Citigroup Global Markets Limited

Pillar 3 Disclosures

31 December 2017

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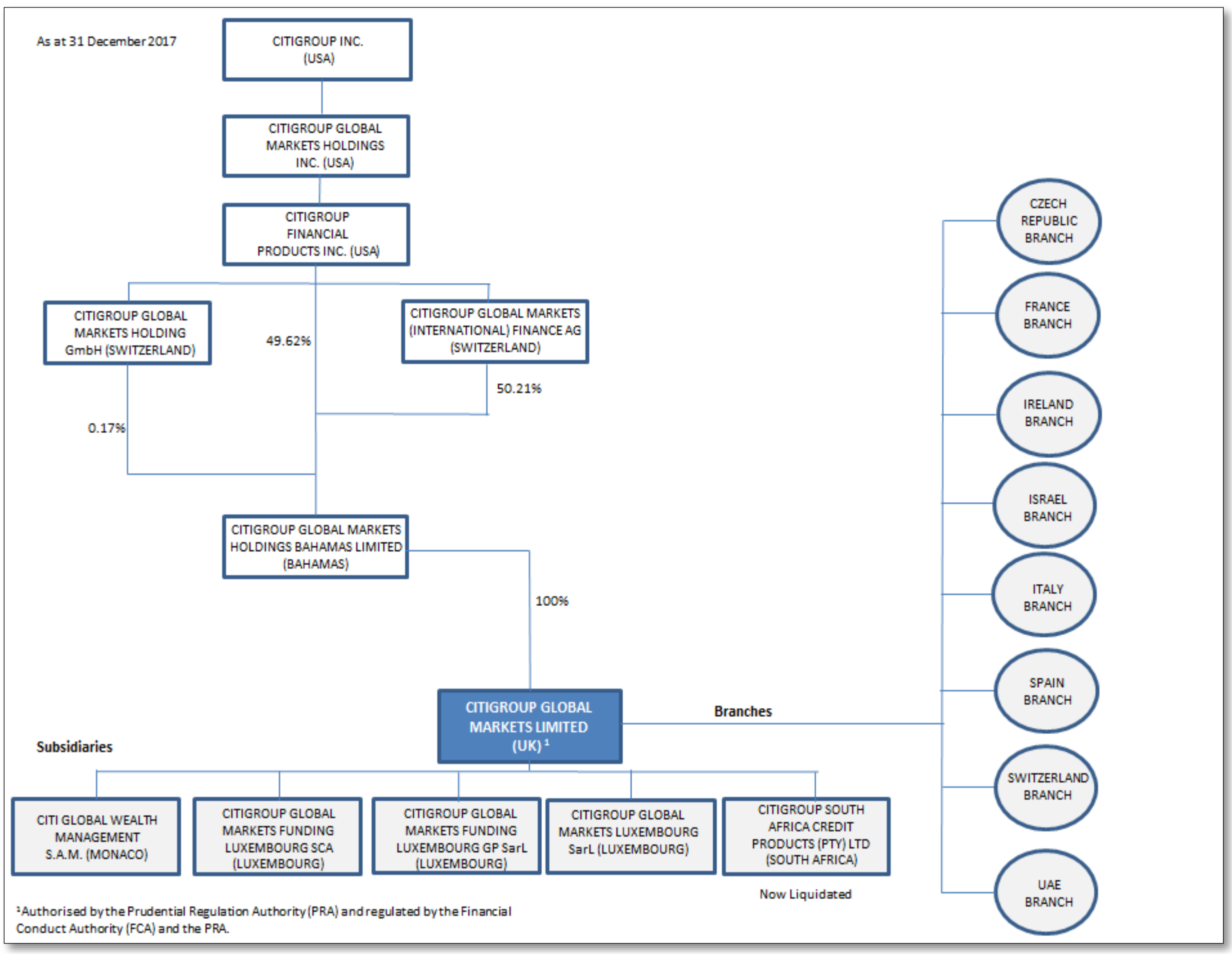
1. Introduction to Citigroup Global Markets Limited

Citigroup Global Markets Limited (CGML) is Citi's primary international broker-dealer. It has a major presence as a dealer, market maker and underwriter in equity and fixed income markets and offers risk-based solutions to producers, consumers and investors in commodity products. CGML also provides advisory services to a wide range of government, institutional and corporate clients. CGML's trading activities encompass cash, exchange traded and over the counter (OTC) derivative markets. Its major counterparties are banks, investment firms, asset managers, insurers and hedge funds. It also has moderate trading exposure to corporate clients.

Figure 1: Extract from UK Organisation Chart as at 31 December 2017



Background

Citigroup Inc. (Citi) is a global diversified financial services organisation whose businesses provide consumers, corporations, governments and institutions with a broad range of financial products and services, including consumer banking and credit, corporate and investment banking, securities brokerage, trade and securities services and wealth management. Citi has approximately 200 million customer accounts and does business in more than 160 countries and jurisdictions.

The mission of Citi is to responsibly provide financial services that enable economic growth and progress as a trusted partner to its clients and to deliver sustainable, growing earnings across all of its businesses while protecting capital and liquidity.

Citi currently operates, for management reporting purposes, via two primary business segments: Citicorp, consisting of Citi's Global Consumer Banking (GCB) and Institutional Clients Group (ICG) businesses; and Citi Holdings, consisting of businesses and portfolios of assets that Citi has determined are not central to its core Citicorp businesses.

Citi Holdings is no longer a separately reported business segment; it is now reported as part of Corporate/other earnings.

Citicorp

Citicorp is a relationship-focused global bank serving businesses and consumers. It includes "core" Citi properties and has a presence in high-growth emerging markets around the world. Citicorp has worldwide deposit-taking capabilities that can be put to work with consumer and institutional customers in a diversified way to produce the highest returns, giving it a unique ability to deliver global capabilities locally and serve local clients globally.

Citicorp's UK business is almost entirely transacted on the books of CGML, Citibank Europe plc (CEP) UK branch and Citibank NA London branch. The last two fall outside the scope of these disclosures.

CGML's business comprises all the main activities falling within the ICG's Markets and Securities Services and Capital Markets Organisation (CMO) and Corporate and Investment Banking within the Banking segments.

There is next to nothing of Citi Holdings business in CGML.

Institutional Clients Group (**ICG**)

Citi's ICG business comprises the following:

Markets and Securities Services
The main businesses within Markets and Securities Services are as follows:
- Commodities
- Credit
- Equities
- Foreign Exchange
- Investor Services
-
- Rates
- Securitised Markets

Banking

Citi's banking businesses comprise the following:
- Capital Markets Origination (CMO)
- Corporate and Investment Banking
- Corporate Portfolio Management

- Private Bank
- Treasury and Trade Solutions (TTS)

These business lines allow Citi to provide corporations, governments, institutions and investors with a broad range of products and services, including investment banking, securities trading, advisory services, foreign exchange, structured products, derivatives and lending.

1.1. Overview of Pillar 3 Disclosures

This document contains the Pillar 3 disclosures, qualitative and quantitative, for CGML, Citi's principal UK operating subsidiary, for 2017. The disclosures are made in accordance with Part 8 of the Capital Requirements Regulation within the Capital Requirements Directive (CRD IV) package. In addition, we have implemented the European Banking Authority (EBA) final guidelines on revised Pillar 3 disclosures (EBA/GL/2016/11), issued in December 2016, which bring into force the disclosure of new quantitative tables to further enhance comparability and consistency across the industry. Where not relevant to the activities of CGML, specific rows and columns have been deleted from templates.

The CRD IV package, which came into effect on 1 January 2014 and implements the provisions of the Basel Capital Accord in the EU, mandates a framework of capital adequacy regulation for banks and investment firms incorporating three distinct pillars.

- Pillar 1 prescribes the minimum capital requirements for such firms;
- Pillar 2 addresses the associated supervisory review process; and
- Pillar 3 specifies further public disclosure requirements in respect of their capital and risk profile.

In accordance with the requirements set out in CRD IV, the focus of the disclosures is on European Economic Area (EEA) parent institutions and firms which are significant subsidiaries of EEA parent institutions.

The disclosures have been published in the Investor Relations section of Citi's website and complement both the group level materials included in the Citigroup Annual Report, and CGML's own 2017 financial statements.

The basis of the disclosures for CGML is on a consolidated basis.

Figure 2 sets out further details of the entities included in the CGML consolidated group.

We are aware of no material practical or legal impediment to the prompt transfer of capital resources or repayment of liabilities among these entities, beyond the normal requirements imposed by company and other legislation.

1.2. Policy and Verification

In accordance with Article 431 (3) of the CRR, CGML maintains a Pillar 3 Disclosure Policy to support compliance with Part Eight of the CRR and associated EBA guidelines. The firm has operated within a framework of internal controls and procedures for accessing the appropriateness of this disclosure. The Policy has been updated and approved to comply with increased guidance on Pillar 3 disclosures.

See Appendix 15.6 for a reference to CGMLs' compliance with the CRDIV

The disclosures within the Pillar 3 document have been reviewed by appropriate senior management within the Finance, Risk and HR functions. The document was then reviewed by the CGML Capital Committee and finally reviewed and approved by the Board.

CGML Capital Committee is primarily responsible for approving, reviewing and challenging decisions taken in respect of Regulatory Capital and Disclosures. Specifically it should cover the following:

1. Assess all material changes in Citi's organisation, business structure and risk profile as well as external business conditions and determine whether management's current capital adequacy assessment should be updated or revised, and whether the legal vehicles are adequately capitalised.

