type of valuation adjustments are typically considered and regularly assessed for appropriateness: model, parameter, credit and exit-risk-related adjustments.

CSSEL believes it complies with the relevant valuation guidance and that the estimates and assumptions used in valuation of financial instruments are prudent, reasonable and consistently applied.

Further information on fair value can be found in the 2016 Annual Report: Note 2, Significant Accounting Policies; Note 3, Critical Accounting Estimates and Judgements in Applying Accounting Policies and Note 35 Financial Instruments.

Prudent valuation

CSSEL has processes and procedures in place to ensure compliance with Basel Committee on Banking Supervision ('BCBS') guidance on prudent valuation, specifically Article 105 of the CRR. CSSEL maintains systems and controls to incorporate the elements specified in the guidance, and relevant factors are taken into consideration for fair value purposes.

Additionally CSSEL's capital treatment in regards to prudent valuation is assessed in accordance with guidance published by the PRA. As a result, CSSEL considers its fair value inventory and applies additional prudent valuation adjustments which are deducted from CET1 capital.

Interest rate risk in the Banking Book

Overview

CSSEL manages the interest rate risk in the Banking Book which includes monitoring the potential impact of changes in interest rates. CSSEL'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 CS Group Treasury on a portfolio basis within approved limits using appropriate hedging instruments. The CS Group Board of Directors defines interest rate risk appetite for the group and its subsidiaries, including CSSEL, on an annual basis. Furthermore, the CSSEL 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
- **economic value scenario analysis**: 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. More specifically, the metrics estimate the impact on the economic value of the current portfolio, ignoring dynamic aspects such as the time schedule of how changes in economic value materialise in profit and loss (since most non-trading books are not marked-to-market) and the development of the portfolio over time.

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

Monitoring and review

The economic impacts of adverse parallel shifts in interest rates of 200 basis points 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 in the PRA's determination of CSSEL's Pillar 2 capital requirement.

Despite the low interest rate environment, the full down 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 30 December 2016						
	USD	GBP	EUR	CHF	Other	Total
Fair value impact of a one-basis-point parallel increase in yield curves	0.0	0.0	0.1	0.0	0.0	0.1

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

As at 30 December 2016						
Basis points movement + / (-)	USD	GBP	EUR	CHF	Other	Total
200	-22.3	1.4	11.6	-0.2	0.5	-9.0
100	-6.8	-1.2	5.8	0.0	0.2	-2.0
(100)	-1.9	5.1	-5.8	0.1	0.0	-2.5
(200)	-12.5	13.9	-11.6	0.2	-0.1	-10.1

Operational Risk

Overview

The Operational Risk Policy sets out the principles and framework for managing operational risk in CSSEL. The Operational Risk Framework ('the Framework') provides a systematic approach to operational risk management. The Framework comprises a series of interrelated components that CSSEL uses to identify, measure, monitor and control operational risks in line with its risk appetite across all divisions, regions and legal entities. These components include policies, systems, processes, measurement techniques, reporting mechanisms and governance arrangements that have been designed to provide a robust and comprehensive approach to managing operational risks. The Framework components are periodically updated and enhanced to ensure they remain effective and that the components work well together.

Operational risk appetite

The Operational Risk Appetite is a forward-looking view of risk acceptance that articulates the nature, types and levels of operational risk that the Firm is willing to assume in pursuit of its business activities. It sets out the boundaries within which senior management is expected to operate when pursuing CSSEL's strategy. The risk appetite is expressed in both quantitative and qualitative terms where quantitative tolerance levels are based on operational risk incidents and qualitative statements cover risk outcomes that should be avoided. The tolerance levels and statements for CSSEL are approved by the Board. Any breaches of the Operational Risk Appetite trigger actions under the Responses Framework (described below).

Operational risk register

The Operational Risk Register ('ORR') comprises a catalogue of inherent operational risks arising as a consequence of business activities and is the most granular classification of operational risks used by CSSEL. It provides a standardised terminology of inherent risks across CSSEL covering inherent operational risks on a front-to-back basis, ie. risks inherent in business divisions and Corporate Functions. It also provides the basis to identify, assess, mitigate and monitor operational risk throughout the CS group, as well as providing the capability to aggregate and report residual operational risk exposure. As such, it also constitutes the basis for conducting 'risk and control self-assessments' and determining 'Top Operational Risks'.