2. Review and approve the ICAAP document for the Board to ensure that it continues to accurately reflect the firm's current policies, procedures, risk appetite and capital position, under both normal and stressed conditions.

3. Approve the Pillar 3 document prior to publication on the external Citigroup website.

4. Receive updates from the Market, Credit and Operational Risk Regulatory Model Committees and approve any relevant items such as model applications before they are sent to the Regulators.

5. Receive updates from the CRR Interpretative Office regarding items discussed and decisions agreed.

6. The quorum for decision-making consists of one of the co-chairs and one representative from UK Controllers and UK CFO/ UK Treasury/ UK Risk organisation as appropriate to the decision.

Board's Declaration

We confirm that CGML's Pillar 3 disclosures, to the best of our knowledge, comply with Part Eight of the CRR and have been prepared in compliance with CGML's internal control framework. In addition, we have made every effort to comply with the "EBA's Guidelines on disclosure requirements under Part Eight of Regulation (EU) No 575/2013" dated 14 December 2016, as advised by the EBA under paragraph 2.4 of such Guidelines.

Figure 2: Subsidiaries of CGML as at 31 December 2017

Subsidiary	Date Established	Description
Citigroup South Africa Credit Products (PTY) Limited	2004	• Established by Emerging Markets Credit Trading to offer investment products to South African investors. • Citigroup South Africa Credit Products (PTY) Limited has had a very limited amount of transactions booked on the vehicle and is in the process of being wound down. There are no active trades on the books. • Now liquidated.
Citi Global Wealth Management Societe Anonyme Monegasque (SAM) (Monaco)	2007	• Established as a Citi Private Bank advisor, chartered and headquartered in Monaco. Formed as an asset management company to serve family offices and ultra-high net worth individuals resident in Monaco with a full range of global investment products and tailored financial solutions, through the Citi Private Bank. • Incorporated to meet regulations that stipulate that only a local onshore registered and authorised legal entity and its local registered employees are permitted to procure clients and/or provide local Monaco resident investment advisory services. • The entity has no onshore booking, deposit taking or lending capability. Local clients' book into the existing Citi Private Bank booking centres in Citibank N.A., Jersey, Citibank N.A. London, Citibank (Switzerland) and Citibank Europe plc.
Citigroup Global Markets Luxembourg SARL	2011	• Established by the Prime Finance business within Investor Services to carry out Securities Lending and Delta One activity. • Incorporated in the form of a SarL, or limited liability company. • This is currently dormant, but remains open.
Citigroup Global Markets Funding Luxembourg SCA and GP SARL	2012	• Established as a Euro Medium Term Note (EMTN) issuance vehicle by the Multi Asset Group for the benefit of CGML. • Established due to CGML itself being unable to publicly issue debt as a private limited company. • Two Luxembourg entities were incorporated as subsidiaries of CGML: - 'SCA' (a form of partnership), the issuance vehicle; and - 'SarL' (a limited company), set up as an unlimited shareholder and manager. • The SCA issues the notes but transfers the risks to CGML via fully-funded Total Return Swaps.

Table 1: KM1- Key Metrics for CGML as at 31 December 2017

The table below provides an overview of CGML's capital, leverage and liquidity regulatory metrics during the year.

		Dec-17	Sep-17	Jun-17	Mar-17
	Available capital (amounts)	$m	$m	$m	$m
1	Common Equity Tier 1 (CET1)	12,270	12,351	12,808	12,819
2	Tier 1	14,070	14,151	14,608	12,819
3	Total capital	18,082	17,133	17,526	17,427
	Risk-weighted assets (amounts)				
4	Total risk-weighted assets (RWA)	130,256	132,364	120,012	121,040
	Risk-based capital ratios as a percentage of RWA				
5	Common Equity Tier 1 ratio (%)	9.42%	9.33%	10.67%	10.59%
6	Tier 1 ratio (%)	10.80%	10.69%	12.17%	10.59%
7	Total capital ratio (%)	13.88%	12.94%	14.60%	14.40%
	Additional CET1 buffer requirements as a percentage of RWA				
8	Capital conservation buffer requirement (2.5% from 2019) (%)	1.25%	1.25%	1.25%	1.25%
9	Countercyclical buffer requirement (%)	0.06%	0.06%	0.06%	0.05%
10	Bank G-SIB additional requirements (%)	0.00%	0.00%	0.00%	0.00%
11	Total of bank CET1 specific buffer requirements (%) (row 8 + row 9+ row 10)	1.31%	1.31%	1.31%	1.30%
12	CET1 available after meeting the bank's minimum capital requirements (%)	1.74%	1.70%	2.72%	1.18%
	Basel III Leverage Ratio				
13	Total Basel III leverage ratio measure	385,170	389,864	363,339	359,376
14	Basel III leverage ratio (%) (row 2/row 13)	3.65%	3.63%	4.02%	3.57%
	Liquidity Coverage Ratio				
15	Total HQLA	19,832	19,144	18,772	18,562
16	Total net cash outflow	12,392	11,949	11,632	10,266
17	LCR ratio (%)	160.04%	160.21%	161.38%	180.81%

2. Risk Management and Governance

2.1. Risk Management Approach

2.1.1. Objective

CGML's objective is to take prudent risks in support of Citi's aggregate strategy and to ensure that it has sufficient capital, liquidity and oversight of these risks. The objective of CGML's Risk Appetite Framework, a component of the CGML Risk Management Framework, is to ensure that the risks associated with CGML's strategy are identified, understood, quantified, mitigated, communicated and are consistent with Citi's Mission and Value Proposition and key principles including Citi's commitment to Responsible Finance.

2.1.2. Risk Appetite Framework

Citi's Risk Appetite Policy establishes a holistic Risk Appetite Framework in order to clearly and consistently communicate the types and levels of risk the firm is willing to take within the context of the firm's articulated business strategy. The Risk Appetite Framework established through the policy integrates many existing processes at Citi. Given the diversified nature of Citi's businesses, Citi's limit framework is business and product specific. Each business is required to develop a Risk Appetite Framework specific to its business strategy, activities and products, and each risk taking or operating material legal entity ('MLE'), such as CGML, is required to develop a Risk Appetite Framework that is specific to the business strategy, activities and products for the legal entity.

The CGML Risk Management Framework documents the risk management model and approach used to ensure robust management of the material risks facing the legal entity and includes CGML's Risk Appetite Framework. CGML's Risk Appetite Framework is divided into four parts, with three components of quantitative risk appetite, and the qualitative risk appetite principles which are principle-based boundaries to guide behaviour.

CGML's risk appetite is set by the CGML Board, and incorporates management judgement regarding prudent risk taking and growth in light of the business environment within which the entity operates and takes into account current capital levels and planned capital actions.

The CGML Risk Appetite Framework is reviewed annually, at a minimum, as part of the Internal Capital Adequacy Assessment Process (ICAAP) update. The primary objective of the ICAAP framework is to ensure that CGML remains sufficiently capitalised in all plausible economic circumstances and has been designed to assess current and forecast capital levels under both normal and stressed operating conditions. The CGML CEO, EMEA CFO, EMEA CRO, CGML Risk Manager or any CGML Board member can request a refresh at any time for any reason, including for any material changes in the risk profile or operating environment.

<u>2.1.2.1 Quantitative Risk Appetite</u>

CGML's Risk Appetite Framework includes both principle-based qualitative boundaries to guide behaviour and quantitative boundaries within which the firm will operate, focusing on ensuring that it has sufficient capital resources in light of the risks to which the entity could be exposed.

The three quantitative risk appetite components are as follows:

- CGML ensures that it maintains a sufficient capital excess above and beyond its Pillar 2A, CRD IV and PRA buffer requirements under business as usual conditions in order to accommodate volatility, on both a current and forward looking basis, referred to as the Capital Action Trigger (CAT);
- CGML is also required to maintain a trading stress loss estimate below a certain level, as estimated via Citi's standard Global Systemic Stress Test (GSST) approach for any of the scenarios analysed; and

- CGML also has an Internal Risk Capital Appetite which is a measure of how much risk the Board believes it is prudent to take based on internal measures of capital adequacy, rather than regulatory capital.

Note that Internal Risk Capital Appetite is not a target, but a determination of acceptable risk-taking that management may utilise without further Board dialogue, based on the maximum amount of risk considered appropriate given current capital levels, planned capital actions, the business environment, growth expectations and other factors. An 'excess' is held to compensate for risk and business aspects not wholly captured in risk capital and to allow for volatility, which is referred to as the 'minimum required excess'.

CGML's Internal Risk Capital Appetite is allocated down to key risk types – market risk capital, credit risk capital, operational risk capital and pension risk capital. These allocations are based largely on management judgment and incorporate known forward-looking events and management's recognition that increases in one risk type can impact another, for example that increased market risk could create increased counterparty credit risk and that growth in any area could cause increased operational risk.

The CGML Board of Directors, with input from senior Citi and CGML management, sets overarching expectations and holds management accountable for ensuring that CGML's risk profile remains within this risk appetite.

2.1.2.2 Qualitative Risk Appetite

The Board of CGML has adopted the Citigroup Risk Appetite Principles outlined below given their global applicability. Given CGML's critical role in implementing Citi's strategy, CGML must be aligned with Citigroup's Risk Appetite Principles, whilst ensuring that the local assurance mechanisms are in place in order to ensure compliance.

With respect to qualitative risk appetite, the activities that Citi engages in must be consistent with Citi's Mission and Value Proposition and key principles, including Citi's commitment to Responsible Finance.

Citi's Mission and Value Proposition is to serve as a trusted partner to our clients by responsibly providing financial services that enable growth and economic progress and requires employees to ensure that their decisions pass three tests:

- are in our clients' interests;
- create economic value; and
- are always systemically responsible.

Responsible Finance means conduct that is transparent, prudent and dependable, and delivers better outcomes for our clients and society.

Citi engages in activities that involve uncertainty. The foundation of Citi's Risk Culture is taking intelligent risk with shared responsibility, without forsaking individual accountability:

- Taking intelligent risk means we must identify, measure and aggregate risks, and establish risk tolerances based on a full understanding of concentrations and "fat tail" risk. For risks that are difficult to quantify, we monitor metrics that are indicative of a safe and sound risk culture compared to thresholds and trends and rely on professional judgement following a defined framework of assessment;
- Shared responsibility means we collectively bear responsibility to consider, seek input on and escalate concerns, and leverage knowledge across and within the 'three lines of defence' (described in Section 2.1.3); and
- Individual accountability means we must each adhere to policies and standards, actively manage risk, identify issues, escalate concerns and make fully informed decisions that take into account all risks to Citi.

Citi demonstrates a safe and sound risk culture, and assesses and manages risk, such as operational, compliance, strategic, reputational, conduct and legal risks, by:

- Setting an appropriate tone from the top, through Citi's Mission and Value Proposition, the principle of Responsible Finance and Citi's global, business and regional communications strategy, which work together to establish the values expectations for the firm;
- Setting appropriate standards, through Citi's Code of Conduct, Leadership Standards and global, business and local policies and procedures, which work together to set the behavioural and other conduct standards for employees of the firm;
- Establishing a robust risk management and governance framework including risk policies, risk limits and metrics including early warning triggers where appropriate, concentrations and a defined protocol for reporting, escalating and resolving limit breaches and other risk management issues;
- Requiring partnership, open dialogue, escalation and transparency among the three lines of defence, including input by the second line of defence in risk-taking decisions and representation by control functions on senior management committees;
- Establishing comprehensive talent management processes, such as Citi's annual talent review process and key talent development programs;
- Establishing comprehensive training programs, through risk, compliance and leadership training programs, such as the Chief Country Officer Risk training and Citi's Ethics and Leadership training;
- Establishing processes for evaluating accountability, including through Citi's covered employee review process through which employees who are able to take material risks for the firm are independently reviewed by second line of defence control functions; and
- Establishing comprehensive performance management and compensation programs that measure and evaluate performance based on goals achieved balanced against the values, attitudes, competencies and behaviours, including risk behaviours used in achieving such goals; and making compensation and rewards decisions in line with the values and behavioural expectations of the firm.

2.1.2.3 Material Risks

CGML's business falls within the Institutional Clients Group (ICG) segment of Citi's operations and is almost entirely wholesale in nature. CGML has a major international presence as a dealer, market maker and underwriter in equity and fixed income securities and offers risk-based solutions to producers, consumers and investors in commodity markets.

CGML also provides advisory services to a wide range of corporate, institutional and government clients. CGML's trading activities encompass cash, exchange traded and over-the-counter (OTC) derivative markets. CGML does not originate securitisations or engage in leveraged finance transactions as principal.

CGML's main counterparties, which are also key clients of Citi globally, are large banks, investment banks, investment managers, insurers, hedge funds and some corporates.

CGML's material risks are market risk, credit risk, funding and liquidity risk, and operational risk. Operational risk includes a number of risk types, including conduct risk, fraud (including unauthorised trading) and technology risk (including cyber risk).

2.1.3. Risk Governance Structure

Risk management must be built on a foundation of ethical culture. Under Citi's Mission And Value Proposition (described in Section 2.1.2.2), which was developed by Citi's senior leadership and distributed throughout the firm, Citi strives to serve as a trusted partner to its clients by responsibly providing financial services that enable growth and economic progress while earning and maintaining the public's trust by constantly adhering to the highest ethical standards.

Additionally, Citi evaluates employees' performance against a series of behavioural expectations set out in Citi's leadership standards, which were designed in part to effectuate Citi's Mission and Value Proposition. Other culture-related efforts in connection with conduct risk, ethics and leadership, escalation and treating customers fairly, also help Citi to execute its Mission and Value Proposition.

Whilst the management of risk is the collective responsibility of all employees, Citi assigns accountability into three lines of defence:

- First line of defence: the business owns all of its risks, and is responsible for the management of those risks.
- Second line of defence: Citi's control functions (e.g., Risk Management, Finance, Compliance, etc.) establish and monitor standards for the management of risks and effectiveness of controls; and
- Third line of defence: Citi's Internal Audit function independently provides assurance, based on a risk-based audit plan that processes are reliable and that governance and controls are effective.

2.1.4. Risk Management Model and Policies

CGML utilises Citi's over-arching Risk Management model and organisation, with its multi-dimensional risk oversight, people, policies, processes and systems in order to ensure robust oversight of entity risks. An explanation of Citi's overall approach to managing risk can be found in the "Managing Global Risk" section in Citi's 31 December 2017 Form 10-K, available on the Citigroup website.

In addition, CGML has developed entity-specific Risk Management and controls to ensure that there is local challenge to risk-taking and that Citi's approach is appropriate for CGML, as documented in the CGML Risk Management Framework.

CGML applies Citi's global Risk Management Framework, tailored as appropriate for the entity, based on the following principles established by the Chief Risk Officer:

- A defined risk appetite, aligned with business strategy;
- Accountability through a common framework to manage risks;
- Risk decisions based on transparent, accurate and rigorous analytics;
- A common risk capital model to evaluate risks;
- Expertise, stature, authority and independence of risk managers; and
- Risk managers empowered to make decisions and escalate issues.

The (Citi-level) Citi Mark-to-Market Policy is the primary policy governing the approach to the setting of limits, triggers and the monitoring of market risk taken on CGML.

The (ICG-level) ICG Risk Manual is the primary ICG-level policy governing the approach to the taking of credit risk on CGML.

The (Citi-level) Operational Risk Management (ORM) Policy establishes a consistent Operational Risk Management Framework for assessing and communicating operational risk and the overall effectiveness of the internal control environment across Citi. That framework is applied at the CGML level, together with the Key Operational Risks (KORs) that have been identified as being specifically relevant for CGML (described further in Section 2.5.3).

The (Citi-level) Liquidity Risk Management Policy addresses the key liquidity risks that Citi faces as a firm, which requires CGML to define its liquidity risk appetite and operate a limit and trigger structure in order to ensure compliance.

2.1.5. Risk Management Responsibilities

Citi's Chief Risk Officer reports directly to the Citi CEO. Citi manages risk across three dimensions: businesses, regions and critical products. Citi's Risk Management Framework (as defined in the Citi Risk Appetite Policy) aims to recognise the range of Citi's global business activities by combining corporate oversight with Independent Risk Management functions within each business.

Each of the major business groups has a Business Chief Risk Officer who is the focal point for risk decisions (such as setting risk limits or approving transactions) in the business. The Independent Risk Managers at the business level are responsible for establishing and implementing Risk Management policies and practices within their business, for overseeing the risk in their business, and for responding to the needs and issues of their business. This ensures the active management of the principal risks to Citi.

Regional Chief Risk Officers are accountable for the risks in their geographic area and are the primary risk contact for the regional business heads and local regulators. In addition, Product Chief Risk Officers are accountable for those areas of critical importance to Citi and are accountable for the risks within their specialities across businesses and regions, such as real estate and fundamental credit. The Product Chief Risk Officers serve as a resource to the Chief Risk Officer, as well as enabling the businesses and Regional Chief Risk Officers to focus on the day-to-day management of risks and respond in a timely manner to business needs.

The Regional Chief Risk Officer for EMEA (EMEA CRO) acts as the CRO for CGML and is the designated Senior Manager for Risk Management under the Senior Managers Regime. The EMEA CRO reports directly to the Global CRO. The EMEA CRO role is formally inclusive of all divisions and aligned with the regional management structure to foster a more integrated approach to cross-divisional risks.

The EMEA CRO is responsible for the risks facing CGML, including market risk, credit risk and operational risk. Liquidity risk is the responsibility of Treasury and Liquidity Risk Management.

As noted above, CGML utilises Citi's over-arching risk management model, policies and organisation, with its multi-dimensional risk oversight, people, processes and systems in order to ensure robust oversight of entity risks.

The CGML Risk Manager is responsible for the day-to-day management of risk on CGML, overseen by the EMEA CRO, along with the risk managers for the different risk types (market risk, liquidity risk, credit risk and operational risk) and product risk managers responsible for the risks within their specialities. Certain risks, such as conduct risk, franchise risk and fraud risk, are shared with other functional areas and Risk Management is responsible for designing the escalation framework, quantification methodologies and identifying emerging trends in these areas.

2.1.6. Governance Forums and Committees

The Board of Directors has overall responsibility for the stewardship of the Company's business and, as a result, is primarily responsible for safeguarding its profitability, financial solvency and assets and for ensuring that it complies with all legal and regulatory requirements, subject to necessary delegations.

Committees of the Board include the CGML Risk Committee, the CGML Audit Committee, the CGML Remuneration Committee, which functions as a committee of the Board regarding the remuneration of the Company's employees and material risk takers, and the Nomination Committee, which functions as a committee of the Board to review and issue recommendations for nominations for the appointment of directors of the company.

There are a number of governance and control committees that escalate issues to the CGML Board, CGML Audit Committee or CGML Risk Committee. Members of CGML management sit on all of these committees.