Internal control

Internal controls are designed to ensure that our processes follow agreed policies, these processes operate as intended and that associated risks within CSSEL are appropriately mitigated. The ORM Framework and Governance has defined guidance to ensure that controls are executed, assessed and evidenced on a consistent and comprehensive basis, with a focus on CSSEL's key risks and controls. Certain key controls are subject to independent testing to evaluate their effectiveness. The results of these tests are considered by other operational risk framework components, such as in the risk and control self-assessment ('RCSA') process.

Risk and control indicators

Risk and control indicators are metrics that provide information on operational risk exposures and the effectiveness of controls, respectively. From their monitoring, trends in indicator performance can be used to assess whether risks or controls are improving or deteriorating. Business divisions and Corporate Functions typically monitor a wide variety of metrics, including those deriving from the Operational Risk Framework.

Incident data

CSSEL uses the output of investigations into internal and relevant external incidents to inform its risk measurement and management processes. This includes both incidents that result in economic losses or those which provide information on potential control gaps, even if no losses occurred. Internal and external incidents are subject to separate review and assessment processes that reflect differences in the amounts of available information and degree of applicability to CSSEL.

Risk and control self-assessment process

The risk and control self-assessment ('RCSA') process is a comprehensive, bottom-up assessment of the key operational risks in each business division and Corporate Functions. It comprises a self-assessment for all applicable inherent risks, an evaluation of the effectiveness of the controls in place to mitigate these risks and a decision to either accept or remediate any residual risks. The RCSA process utilises other components of the operational risk framework, such as risk and control indicators and incident data, and they generate outputs that are used to manage and monitor CSSEL's residual risks. The self-assessments are subject to rigorous second line review and challenge by the Operational Risk Management function, along with quality assurance to ensure that they have been conducted appropriately. At a minimum, business divisions and Corporate Functions must conduct an RCSA within each calendar year though more frequent updates may be triggered by material changes to the business environment or risk profile.

Top operational risks and remediation plans

Top Operational Risks ('TORs') are defined as the most significant residual operational risks that require executive level management oversight to avoid occurrence or prevent re-occurrence of significant incidents, significant regulatory scrutiny, enforcement or legal action, substantial damage to CSSEL's reputation or franchise or significant unmitigated risk in excess of risk appetite. Top Operational Risks are generated using both a top-down assessment by senior management and a bottom-up process that collates the main themes arising from the RCSA process.

Capital modelling and scenarios

CSSEL 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 ICAAP model 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 CSSEL'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.

Reporting

Operational risk reports provide information on a range of Framework components. These include formal reports to governance committees and senior management, as well as operating-level reports for risk analysts and managers.

Responses Framework

The Responses Framework provides a governance structure and process for how CSSEL responds to various kinds of operational risk event. The purpose of the Responses Framework is to ensure that operational risk events of various types and severity are reviewed by appropriate levels of management and to provide guidance on the range of possible responses in relation to incidents and breach management.

Operational risk change assessments

Operational risks associated with major change initiatives are identified, assessed and managed throughout the life of each program using the relevant components of the operational risk framework. It also considers the fact that even initiatives that are expected to deliver operational risk benefits upon completion may result in increased risks during the implementation phase. Outsourcing initiatives may be considered where the operational risk management department has determined certain materiality criteria are met.

Conduct and behaviour

The CS group has defined a set of ten 'business conduct behaviours' that are designed to reduce operational risk incidents. These behaviours incorporate lessons learned from previous incidents at CSSEL, peer firms and other industry types.

Conduct risk is the risk of poor conduct or behaviour of the CS group, its employees, associates or representatives that results in:

- financial or non-financial detriment to clients, customers and counterparties, whether the CS group deals with them directly or via a third party;
- damage to the integrity of the financial markets;
- ineffective competition in the markets in which the CS group participates; and

A UK Conduct Risk Committee ('UK CRC') has been established which is designed to enable CSSEL to review the effectiveness of the conduct risk framework and challenge business leaders on the suitability and effectiveness of the measures and tools used in their businesses to identify, control and mitigate conduct risk.