2.1.6.1 CGML Risk Committee

The CGML Risk Committee is a standing committee of the Board of Directors and assists the Board in fulfilling its responsibility with respect to oversight of the risks CGML faces in managing its credit, market, liquidity, operational and certain other risks, and the alignment with CGML's strategy, capital adequacy and the macroeconomic environment. The CGML Risk Committee meets at a minimum quarterly, and has membership that includes the EMEA CEO, EMEA CRO, EMEA CFO, EMEA CAO, EMEA General Counsel, CGML Risk Manager, CGML CEO/UK CCO, Non-Executive Directors and representatives from the Legal, Risk, Internal Audit, Compliance and Finance functions.

The Directors of CGML receive regular reports on any risk matters that need to be brought to their attention via standing forums. In addition, ad-hoc notifications take place where escalation is required to the Board, CEO or CRO, depending on materiality, the criteria for assessing which has been previously presented to and approved by the CGML Risk Committee.

2.1.6.2 CGML Audit Committee

The effectiveness of CGML's internal control system is reviewed regularly by the Directors and the CGML Audit Committee, which receives reports of assessments undertaken by the Internal Audit function. Certain aspects of the internal control system are also subject to regulatory supervision, the results of which are monitored closely by the directors and senior management. Citi has an established Managers Control Assessment ('MCA') programme to help managers self-assess key operational risks and controls and to identify and address weaknesses in the design and effectiveness of internal controls that mitigate significant operational risks.

The CGML Audit Committee and Directors are also responsible for monitoring the preparation of CGML's financial statements and for reviewing and assessing the independence of the statutory auditor, in particular in the provision by the auditor of additional services to CGML.

2.1.6.3 UK Business Risk, Compliance and Control (UKBRCC) Committee

The UK Business Risk and Control Committee (UKBRCC) holds monthly discussions with entity management around emerging risks facing Citi's UK entities and provides a forum for escalation and reporting of operational risk events, internal control, legal, compliance, regulatory and other risk issues. Where considered necessary, the UKBRCC further escalates items to the CGML Audit Committee.

2.1.7. Reputational Risk

With respect to reputational risk, a Citi-wide (including an EMEA-based) Business Practices Committee (BPC) composed of regional senior management (including the EMEA CRO) reviews practices involving potentially significant reputational or franchise issues. This committee reviews whether Citi's business practices have been designed and implemented in a way that meets the highest standards of professionalism, integrity and ethical behaviour.

Additional committees, including those noted in Section 2.1.8 below, ensure that product risks are identified, evaluated and determined to be appropriate for Citi and its customers, and incorporate the necessary approvals, controls and accountabilities.

2.1.8. New Products and Services

The New Product Approval Committee (NPAC) is designed to ensure that significant risks, including reputational and franchise risks, in a new ICG product, service or complex transaction are identified and evaluated, determined to be appropriate, properly recorded for risk aggregation purposes, effectively controlled and have accountabilities in place.

The Manufacturing Product Approval Committee (MPAC) is responsible for reviewing new or modified products or transactions created by Citi that are distributed to retail investors as well as third-party retail distributors.

The Distribution Product Approval Committee (DPAC) approves new investment products and services, including those created by third parties as part of Citi's "open architecture" distribution model, before they are offered to retail investors via Citi distribution businesses.

2.1.9. Risk Management Infrastructure

CGML senior management consider the Risk Management infrastructure as described in this document as being adequate to capture and measure the risks taken as a result of the entity's business profile and strategy.

2.2. Credit Risk Management

Credit risk is the risk that counterparties may be unable or unwilling to make a payment or fulfil contractual obligations. This may be characterised in terms of an actual default or by deterioration in a counterparty's credit quality. The former case may result in an actual and immediate loss, whereas in the latter case, future losses may become more likely.

Credit risk is one of the most significant risks that Citi faces as an institution. As a result, Citi has a well-established framework in place for managing credit risk across all businesses. This includes a defined risk appetite, credit limits and credit policies. Citi's credit risk management also includes processes and policies with respect to problem recognition, including "watch lists," portfolio review, updated risk ratings and classification triggers. The framework is supplemented by regular stress testing and monitoring of exposures, with monthly and quarterly reporting to senior management and the Board of Directors respectively.

When analysing credit risk, CGML Risk Management manage and monitor the risk from a number of perspectives including obligor and facility ratings, classifications, concentration, stress testing and any associated cost of credit.

Credit risk arises in many of CGML's businesses and as a result of activities including:

- sales and trading;
- derivatives;
- securities transactions;
- settlement;
- when CGML acts as an intermediary on behalf of its clients and other third parties; and
- when acting as underwriter (not on a best-efforts basis) or within a capital raising capacity.

CGML's counterparty credit risk largely arises from its Securities Financing Transaction (SFT) and Over the Counter (OTC) derivative counterparties. It will also arise from clearing and settlement exposure. As CGML's counterparty credit risk is almost entirely margined or secured, with the exception of short term FX transactions, certain activities in the Commodities business or certain trades approved on a case-by-case basis, CGML generally does not hedge its counterparty exposure, and as such is not exposed to residual risk.

An explanation of Citi's approach to managing credit risk can be found in "Managing Global Risk – Credit Risk" in Citi's 31 December 2017 Form 10-K, available on the Citigroup website.

2.2.1. Corporate Credit Risk

For corporate clients and investment banking activities across the organisation, the credit process is grounded in a series of fundamental policies, including:

- Joint business and independent Risk Management responsibility for managing credit risks;
- A single centre of control for each credit relationship, which coordinates credit activities with each client;
- Portfolio limits to ensure diversification and in order to maintain risk/capital alignment;

- A minimum of two authorised credit officer signatures required on most extensions of credit, one of which must be from a credit officer in Credit Risk Management;
- Risk rating standards, applicable to every obligor and facility; and
- Consistent standards for credit origination documentation and remedial management.

Wholesale exposures are classifiably-managed (individually rated) and primarily arise as a result of activity in ICG businesses (including Citi Private Bank), as well as Corporate Treasury. Typical financial reporting categories that include wholesale exposures are deposits with banks, debt securities, loans and off-balance sheet commitments such as unused commitments to lend or to extend letters of credit.

Wholesale exposures, which include counterparty credit risk exposures arising from OTC derivative contracts, repo-style transactions and eligible margin loans, consist of exposures such as those to corporates, banks, securities firms, financial institutions, central governments, government agencies, local governments, other public sector entities, income producing real estate, high volatility commercial real estate, high net worth individuals not eligible for retail treatment, and other obligor or counterparty types not included in retail.

Credit risk principles, policies and procedures typically require:

- a comprehensive analysis of the proposed credit exposure or transaction;
- review of external agency ratings (where appropriate); and
- financial and corporate due diligence, including support, management profile and qualitative factors.

The responsible credit officer completes a review of the financial condition of the counterparty to determine the client's business needs and compare that to the risk that Citi might be asked to extend. During consideration of a credit extension, the credit officer will assess ways to mitigate the risk through legal documentation, parental support or collateral.

Once the analysis is completed and the product limits are determined, anti-tying and franchise risk is reviewed, after which the approval process takes place. The total facility amount, including direct, contingent and pre-settlement exposure, is aggregated and the credit officer reviews the approved tables within policy that appoint the appropriate level of authority needed to review and approve the facility. Every extension of credit must be approved by at least two credit officers.

Credit risk analysts conduct daily exception monitoring versus limits and any resulting issues are escalated to credit officers, and to business management as necessary.

2.2.2. Internal Obligor Risk Ratings

<u>2.2.2.1 Risk Parameter Estimates</u>

Citi's wholesale exposures primarily relate to activities in the ICG. As noted in Section 2.1.4, Citi's ICG businesses that incur credit, market, operational and franchise risk are covered by an ICG Risk Management manual (ICG Risk Manual) which sets forth the ICG's core risk principles, policy framework, limits, definitions, rules and standards for identifying, measuring, approving and reporting risk.

Obligors are assigned a risk rating and total facilities are approved and extended to an obligor by following processes in accordance with the ICG Risk Manual.

For Citi's wholesale exposures, internal credit ratings are used in determining approval levels, risk capital and reserves. Each wholesale obligor is assigned an obligor risk rating (ORR) that reflects the one-year probability of default (PD) of the obligor. Each wholesale facility is assigned a facility risk rating (FRR) that reflects the expected loss rate of the facility, the product of the one-year PD and the expected loss given default (LGD) associated with the facility characteristics.

The ORRs are used for longer-term credit assessments for large credit relationships, which form the basis for obligor limits and approval levels. ORRs are established through an integrated framework that combines quantitative and qualitative tools, calibrated and tested across economic cycles, with risk manager expertise of customers, markets and industries. ORRs are generally expected to change in line with material changes in the PD of the obligor. Rating categories are defined consistently across wholesale credit by ranges of PDs and are used to calibrate and objectively test rating models and the final ratings assigned to individual obligors.

Independently validated models and, in limited cases, external agency ratings establish the starting point in the obligor rating process. The use of external agency ratings in establishing an internal rating occurs when agency ratings have been reviewed against internal rating performance and definitions, and is generally limited to ratings of BBB+/Baa1 or higher.

Internal rating models include statistically derived models and expert judgement rating models. The statistical models are developed by an independent analytical team in conjunction with independent Risk Management. The analytical team resides in Credit and Operational Risk Analytics (CORA), which is part of the corporate-level independent risk group. The statistical rating models cover Citi's corporate segment and certain commercial activity within the Consumer business lines and are based on statistically significant financial variables. Expert judgement rating models, developed by independent Risk Management, cover industry or obligor segments where there are limited defaults or data histories, or highly specialised or heterogeneous populations.

To the extent that Risk Management believes the applicable model does not capture all the relevant factors affecting the credit risk of an obligor, discretionary adjustments may be applied to derive the final ORR, within limits defined by policy. For larger obligors, the final ORRs are derived through the use of a scorecard that is designed to capture the key risks for the segment.

The ICG Risk Manual requires an annual comprehensive analysis of each obligor and all proposed credit exposures to that obligor and independent Risk Management periodically reviews exposures across the banking book and trading book portfolios to ensure compliance with various limit and concentration constructs. Quarterly reviews are also conducted of certain high risk exposures.

For UK regulatory capital purposes, CGML does not have an internal ratings based model permission from the PRA.

2.2.3. Credit Risk Measurement

2.2.3.1 Methodology Used to Assign Credit Risk Limits

The process for approving a counterparty's credit risk exposure limit is guided by:

- core credit policies;
- procedures and standards;
- experience and judgement of credit risk professionals; and
- the amount of exposure at risk.

The process applies to all counterparty credit risk products - OTC derivative contracts, repo-style transactions and eligible margin loans. The process includes the determination of maximum potential exposure after recognition of netting agreements and collateral as appropriate.

While internal ratings are the starting point in establishing credit assessments, a range of factors, such as quality of management and strategy, nature of industry and regulatory environment, among others, are also taken into consideration for obligor limits and approval levels. Exposure to credit risk on derivatives is also impacted by market volatility, which may impair the ability of clients to satisfy their obligations to Citi. Credit risk analysts conduct daily monitoring versus limits and any resulting issues are escalated to credit officers and business management as appropriate. Usage against the credit limits may reflect netting agreements and collateral.

Citi credit limits have several parameters, including a value, the type of risk and the type of product or products that the limit covers. The risk type is the same as in the institution's risk measurement model.

2.2.3.2 Counterparty Credit Risk Exposures

Counterparty credit risk is the risk that the counterparty to a transaction will default before the final settlement of the transaction's cash flows. For OTC derivatives, counterparty credit risk arises from pre-settlement exposures (PSE). For regulatory capital purposes, CGML calculates its exposures under two methods:

- The Internal Models Method (IMM); and
- The Current Exposure Method (CEM). CGML's Exchange Traded Derivatives (ETDs) are calculated under CEM.

Two conditions are required for Citi to recognise a loss on a contract: firstly the counterparty defaults and, secondly, the contract has a positive market value to the firm. Consequently, risk measurement is a function of three elements:

- Potential Future Exposure (PFE); - reflects expected counterparty credit exposure over a specified period of time calculated at some level of confidence;
- Probability of Default (PD); - the probability of default of a counterparty over a one year period; and
- Loss Given Default (LGD) the ratio of the loss on an exposure due to the default of a counterparty to the amount outstanding at default.

For SFT, counterparty credit risk arises from the positive difference in the exposure value of securities or commodities sold and posted or lent, increased by the appropriate volatility adjustments For regulatory capital purposes, CGML calculates its exposures under the Financial Collateral Comprehensive Method (FCCM). Repo-style transactions consist of repurchase or reverse repurchase transactions and securities borrowing or securities lending transactions, including transactions in which Citi acts as agent for a customer and indemnifies the customer against loss, and are based on securities taken or given as collateral, which are marked-to-market, generally daily. Eligible margin loans are extensions of credit collateralised by liquid and readily marketable debt or equity securities, or gold, which satisfy certain conditions. Credit risk is calculated at least daily (overnight) and at times selectively refreshed intraday to be compared to counterparty limits. When the risk is below the limit, the difference is available at the start of the next day to accept incremental business and risk. When risk has exceeded the limit it is reported to the credit officer for the client whose limit is exceeded and to the senior credit officer in charge of the portfolio of clients to which that client belongs.

Credit exposure is generally expressed as the current mark-to-market, net of margin, reflecting the net value owed to Citi by a given counterparty, plus the potential future exposure calculated using Monte Carlo simulation which estimates the amount that a counterparty may owe over the life of a transaction (or a portfolio of transactions) calculated to a 97.7% degree of statistical confidence for modelled exposure, or via Credit Exposure Factors (CEFs) applied to the notional based on product type and tenor.

The risk associated with these credit exposures is a function of the creditworthiness of the obligor, as well as the terms and conditions of the specific obligation. Citi assesses the risk associated with its credit exposures on a regular basis through its loan loss reserve process, as well as through regular stress testing at the company, business, geography and product levels. In addition, Citi also recognise CVA (see 2.28) in the valuation of its OTC derivatives. These stress testing processes typically estimate potential incremental credit costs that would occur as a result of either downgrades in the credit quality or defaults of the obligors or counterparties.

The process of ensuring that all facilities are properly captured and approved is audited on a regular basis by Fundamental Credit Review (FCR). FCR is an independent credit review function that assesses the effectiveness of credit risk management and the ability to identify, monitor and mitigate current and emerging credit risks across the firm.

Citi uses a global risk reporting system to manage credit exposure to its wholesale obligors and counterparties.

2.2.3.3 Internal Economic Capital

Corporate exposure is included in the firm's economic capital model by aggregating this with other direct and indirect exposures and calculating economic capital based on the perceived credit quality of the obligor.

2.2.4. Risk Concentrations

Concentration risk is the risk associated with having exposure concentrated within a specific client, industry, region or group of obligors that are sensitive to the same economic, financial or business developments. CGML Risk Management analyses risk concentrations on a monthly basis.

To manage concentration of risk within credit risk, Citi has in place a concentration management framework consisting of industry limits, obligor limits and single-name triggers. Independent Risk Management reviews concentration of risk across Citi's regions and businesses to assist in managing this type of risk.

2.2.4.1 Relationship Group

The total facilities amount (TFA) is set by relationship group which is typically the parent company and all its subsidiaries. This aggregation is critical to ensure that credit risk can be managed holistically. Credit lines are established between one client legal entity and one Citi legal entity. The CGML Credit Risk Framework, a component of the CGML Risk Management Framework, sets a level of TFA for the aggregate CGML credit lines above which higher level approval is required. This takes into account the size of CGML relative to Citigroup as a whole, but also recognises the largely collateralised nature of the business carried out on CGML. Where the aggregate amount of facilities made available to the relationship by CGML is in excess of the limits, further approval of those aggregate facilities (not the full relationship TFA) must be granted by a Risk SCO who is also a UK Material Risk Taker (MRT).

2.2.4.2 Industry Type

In addition, a set of limits has been put in place for CGML to monitor its exposure to industries and to countries. The industry limits are expressed as percentages of the aggregate PSE accounted for by different industry types, e.g. public sector entities, banks, hedge funds. The exposures to these industries are measured monthly and any exceptions are escalated to the CGML Risk Manager for notification to the CGML Risk Committee. The purpose of industry limits on CGML is to serve as an early warning device to alert management to changes in the sectoral composition of the entire CGML counterparty portfolio.

2.2.4.3 Country

CGML's clients are located around the world and are embedded in Citi's global franchise. The purpose of reviewing the country concentrations is to highlight where CGML may have exposures to clients in very low rated countries.

Global Country Risk Management (GCRM) operates a 'Watchlist' system with gradings indicating the riskiness of that country. These gradings align closely with ratings attributed to the countries where Citi does business.

All of the non-Green countries are assigned a limit on aggregate exposure and the current outstandings (measured on a monthly basis).

The country limit applicable to any specific country is a percentage of CGML's aggregate PSE exposure as determined by the country's Watchlist grading. CGML's exposure to a country, as measured by the aggregate exposure to counterparties domiciled in that country, is tested against these limits on a monthly basis and any exception is notified to the CGML Risk Manager for notification to the CGML Risk Committee. It should be noted that these limits act as triggers for escalation and review, not as absolute ceilings.

2.2.4.4 Shadow Banking Entities

The EBA defines Shadow Banking Entities as entities that:

- carry out credit intermediation activities, defined as bank-like activities involving maturity transformation, liquidity transformation, leverage, credit risk transfer or similar activities; and
- are neither within the scope of prudential consolidation nor subject to solo prudential requirements under specified EU legislation (or equivalent third country legal frameworks). Entities referred to in Article 2(5) and Article 9(2) of Directive 2013/36/EU, as well as other entities as defined in the EBA Guidelines, EBA/GL/2015/20 (‘excluded undertakings’), are also not to be regarded as shadow banking entities.

CGML has set a limit on the aggregate Exposures At Default (EAD) to Shadow Banking Entities at a defined proportion of eligible capital. In the event that the limit is breached, this is reported by the CGML Risk Manager to the CGML Risk Committee, together with an explanation for the breach and a plan to reduce exposure back within the limit.

The framework for the management of Shadow Banking exposure also requires that limits are set at the individual counterparty level. The limit for any counterparty identified as a Shadow Banking Entity is two-fold.

Firstly, it will have been subject to the normal credit review and limit setting processes as set out under the ICG Risk Manual. The limits provided to the entity will have been set taking into account its characteristics, including the nature of its trading activities. These limits are set using the methodologies commensurate with CGML’s IMM permissions using PFE metrics, (PSE, Pre-Settlement Exposure) and not EAD, and are monitored under normal ICG procedures.

Additionally, there is an EAD limit expressed as a percentage of eligible capital for intercompany and for third party exposures, applicable to all the counterparties identified as Shadow Banking Entities. Any counterparty breaching this limit will be subject to a review which: (i) investigates the nature of the trades which have given rise to the exposure; and (ii) further reviews the nature of the counterparty to determine how the entity will come back within the EAD limit and whether risk mitigation is required. The limit has been set at a level which is sufficiently low to be protective to CGML’s capital base, but not so low as to result in a number of entities being caught under their normal trading pattern.