The UK CRC is tasked with sponsoring and reviewing appropriate policies and procedures and monitoring peer group and regulatory statements and developments with respect to conduct risk.

Leverage

Overview

The leverage ratio was introduced by the CRR from 2014, although prescribed regulatory requirements are not binding on financial institutions at this point in time. Subsequent amendments to the leverage ratio calculation methodology (including treatment of securities financing transactions, cash variation margin and credit default swap notional values) were proposed by BCBS and reflected in the amended CRR.

In conjunction with other regulatory and capital metrics such as RWA levels, leverage ratios are actively monitored and managed within CSSEL'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 CSSEL continues to meet external and internal expectations. CSSEL's stress testing framework will consider the impact on leverage ratios of both internal and regulator-prescribed stress tests.

Factors impacting the leverage ratio during the period

CSSEL's leverage ratio improved to 5.6% by December 2016 from 5.1% at 31 December 2015. This increase is mainly attributable to decrease in on-balance sheet other assets exposure.

Summary reconciliation of accounting assets and leverage ratio exposures (USD million)

As at 31 December 2016	
Total assets as per published financial statements	118,875
Adjustments for derivative financial instruments	5,608
Adjustments for securities financing transactions	32,255
Adjustment for off-balance sheet items	8,868
Other adjustments	(37,607)
Total leverage ratio exposure	127,999

Leverage ratio common disclosure (USD million)

As at 31 December 2016	
<i>On-balance sheet exposures (excluding derivatives and SFTs)</i>	
On-balance sheet items (excluding derivatives and SFTs, but including collateral)	43,813
Asset amounts deducted in determining Tier 1 capital	(908)
(i) Total on-balance sheet exposures (excluding derivatives and SFTs)	42,905
<i>Derivative exposures</i>	
Replacement cost associated with derivatives transactions	2,097
Add-on amounts for PFCE associated with derivatives transactions	8,280
Exempted CCP leg of client-cleared trade exposures	0
Adjusted effective notional amount of written credit derivatives	340
(ii) Total derivative exposures	10,717
<i>Securities financing transaction exposures</i>	
Gross SFT assets, after adjusting for sales accounting transactions	60,289
Counterparty credit risk exposure for SFT assets	5,220
(iii) Total securities financing transaction exposures	65,509
<i>Off-balance sheet exposures</i>	
Off-balance sheet exposures at gross notional amount	8,868
Adjustments for conversion to credit equivalent amounts	-
(iv) Total off-balance sheet exposures	8,868
Tier 1 capital	7,227
Total exposures ((i) - (iv))	127,999
Leverage ratio	5.6%

Split of on-balance sheet exposures by Banking and Trading Book (excluding derivatives and SFTs) (USD million)

As at 31 December 2016	
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	43,813
Trading book exposures	40,472
Banking book exposures, of which:	3,341
Exposures treated as sovereigns	196
Institutions	702
Corporate	2,443

Asset encumbrance

Overview

The main source of asset encumbrance within CSSEL relates to securities lending and derivatives transactions. Securities lending transactions encumber collateral through a combination of repurchase 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 CSSEL in excess of the minimum requirement, and collateral owed by CSSEL 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, various receivable balances (both trade and non-trade), intangible assets, deferred tax and tangible fixed assets. None of these asset types is considered available for encumbrance in the normal course of business.

Assets – encumbered and unencumbered asset analysis (USD million)

31 December 2016						
	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
<i>Assets</i>						
Loans on demand	1,218	0	8,804	0	10,022	0
Equity instruments	15,414	15,414	8,519	8,519	23,933	23,933
Debt securities	1,395	1,395	1,396	1,396	2,791	2,791
Loans and advances other than loans on demand	0	0	65,133	0	65,133	0
Other assets	0	0	16,996	0	16,996	0
Total assets	18,027	16,809	100,848	9,915	118,875	26,724

Collateral received (USD million)

31 December 2016		
	Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance
Collateral received		
Equity instruments	58,202	16,069
Debt securities	57,418	14,324
Total collateral received	115,621	30,393
Own debt securities issued other than own covered bonds or ABSs	0	0
Total	115,621	30,393

Carrying amount of encumbered assets and collateral received and associated liabilities (USD million)

31 December 2016		Carrying amount
Matching liabilities, contingent liabilities or securities lent		36,839
Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered		38,306

Appendix 1: Credit Suisse Investments (UK)

Overview

CSSEL is a wholly-owned subsidiary of Credit Suisse Investment Holdings (UK) ('CSIHUK') which, in turn, is a wholly-owned subsidiary of CSIUK. As the ultimate parent of a UK sub-group, CSIUK is the top holding company of a regulatory consolidation group. CSIUK and CSHUK are both holding companies and neither is regulated.

The CSIUK regulatory consolidation group contains CSIUK, its subsidiary CSHUK, its indirect subsidiary CSSEL and a small number of entities that neither trade nor take risk positions. Accordingly, all the market risk and the significant majority of the credit risk capital requirements in the CSIUK group arise from the activity of CSSEL. For example, at 31 December 2016, CSSEL's total capital requirement was USD 2,432m compared to USD 2,451m for the CSIUK group.

Accordingly, the quantitative Pillar 3 disclosures for the CSIUK group are presented only where they differ materially from the disclosures of CSSEL at 31 December 2016 and are shown in the following tables:

- Capital composition;
- RWAs and capital requirements; and
- Leverage Ratio.

The CSIUK consolidation group is not required to prepare audited financial statements.

Own funds

The following table analyses CSIUUK's consolidated own funds.

Capital composition (USD million)			
As at 31 December		2016	2015
	Note(s)	Own funds	Own funds
Tier 1 (and CET1) capital			
Ordinary shares		3,045	3,045
Share premium		8,336	8,336
Other reserves /Capital contribution		3,306	3,306
Retained earnings		(7,318)	(7,244)
Accumulated other comprehensive income		(27)	(211)
Tier 1 (and CET1) prior to prudential filters and regulatory adjustments		7,342	7,232
Prudential filters and regulatory adjustments			
Cash flow hedge reserve	(2)	0	6
Prudent valuation adjustments	(3)	(125)	(173)
Intangible assets	(4)	(1)	(1)
Excess of expected losses over credit risk adjustments	(5)	(41)	(43)
Securitisation positions - Trading Book	(6)	(3)	(19)
Defined benefit pension fund	(7)	(729)	(616)
Total Tier 1 (and CET1) capital		6,443	6,386
Tier 2 Capital			
Subordinated loans	(8)	3,500	3,500
T2 instruments (issued by subsidiaries)	(8),(9)	529	652
T2 instruments (issued by subsidiaries) - transitional adjustments	(8),(9)	289	359
Total Tier 2 capital		4,318	4,511
Total capital ('own funds')		10,761	10,897
Capital ratios			
As at 31 December		2016	2015
Common Equity Tier 1		21.0%	21.7%
Tier 1		21.0%	21.7%
Total Capital		35.1%	32.7%

Notes

- (1) 2016 Statement of Financial Position for (i) Total Equity and (ii) Subordinated Debt values prepared under IFRS.
- (2) Elimination of losses on cash flow hedges of financial instruments that are not fair valued [CRR Article 33(1)(a)].
- (3) A prudent valuation adjustment is applied in respect of fair valued instruments as required under CRD IV [CRR Articles 34,105].
- (4) Intangible assets and goodwill do not qualify as capital for regulatory purposes under CRD IV [CRR Articles 36(1)(b), 37].
- (5) For institutions using the AIRB Approach, represents shortfall of credit risk adjustments to expected losses.
- (6) 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].
- (7) CRD IV does not permit pension fund assets to be treated as regulatory capital [CRR Articles 36(1)(e), 41].
- (8) Subordinated debt is either accrual accounted or fair valued under IFRS (eg. including accrued interest) whereas 'own funds' recognises it at nominal value.
- (9) T2 instruments issued by subsidiaries represent subordinated loans to CSSEL. These are subject to a minority interest adjustment to which a transitional arrangement applies. At the end of the transitional period, 1 January 2019, the amount shown above as "transitional adjustments" will have reduced to nil.