In the event that the counterparty limit is breached, and as with an aggregate limit breach, the breach will be reported by the CGML Risk Manager to the CGML Risk Committee together with an explanation for the breach and a plan to reduce exposure back within the limit.

2.2.5. Collateral Management

Collateral management refers to all systems, methods, processes, controls, data collection and Operations and Technology systems that are used to take, manage, value, maintain and realise collateral held for mitigation purposes.

The primary objectives of collateral management at Citi are:

1. Risk mitigation;
2. Operational efficiency in the use of collateral;
3. Robust documentation on such collateral;
4. A collateral structure that optimizes its use;
5. Efficiency and accuracy of reporting;
6. Liquidity management;
7. Capital allocation; and
8. Market competitiveness.

Collateral reports are prepared monthly for SFT and OTC exposures and are reviewed by the CGML Risk Manager, in particular for changes in the profile or composition of collateral, concentrations and unusual or concerning securities.

CGML undertakes almost exclusively margined business with its counterparties. Netting is generally permitted for both SFTs and OTC derivatives.

The majority of the collateral taken by CGML against OTC derivatives and SFT exposures is in the form of cash or G10 sovereign bonds.

The Margin Rules for Non-Centrally Cleared Derivatives (MRNCCD) came into force in September 2017, has resulted in an increase in the amount of securities taken as collateral.

MRNCCD is the new regulation to establish initial margin and variation margin requirements for non-centrally cleared derivatives entered into after the effective date of the regulation. The rules require two-way initial margin (IM) posting and daily variation margin (VM) exchange for certain types of counterparty and for certain products defined as in scope.

Collateral considered eligible is defined as:

- IM: cash, sovereign debt, government-sponsored debt, investment grade debt including corporate bonds, equities, gold, and shares of certain funds with appropriate haircuts;
- VM: cash for trades between swap dealers; same types of collateral as IM for trades between swap dealers and financial end users.

Occasionally, with appropriate agreement, other forms of collateral may be accepted.

2.2.6. Wrong Way Risk

CGML incurs both general and specific Wrong Way Risk in its business. Wrong Way Risk (WWR) occurs when a movement in a market factor causes Citi's exposure to a counterparty to increase at the same time as the counterparty's capacity to meet its obligations is decreasing. Stated differently, WWR occurs when exposure to a counterparty is negatively correlated with the credit quality of the counterparty. There are two main types of WWR:

- Specific WWR arises when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty due to the nature of the transactions with the counterparty; and
- General WWR is less definite than specific WWR and occurs where the credit quality of the counterparty is subject to impairment due to changes in macroeconomic factors. General Wrong-Way risk' arises when the likelihood of default by counterparties is positively correlated with general market risk factors.

WWR in a trading exposure arises when there is significant correlation between the underlying asset and the counterparty which, in the event of default, would lead to a significant mark-to-market loss. The interdependence between the counterparty credit exposure and underlying reference asset or collateral for each transaction can exacerbate and magnify the speed at which a portfolio deteriorates. Thus, the goal of Citi's WWR policy (part of the ICG Risk Manual) is to provide best practices and guidelines for the identification, approval, reporting and mitigation of specific and general WWR.

WWR is monitored at a Company level and includes circulation of a monthly report that identifies CDS-based, OTC or SFT transactions that generate Specific WWR. WWR is mitigated through the use of enforceable netting agreements, margining and offsetting or terminating transactions.

Citi's WWR policy further mandates ongoing product stress testing to identify potential general WWR using simulated macro-economic scenarios. General WWR reports are reviewed on an ongoing basis by senior management to determine appropriate management and mitigation.

2.2.7. Credit Rating Downgrade

Adequate liquidity and sources of funding are essential to Citi's businesses. Funding and liquidity risks arise from multiple factors, including a loss of liquidity from derivative transactions due to legally agreed conditions such as rating downgrade triggers.

Downgrade triggers can create a requirement for CGML to reserve additional liquidity in the event of rating agencies downgrades of CGML and can be present in both unsecured and secured derivative agreements. A typical downgrade trigger in unsecured agreements would require CGML to post variation margin on outstanding contract payable amount, or in secured agreements, downgrade triggers may require CGML to post additional initial margin or segregate margin received..

CGML includes the potential impact of a credit rating downgrade in its stress testing and scenario models to quantify the effect on its liquidity position.

A typical downgrade trigger in unsecured agreements would require CGML to post variation margin on outstanding contract payable amount, or in secured agreements, downgrade triggers may require CGML to post additional initial margin or segregate margin received. As at 31 December 2017, the potential value of the additional collateral pertaining to downgrade thresholds that CGML would need to post with counterparties in the event of a one-notch downgrade of its rating was $0.21bn and for a two-notch downgrade was $0.22bn.

CGML carries out two internal liquidity stress tests on a daily basis:

- S2 - Highly Stressed Market Disruption Scenario: S2 assumes market, credit and economic conditions are moderately to highly stressed with potential for further deterioration, and is used to measure a 12-month survival horizon; and
- Resolution Liquidity Adequacy Positioning (RLAP) ratio: The RLAP ratio assumes market and credit conditions are severely stressed and is used to measure a short-term 30-calendar day survival horizon.

Both stress tests assume a credit rating downgrade. While in case of S2, CGML is assumed to be downgraded one notch from current levels, RLAP assumes a three-notch downgrade of long-term ratings and a one-notch downgrade of short-term ratings of CGML.

In addition to the stress test scenarios, CGML has a robust monitoring and reporting framework to capture the potential liquidity impact of derivative downgrade triggers.

2.2.8. Credit and Funding Valuation Adjustments

Credit Valuation Adjustments (CVA) and Funding Valuation Adjustments (FVA) are applied to certain OTC derivative instruments in which the base valuation generally discounts expected cash flows using the relevant base interest rate curve for the currency of the derivative without specific consideration of the non-performance risk of the counterparty, nor Citi, nor the market term funding premium associated with those derivatives. This particularly impacts OTC derivatives that are not wholly collateralised (. As not all counterparties have the same credit risk as that implied by the relevant base curve, a CVA[1] is necessary to incorporate the market view of both counterparty credit risk and Citi's own credit risk in the valuation. FVA reflects a market funding risk premium inherent in the uncollateralised portion of derivative portfolios and in collateralised derivatives where the terms of the agreement do not permit the reuse of the collateral received.

Citi's CVA and FVA methodology is composed of two steps.

- First, the exposure profile for each counterparty is determined using the terms of all individual derivative positions and a Monte Carlo simulation or other quantitative analysis to generate a series of expected cash flows at future points in time. The calculation of this

[1] Liability-side CVA is sometimes referred to as *Derivative DVA*.

exposure profile considers the effect of credit risk mitigants and sources of funding, including pledged cash or other collateral and any legal right of offset that exists with the counterparty through arrangements such as netting agreements. Individual derivative contracts that are subject to an enforceable master netting agreement with the counterparty are aggregated for this purpose, since it is those aggregate net cash flows that are subject to non-performance risk. This process identifies specific, point-in-time future cash flows that are subject to non-performance risk and unsecured funding, rather than using the current recognised net asset or liability as a basis to measure the CVA and FVA.

- Second, for CVA, market-based views of default probabilities derived from observed credit spreads in the credit default swap (CDS) market are applied to the expected future cash flows determined in step one. Citi's own-credit CVA is determined using Citi-specific CDS spreads for the relevant tenor. Generally, counterparty CVA is determined using a valuation technique based on CDS indices for each credit rating and tenor, i.e. via a proxy approach. For certain identified netting sets where individual analysis is practicable (e.g., exposures to counterparties with liquid CDSs), counterparty-specific CDS spreads are used. For FVA, market-based views of term liquidity spreads are applied to the expected future funding requirement.

The CVA and FVA are designed to incorporate a market view of the credit and funding risk, respectively, inherent in the derivative portfolio. However, most unsecured derivative instruments are negotiated bilateral contracts and are not commonly transferred to third parties. Derivative instruments are normally settled contractually or, if terminated early, are terminated at a value negotiated bilaterally between the counterparties. Thus, the CVA and FVA may not be realised upon a settlement or termination in the normal course of business. In addition, all or a portion of these adjustments may be reversed or otherwise adjusted in future periods in the event of changes in the credit or funding risk associated with the derivative instruments.

2.3. Market Risk Management

The risks associated with financial instruments are a significant component of the overall risk faced by CGML through its activity as a broker-dealer. Market risk is the risk to earnings or capital from adverse changes in market factors. Price risk losses arise from fluctuations in the market value of trading and non-trading positions resulting from changes in interest rates, credit spreads, foreign exchange rates, equity and commodity prices, and in their implied volatilities. Foreign exchange risk is managed as part of the market risk framework. Trading positions are marked to market, with the results reflected in earnings.

CGML's derivative transactions are principally in the interest rate, FX, equity, credit and commodity markets. CGML maintains positions in financial instruments for four principal reasons:

- As a result of the sale or assignment of derivative positions to its clients (usually in the over-the-counter market);
- To satisfy its clients' requirements to buy or sell investments;
- As a result of underwriting activities; and
- To economically hedge positions on its books created by the business activity noted above.

2.3.1. Market Risk Limit Framework

Under the (Citi-level) Citi Mark-to-Market Policy, each business is required to establish, with approval from the Independent Market Risk Management function, a market risk limit framework for identified risk factors. This framework must clearly define approved risk profiles, include permitted product lists (PPL), follow the new product approval process for complex products (NPAC) and remain within the parameters of Citi's overall risk appetite, with the established limits monitored by Market Risk Management.