RWAs and capital requirements

CSIUK's consolidated Pillar 1 capital requirements are summarised below, along with RWA values. Credit risk capital requirements and RWAs are further broken down by risk-weight methodology and exposure class.

RWAs and capital requirements (USD million)				
As at 31 December	2016	2016	2015	2015
	RWAs	Capital Requirement	RWAs	Capital Requirement
Credit and counterparty risk				
<i>Standardised Approach</i>				
Central governments or central banks	559	45	657	53
Public sector entities	29	2		
Multilateral development banks	0	0	1	0
Institutions	1,302	104	1,024	82
Corporates	946	76	850	68
Claims on institutions and corporates with a short-term credit assessment	562	45	708	57
Other items	142	11	21	2
Total Standardised Approach	3,540	283	3,261	262
<i>Advanced Internal Ratings Based Approach (AIRB)</i>				
Central governments and central banks	316	25	736	59
Institutions	1,504	120	2,059	165
Corporates - other	8,881	710	10,906	872
Equity	24	2	6	0
Securitisation positions	0	0	0	0
<i>of which: resecuritisation</i>	0	0	0	0
Non-credit obligation assets	7	1	4	0
Total AIRB Approach	10,732	858	13,711	1,096
<i>Credit Valuation Adjustment (CVA) and settlement / delivery risk</i>				
CVA - Standardised Method	2,458	197	2,328	186
Settlement or delivery risk	50	4	13	1
Total CVA and settlement / delivery risk	2,508	201	2,341	187
(i) Total credit and counterparty credit risk	16,780	1,342	19,313	1,545
Market risk				
Market risk under PRA Standard Rules	121	10	606	48
Market risk under Internal Models Approach	8,044	644	7,176	574
(ii) Total market risk	8,165	654	7,782	622
Other risks				
Contributions to the default fund of a CCP	128	10	106	8
Operational risk - Basic Indicator Approach	3,503	280	3,462	277
Large exposures (Trading Book)	2,061	165	2,667	213
(iii) Total other risks	5,692	455	6,235	498
Grand total RWA and capital requirements (i) - (iii)	30,637	2,451	33,330	2,665

Leverage ratio

CSIUK's leverage ratio improved to 5.0% by 31 December 2016 from 4.6% at 31 December 2015. This increase is mainly attributable to decrease in on-balance sheet other assets exposure. As the significant majority of the regulatory risk and exposure within the CSIUK consolidation group occurs in CSSEL, the exposure measure for the CSIUK group is closely correlated to that of CSSEL. CSSEL's leverage ratio exposure measure decreased during the year and this had a consequential beneficial effect on the CSIUK group leverage ratio.

However, there are structural differences between own funds at the CSIUK group level and CSSEL solo level, relating to the relative proportions of Tier 1 and Tier 2 capital. Accordingly, management of the CSIUK leverage ratio has involved some re-balancing of Tiers 1 and 2, as can be seen in the analysis of own funds above.

Leverage ratio common disclosure (USD million)

As at 31 December 2016	
<i>On-balance sheet exposures (excluding derivatives and SFTs)</i>	
On-balance sheet items (excluding derivatives and SFTs, but including collateral)	43,956
Asset amounts deducted in determining Tier 1 capital	(908)
(i) Total on-balance sheet exposures (excluding derivatives and SFTs)	43,048
<i>Derivative exposures</i>	
Replacement cost associated with derivatives transactions	2,097
Add-on amounts for PFCE associated with derivatives transactions	8,280
Exempted CCP leg of client-cleared trade exposures	-
Adjusted effective notional amount of written credit derivatives	340
(ii) Total derivative exposures	10,717
<i>Securities financing transaction exposures</i>	
Gross SFT assets, after adjusting for sales accounting transactions	60,289
Counterparty credit risk exposure for SFT assets	5,220
(iii) Total securities financing transaction exposures	65,509
<i>Off-balance sheet exposures</i>	
Off-balance sheet exposures at gross notional amount	8,868
Adjustments for conversion to credit equivalent amounts	-
(iv) Total off-balance sheet exposures	8,868
Tier 1 capital	6,443
Total exposures ((i) - (iv))	128,142
Leverage ratio	5.0%

Split of on-balance sheet exposures by Banking and Trading Book (excluding derivatives and SFTs) (USD million)

As at 31 December 2016	
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	43,956
Trading book exposures	40,473
Banking book exposures, of which:	3,483
Exposures treated as sovereigns	196
Institutions	844
Corporate	2,443

Appendix 2: Tier 2 Instruments

Credit Suisse Securities (Europe) Limited – Tier 2 instruments as at 31 December 2016 (page 1/2)

No.	Term	Tier 2 instruments					
1	Date of Agreement	14-Dec-2007	14-Dec-2007	29-Oct-2010	29-Oct-2010	27-Jun-2008	02-Sep-2008
2	Original date of issuance	23-Sep-2008	09-Oct-2008	29-Oct-2010	15-Dec-2010	27-Jun-2008	02-Sep-2008
3	Tranche	(1)	(2)	(1)	(2)	N/A	N/A
4	Issuer/Lender	Credit Suisse PSL GmbH	Credit Suisse PSL GmbH	Credit Suisse PSL GmbH	Credit Suisse PSL GmbH	CSFB Finance BV	CSFB Finance BV
5	Governing Law	English	English	English	English	English	English
Regulatory treatment							
6	Transitional CRR Rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
7	Post-transitional CRR Rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
8	Eligible at solo and / or consolidated basis?	Solo, Consolidated	Solo, Consolidated	Solo, Consolidated	Solo, Consolidated	Solo, Consolidated	Solo, Consolidated
9	Instrument type	Subordinated debt	Subordinated debt	Subordinated debt	Subordinated debt	Subordinated debt	Subordinated debt
10	Amount recognised in regulatory capital as at 31 December 2016 (million)	\$0.1	\$0.1	\$1,000.0	\$250.0	\$0.3	\$0.3
11	Nominal amount of instrument (million)	\$0.1	\$0.1	\$1,000.0	\$250.0	\$0.3	\$0.3
12	Issue price	Par	Par	Par	Par	Par	Par
13	Redemption price	Par	Par	Par	Par	Par	Par
14	Accounting classification	Liability -amortised cost	Liability -amortised cost	Liability -amortised cost	Liability -amortised cost	Liability -amortised cost	Liability -amortised cost
15	Perpetual or dated	Perpetual	Perpetual	Perpetual	Perpetual	Dated	Dated
16	Original maturity date	N/A	N/A	N/A	N/A	27-Jun-2038	27-Jun-2038
17	Repayment option	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	Optional, subject to prior PRA approval
Coupons							
18	Fixed or floating dividend/coupon	Floating	Floating	Floating	Floating	Fixed	Fixed
19	Coupon rate and any related index	USD 3-month Libor + 600bps	USD 3-month Libor + 1050bps	USD 3-month Libor + 545bps	USD 3-month Libor + 695bps	9.49% Fixed Rate	9.83% Fixed Rate
20	Optional Deferral	Yes, indefinitely, subject to arrears pusher - ordinary shares	Yes, indefinitely, subject to arrears pusher - ordinary shares	Yes, indefinitely, subject to arrears pusher - ordinary shares	Yes, indefinitely, subject to arrears pusher - ordinary shares	None	None
21	Existence of step-up or other incentive to redeem	No	No	No	No	No	No
22	Convertible or non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible
23	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Junior subordinated	Junior subordinated	Junior subordinated	Junior subordinated	Unsecured and subordinated to the claims of unsubordinated creditors	Unsecured and subordinated to the claims of unsubordinated creditors
24	Non-compliant transitional features	No	No	No	No	No	No