Responsibility for hedging or otherwise mitigating market risk lies in the first instance with the business originating the risk and the management of this process begins with the employees who work most closely with CGML's customers, products and markets and extends up to the senior executives who manage these businesses with a complementary aggregation up to the country level. Risks taken must be commensurate with the risk appetite of the firm as set by senior management. The Market Risk Management function independently monitors market risks via a comprehensive system of limits and triggers.

For traded product price risk, all traded risk exposures are aggregated in the CitiRisk Market Risk (CRMR) system daily. CRMR is used as the primary system to calculate aggregated market risk measures, including the firm's Value at Risk. Price risk in Citi's trading portfolios is monitored using a series of measures, including but not limited to:

- Risk factor sensitivities;
- Value at Risk (VaR);
- Stressed VaR;
- Volatility and correlation;
- Weekly stress testing.

For CGML, Market Risk Capital Appetite is captured in CGML's Risk Appetite Framework which sets the level of risk taking the CGML Risk Committee and Board are willing to take. Price risks are measured in accordance with established standards to ensure consistency across businesses and the ability to aggregate risk. Citi's market risk limit framework consists of Tier 1 limits, Tier 2 limits and Tier 3 management triggers. Tier 1 limits are generally the most significant limits for Citi overall, and include limits on trading exposures in certain larger countries. Tier 2 limits are generally set at a product group level or in some cases at a desk, regional or legal entity level (as is the case for CGML). Tier 3 management triggers are desk-level triggers on non-material risk factors.

For CGML, the Framework is supplemented by daily monitoring against CGML's VaR, Tier 2 market risk factor limits and Tier 3 market risk factor management triggers and regular (weekly) stress testing, as well as monthly and quarterly reporting to CGML's senior management and the Board respectively.

2.3.2. Permitted Product Lists (PPL) and Trading Mandates

All Citi Markets businesses, and all Citi businesses undertaking activity which gives rise to mark-to-market (MTM) exposure and/or are considered in-scope of the Volcker Rule, must have one or more Permitted Products List (PPL) to cover all of their activity and have a Trading Mandate. The PPL defines the products that the business is permitted to trade, as well as any restrictions on the trading or booking of each product that have been imposed by the control function covering the business. As part of this process, a CGML PPL is maintained. The Trading Mandate forms part of the documentation required to define how the desk's activity is permissible under the Volcker rule. The Trading Mandate summarises the trading and hedging strategies of the business and cross-refers to the PPL.

Market Risk Management, in consultation with the Business Sponsor, is responsible for approving the Trading Mandate and PPL for each trading desk, establishing the Tier 1 and Tier 2 Limit framework, and validating the Volcker Tier 3 Limit framework proposed by the business.

2.3.3. Market Risk Measurement

<u>2.3.3.1 Value at Risk (VaR), Risk Factor Sensitivity Limits and Stress Loss Limit</u>

CGML's VaR reports are circulated daily for monitoring of: (i) the VaR usage against the overall VaR limit; (ii) the standalone VaR by market risk factor; (iii) the component VaR (CVaR) contribution to total VaR; and (iv), the stressed VaR.

As well as an overall VaR limit, the Company has factor sensitivity limits in place for each market risk factor that are monitored daily. Factor sensitivities are defined as the change in the value of a position for a defined change in a market risk factor (e.g. the change in the value of a Treasury bill for a one basis point change in interest rates). It is the responsibility of each business to seek to ensure that factor sensitivities are calculated and reported for all relevant risks taken within a trading portfolio.

VaR estimates the potential decline in the value of a position or a portfolio under normal market conditions. The firm's VaR methodology incorporates the factor sensitivities of the trading portfolio with the volatilities and correlations of those factors and is expressed as the risk to the firm over a one-day holding period, at a 99% confidence level. Citigroup's VaR is based on the volatilities of and correlations between a multitude of market risk factors, as well as factors that track the specific issuer risk in debt and equity securities. CGML's VaR model is described in more detail in Section 10.

Stress testing is performed on trading portfolios on a regular basis to estimate the impact of extreme market movements. It is performed on both individual trading portfolios, as well as on aggregations of portfolios and businesses. Independent Market Risk Management, in conjunction with the businesses, develops stress scenarios, reviews the output of periodic stress testing exercises and uses the information to make judgements as to the ongoing appropriateness of exposure levels and limits.

Exposure that approaches or exceeds limit or trigger levels is escalated within Market Risk Management and to CGML's Market Risk Manager and the CGML Risk Manager, with necessary actions taken.

Where the Equities business is concerned, an ex-ante stress loss based escalation framework has been put in place to cover all block trades, including accelerated equity offerings, equity underwritings, rights offerings and special situation (event-driven) transactions. Transactions with estimated stress losses above certain levels require escalation to the EMEA Chief Risk Officer, the CGML Chief Executive Officer and to the Board.

2.4. Liquidity Risk Management

CGML defines liquidity risk as the risk that it will not be able to meet efficiently both expected and unexpected current and future cash flow and collateral needs without adversely affecting either daily operations or its financial condition.

Citi operates as a centralised treasury model, where the overall balance sheet is managed by Treasury, through its Global Franchise and Regional Treasurers. The EMEA Regional Treasurer is supported by the UK Treasurer who is responsible for CGML's balance sheet and liquidity profile. The UK Treasurer oversees the liquidity management team responsible for managing CGML's liquidity on a day to day basis. The liquidity management team is specifically responsible for CGML's daily funding, liquidity risk management, liquidity stress testing and provision of oversight of the Fixed Income and Equity Finance desks (including setting and monitoring limits).

CGML adheres to Citi's Liquidity Risk Management Policy (Policy) which requires it to define its liquidity risk appetite and operate a limit and trigger structure to ensure compliance.

According to the Policy, CGML is required to prepare a detailed plan of its liquidity position which also considers a forecast of future business activities. This plan is called the Funding and Liquidity Plan (FLP) and it addresses strategic liquidity issues and establishes the parameters for identifying, measuring, monitoring and limiting liquidity risk and sets forth key assumptions for liquidity risk management. The FLP is divided into the following component parts:

1) Contingency Funding Plan (CFP);
2) Intra-day Liquidity Risk Management Plan; and
3) Balance Sheet Funding and Liquidity Plan.

Further, the Policy requires each entity in Citigroup to establish an appropriate liquidity risk appetite and operate a limit and trigger structure. CGML uses two internal stress tests to monitor its liquidity position. The first stress test covers a 12 month survival horizon in a highly stressed market disruption scenario (S2), whilst the other covers a 30 day horizon in a severely stressed market disruption scenario (Resolution Liquidity Adequacy and Positioning (RLAP) – known as LCR Prime prior to July 2017).

Stress testing is intended to quantify the likely impact of an event on the balance sheet and liquidity position and to identify viable contingent actions that can be utilised in a liquidity event. The internal stress testing scenarios are developed in accordance with the Citi's Liquidity Risk Management Policy. The Citigroup Liquidity Book of Assumptions provides the comprehensive set of assumptions used for the broker dealer vehicles, including CGML.

Due to the nature of the broker dealer business model and funding profile, this set of assumptions focuses on secured financing and maintaining CGML's core business franchise throughout the period of stress. The assumptions are considered appropriate for CGML given its business activities, scale, complexity and position within the wider group. The stress scenarios include realistic deterioration in secured funding sources and an inability to roll unsecured funding (sourced via its affiliate relationships). The scenarios also include a deterioration in Citigroup's credit ratings.

CGML is also required to comply with the European Commission (EC) Delegated Act (2015/16) which sets out qualitative and quantitative standards for managing liquidity. Accordingly, CGML monitors its liquidity position against the EC Liquidity Coverage Ratio (LCR). The LCR is designed to promote short term resilience of an entity's liquidity risk profile by ensuring that it has sufficient High Quality Liquid Assets (HQLAs) to survive an acute stress scenario lasting 30 days. Throughout 2017, CGML was in compliance with the LCR requirements.

The liquidity position of CGML is calculated and reported to senior management on a daily basis and reviewed by the UK Asset and Liability Committee (ALCO) and CGML Board through the CGML Risk Committee. CGML's Risk Committee reviews the Liquidity Risk Management Policy and the Internal Liquidity Adequacy Assessment Process (ILAAP) document (explained below) and approves the Liquidity Risk Management Framework, the Funding and Liquidity Plan, the Contingency Funding Plan and any relevant CGML-specific liquidity policies.

On an annual basis CGML submits an ILAAP document to the PRA. The ILAAP is a regulatory requirement set by the PRA under its liquidity regime, defined in the PRA Rulebook for Capital Requirements Regulation (CRR) firms. The ILAAP is a process for the identification, measurement, management and monitoring of liquidity implemented by the firm. A key goal of this process is to ensure that a firm is able to meet the Overall Liquidity Adequacy Rule (OLAR), which states that a firm must at all times maintain liquidity resources which are adequate (both as to amount and quality) to ensure that there is no significant risk that its liabilities cannot be met as they fall due.

CGML also monitors its position against the Net Stable Funding Ratio (NSFR), adopting Basel III guidelines. Final C rules and standards for the NSFR have not yet been set. The NSFR has a time horizon of one year and has been developed to promote a sustainable maturity structure of assets and liabilities.