Credit Suisse Securities (Europe) Limited – Tier 2 instruments as at 31 December 2016

No.	Term	Tier 2 instruments	
1	Date of Agreement	14-Apr-2014	29-Dec-2015
2	Original date of issuance	15-Apr-2014	29-Dec-2015
3	Tranche	N/A	N/A
4	Issuer/Lender	CSIUK	CSIUK
5	Governing Law	English	English
Regulatory treatment			
6	Transitional CRR Rules	Tier 2	Tier 2
7	Post-transitional CRR Rules	Tier 2	Tier 2
8	Eligible at solo and / or consolidated basis?	Solo	Solo
9	Instrument type	Subordinated debt	Subordinated debt
10	Amount recognised in regulatory capital as at 31 December 2016 (million)	\$1,500.0	\$750.0
11	Nominal amount of instrument (million)	\$1,500.0	\$750.0
12	Issue price	Par	Par
13	Redemption price	Par	Par
14	Accounting classification	Liability -amortised cost	Liability -amortised cost
15	Perpetual or dated	Dated	Dated
16	Original maturity date	15-Apr-2026	29-Dec-2025
17	Repayment option	Subject to prior PRA approval (from 15 April 2019, tax and regulatory calls)	Subject to prior PRA approval (from 29 December 2020, tax and regulatory calls)
Coupons			
18	Fixed or floating dividend/coupon	Floating	Floating
19	Coupon rate and any related index	USD 3-month Libor + 342bps	USD 3-month Libor + 420 bps
20	Optional Deferral	None	None
21	Existence of step-up or other incentive to redeem	No	No
22	Convertible or non-convertible	Non-convertible	Non-convertible
23	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Unsecured, ranking pari passu with the claims of other subordinated holders	Unsecured, ranking pari passu with the claims of other subordinated holders
24	Non-compliant transitional features	No	No

Credit Suisse Investments (UK) – Tier 2 instruments as at 31 December 2016

No.	Term	Tier 2 instruments	
1	Date of Agreement	14-Apr-2014	19-Sep-2012
2	Original date of issuance	15-Apr-2014	19-Sep-2012
3	Tranche	N/A	N/A
4	Issuer/Lender	DLJ UK Holding	DLJ UK Investment Holdings Limited
5	Governing Law	English	English
Regulatory treatment			
6	Transitional CRR Rules	Tier 2	Tier 2
7	Post-transitional CRR Rules	Tier 2	Tier 2
8	Eligible at solo and / or consolidated basis?	Consolidated	Consolidated
9	Instrument type	Subordinated debt	Subordinated debt
10	Amount recognised in regulatory capital (million)	\$1,500.0	\$2,000.0
11	Nominal amount of instrument (million)	\$1,500.0	\$2,000.0
12	Issue price	Par	Par
13	Redemption price	Par	Par
14	Accounting classification	Liability -amortised cost	Liability -amortised cost
15	Perpetual or dated	Dated	Dated
16	Original maturity date	15-Apr-2026	19-Sep-2022
17	Repayment option	Subject to prior PRA approval (from 15 April 2019, tax and regulatory calls)	Optional, not before 19 September 2017, subject to prior PRA approval
Coupons			
18	Fixed or floating dividend/coupon	Floating	Floating
19	Coupon rate and any related index	USD 3-month Libor + 342bps	USD 3-month Libor + 323bps
20	Optional Deferral	None	None
21	Existence of step-up or other incentive to redeem	No	No
22	Convertible or non-convertible	Non-convertible	Non-convertible
23	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Unsecured, ranking pari passu with the claims of other subordinated holders	Unsecured and subordinated to the claims of unsubordinated creditors
24	Non-compliant transitional features	No	No

Appendix 3: Directorships

CSSEL's Board Members hold the following number of directorships as at 30 March 2017:

Directorships	
	Total
R Arbuthnott	6
N Doyle	5
R Endersby	4
A Halsey	5
C Horne	4
P Ingram	2
D Mathers	2
E Shirvani	4

Appendix 4: List of abbreviations and glossary

Term	Definition
A	
ABS	<i>Asset-backed security.</i>
AIRB	<i>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).</i>
AT1	<i>Additional Tier 1 capital: a form of capital eligible for inclusion in Tier 1, but outside the definition of CET1.</i>
B	
Banking Book	Classification of assets outside the definition of Trading Book (also referred to as the 'Non-Trading Book').
BCBS	<i>Basel Committee on Banking Supervision.</i>
C	
CCB	<i>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.</i>
CCF	<i>Credit conversion factor: represents an estimate of undrawn commitments drawn down at the point of default.</i>
CCP	<i>Central counterparty.</i>
CCR	<i>Counterparty credit risk.</i>
CCRTM	<i>Counterparty credit risk mark-to-market method: a regulatory prescribed method for calculating exposure values in respect of counterparty credit risk.</i>
CDO	<i>Collateralised debt obligation.</i>
CET1	<i>Common Equity Tier 1: the highest quality level of regulatory capital prescribed under Basel III (and by CRD IV in the EU).</i>
CET 1 ratio	CET1 expressed as a percentage of RWAs.
CQS	<i>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.</i>
CRD	<i>Capital Requirements Directive: EU legislation implementing Basel III (and previously Basel II) in the EU.</i>
CRM	<i>Credit Risk Mitigation</i>
CRR	<i>Capital Requirements Regulation: EU legislation implementing Basel III in the EU.</i>
CVA	<i>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.</i>
E	
EAD	<i>Exposure at default: the net exposure prior to taking account of any credit risk mitigation at the point of default.</i>
EBITDA	<i>Earnings before interest, taxation, depreciation and amortisation.</i>
ECAI	<i>External Credit Assessment Institutions.</i>
Expected loss	The downturn loss on any exposure during a 12-month time horizon calculated by multiplying EAD by PD and LGD.
F	
FLP	<i>Fund-linked product.</i>
I	
ICAAP	<i>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.</i>
IFRS	<i>International Financial Reporting Standards.</i>
IMA	<i>Internal Models Approach: used in the calculation of market risk capital requirements.</i>
IMM	<i>Internal Model Method: used in the calculation of counterparty risk exposure.</i>
IRC	<i>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.</i>
ISDA	<i>International Swaps and Derivatives Association.</i>
ISDA master agreement	Standardised contract developed by ISDA to facilitate bilateral derivatives trading.

Term	Definition
L	
Leverage ratio	A calculation prescribed under Basel III (and CRD IV) to measure the ratio of total exposures to available Tier 1 capital.
LGD	<i>Loss given default</i> : the estimated ratio of loss to the amount outstanding at default (EAD) as a result of any counterparty default.
M	
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.
P	
PD	<i>Probability of default</i> : is the probability of an obligor defaulting within a one-year horizon.
PFCE	<i>Potential future credit exposure</i> .
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	<i>Prudential Regulation Authority</i> .
R	
RBA	<i>Ratings-Based Approach</i> : an AIRB approach to securitisations using risk weights derived from ECAI ratings.
RCSA	<i>Risk and control self-assessment</i> .
RFDAR	<i>Risk and Finance Data and Reporting</i> .
RMC	<i>Risk Management Committee</i> .
RNIV	<i>Risks not in VaR</i> .
RWA	<i>Risk-weighted asset</i> : derived by assigning risk weights to an exposure value.
S	
SFA	<i>Supervisory Formula Approach</i> .
SFT	<i>Securities financing transaction</i> : 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	<i>Small and medium-sized enterprise</i> .
SRB	<i>Systemic risk buffer</i> : a capital buffer under CRD IV deployed by EU member states to reduce build-up of macro-prudential risk.
SREP	<i>Supervisory Review and Evaluation Process</i> .
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.
T	
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.
V	
VaR	<i>Value-at-risk</i> : loss estimate from adverse market movements over a specified time horizon and confidence level.
W	
WWR	<i>Wrong-way risk</i> : risk exposure to a counterparty is adversely correlated with a counterparty's credit quality.

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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 2017 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 us, 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 cyberattacks 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 or changes in our competitive position 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.

The foregoing list of important factors is not exclusive.