The analysis conducted during the 2017 ILAAP, considering the risks identified and assessed, and through the application of tools, limits, policies and liquidity stress tests, demonstrates that CGML's liquidity risk management framework is appropriate for ensuring that sufficient liquidity resources are in place on a forward-looking basis. This conclusion is based on a quantitative assessment of CGML's liquidity, through examination of internal and external stress testing results, and is further supported by qualitative improvements to CGML's overall liquidity risk management framework.

2.5. Operational Risk Management

Operational risk is the risk of loss resulting from inadequate or failed internal processes, systems or human factors, or from external events, and includes reputation and franchise risk associated with business practices or market conduct. It also includes the risk of failing to comply with applicable laws, regulations, ethical standards or Citi policies. Operational Risk does not encompass strategic risk or the risk of loss resulting solely from authorised judgments made with respect to taking credit, market, liquidity or insurance risk.

Operational Risk Management proactively assists the businesses, Operations, Technology and other independent control groups in enhancing the effectiveness of controls and managing operational risks across products, business lines and regions. Furthermore, operational risks are considered as new products and business activities are developed and processes are designed, modified or sourced through alternative means.

The objective is to keep operational risk at appropriate levels relative to the characteristics of Citi's businesses, the markets in which it operates, its capital and liquidity, and the competitive, economic and regulatory environment.

2.5.1. Operational Risk Framework

Citi's (Citi-level) Operational Risk Management (ORM) Policy establishes a consistent Operational Risk Management Framework designed to balance strong corporate oversight with well-defined independent Risk Management, for assessing and communicating operational risk and the overall effectiveness of the internal control environment across Citi. That framework is applied at the CGML level, together with the Key Operational Risks (KORs) that have been identified as being specifically relevant for CGML and are a component of the CGML Risk Management Framework.

To anticipate, mitigate and control operational risk, Citi maintains a system of policies and has established a consistent framework for monitoring, assessing and communicating operational risks and the overall effectiveness of the internal control environment across Citi. As part of this framework, Citi has established a Manager's Control Assessment (MCA) programme which helps managers to self-assess key operational risks and controls and to identify and address weaknesses in the design and effectiveness of internal controls that mitigate significant operational risks.

The ORM Framework establishes a foundation on which the activities of businesses, regions and functions, the resulting operational risks and the associated controls are identified, periodically assessed, subject to corrective action, appropriately documented and communicated. Specifically, the ORM Framework establishes minimum standards for consistent identification, measurement, monitoring, reporting and management of operational risk across Citi.

The process established by the ORM Framework is expected to lead to effective anticipation and mitigation of operational risk and improved operational risk loss experience and includes the following steps:

- identify and assess Key Operational Risks (KORs);
- design controls to mitigate identified risks;
- establish Key Risk Indicators (KRIs);
- implement a process for early problem recognition and timely escalation;
- produce comprehensive operational risk reporting; and
- ensure that sufficient resources are available to actively improve the operational risk environment and mitigate emerging risks.

As new products and business activities are developed, processes are designed, modified or sourced through alternative means and operational risks are considered.

2.5.2. Measurement of Operational Risk

To support advanced capital modelling and management, each business is required to capture relevant operational risk event information. A localised version of the Citi risk capital model for operational risk has been developed and applied against CGML. The PRA has approved this model, including the associated capital allocation, for use as an Advanced Measurement Approach (AMA). It uses a combination of internal and external loss data to support statistical modelling of capital requirement estimates, which are then adjusted to incorporate qualitative aspects of the operational risk and control environment.

To enhance its operational risk management, CGML has implemented a forward looking scenario analysis programme to identify and quantify emerging operational risks, through a systematic process of obtaining opinions from business managers and Risk Management experts to devise reasoned assessments of the likelihood and loss impact of plausible, high severity operational risk losses. This development has been integrated into the operational risk capital assessment for CGML.

In addition, there are various governance forums for escalation and reporting of internal control, compliance, regulatory and risk issues, including operational risk loss events.

2.5.3. Key Operational Risks

Key Operational Risks (KORs) are derived from an evaluation of operational risk exposure on a residual risk basis considering CGML's current business strategy, substantial emerging risks and other relevant factors which include assessment of the four Basel operational risk data elements, i.e. internal losses, external losses, scenario analysis and output from Internal Audit assessments and from self-assessment results from the Manager's Control Assessment (MCA). The identified KORs for CGML include those set out below and are in the process of being incorporated into the Citi-level global operational risk appetite framework approved in Q4 2017. Risks will align to the Citi-wide global risk taxonomy that is being developed for operational and compliance risk.

ORM liaises with Subject Matter Experts (SMEs) aligned to each KOR to define the risk for CGML and to identify appropriate metrics i.e. Key Indicators (KIs) to monitor KOR risk profiles. Given that CGML's business is almost entirely wholesale in nature, Institutional Client's Group (ICG), Segment metrics are leveraged as far as possible.

2.5.3.1 Anti-Money Laundering (AML) and Sanctions Non-Compliance Risk

Local and international AML and Sanctions requirements impact the activities carried out by the Company and its clients. Following the development of Sectoral Sanctions to address the political situation in Ukraine, Citi has developed an enhanced control infrastructure around activities that may be affected by applicable sanctions regimes. Regulatory requirements concerning AML controls continue to focus particularly on customer due diligence and suspicious activity monitoring, and Citi continues to implement enhancements in these areas.

2.5.3.2 Conduct Risk

Citi is exposed to the risk of improper conduct through prohibited and manipulative practices by individual employees, collusive practices across a group of employees within and across market participants, and misconduct that harms customers or the integrity of the markets. Citi's exposure to conduct risk resulted in the issuance of a Citi-wide Conduct Risk Policy which sets out a framework through which Citi manages, minimises and mitigates its significant conduct risks, and describes the responsibilities of each of the three lines of defence for complying with the policy.

2.5.3.3 Cyber Risk

Citi is exposed to cyber/information security risk through hacking of Citi or third-party systems containing Citi's data, and denial of service attacks on Citi and third-party servers.

The cyber security threat landscape is rapidly evolving with increasingly sophisticated attacks for gain (e.g. denial of service, account takeover) on Citi, our clients and third party applications. Citi's Information Security programme strategy is built on a deep understanding of the threat environment through the work of the Global Information Security (GIS) Cyber Intelligence Centre (CIC). External benchmarks indicate that Citi appears to be well placed to deal with current threats. However, due to the ever-changing evolution of the threat landscape, Citi continues to invest in its identification, prevention and detection capabilities.

2.5.3.4 Geopolitical Risk

Geopolitical risk is the risk of financial impact and /or the inability to continue with business due to geopolitical instability and /or changes in the geopolitical environment (e.g. capital controls, impact of Brexit, Middle East and Russia geopolitical instability) and dealing with the impact of "flight to quality" requiring due diligence in compressed timeframes. In addition geopolitical instability also puts Citi at risk of terrorism-related events. Citi has established a comprehensive programme to meet the organisational change requirements resulting from Brexit and has well established and tested processes in place to mitigate the impact of terrorism related risk events.

2.5.3.5 Internal Fraud (Unauthorised Trading Risk)

The risk of loss due to fraudulent activity such as unauthorised trading (rogue trading), mis-marking or payments fraud is a key risk for CGML. A number of initiatives are ongoing to enhance Citi's fraud prevention framework including rogue trading prevention and detection controls. These include the implementation of consistent Markets-wide controls, designed to identify and prevent unauthorised trading in the Markets business and Corporate Treasury.

2.5.3.6 System Run Away Risk (Low Touch Activity Trading Risk)

System run away risk (low touch activity trading risk) is the risk of systemic controls' failure to prevent or limit loss exposure for highly automated transactions. This risk specifically includes elevated risk of breaks in high frequency/algorithmic electronic trading due to failure to keep technological capabilities up-to-date, the ability to respond quickly to operational risk events where increased duration is directly correlated to severity, and where response is compromised by fragmented infrastructure and substandard monitoring capabilities.

Citi has established a risk and control framework for Low Touch Activity and continues to ensure that enhanced controls are implemented to mitigate this risk.

2.5.3.7 Inaccurate Reporting and Data Management

Inaccurate reporting and data management risk is the risk that data may be of an insufficient quality to meet Citi's business, regulatory, financial reporting and customer needs resulting from either the business originator of data being unable to provide accurate, complete and timely records of business transactions and customer activities or from a subsequent processor of that data handling the data in an incorrect manner. The quality management inadequacies could also result in non-compliance with regulatory standards. Citi has identified and implemented a number of control enhancements to ensure that any such risks are identified and mitigated on a timely basis.

2.5.3.8 Model Risk Management

Citi is exposed to model risk through the use of incorrect or inaccurate models (such as failed or non-validated models) and incorrect uses of models (for example using the model beyond its approved use cases). Model risk may result in adverse outcomes including but not limited to financial losses (for instance inaccurate quantification of risks, loosening of lending standards) and regulatory criticism.

2.5.3.9 Third Party Vendor Management including Affiliates

Citi is exposed to third party risk through inconsistent or inadequate delivery of products or services that support core operational or client-facing processes, misconduct on the part of third parties (e.g., fraud), or failure by third parties to ensure that the contracted products or services are delivered to Citi in a safe and sound manner and in compliance with applicable laws, regulations and Citi policies.

2.6. Stress Testing

2.6.1. Overview

The Citi Chief Risk Officer is responsible for monitoring and controlling major risk exposures and concentrations across Citi. This includes the aggregation of risks within and across businesses, as well as subjecting those risks to alternative stress scenarios in order to assess the potential economic impact they may have on Citi. This aggregation is also performed at a CGML level.

Stress tests are undertaken across Citi and CGML and cover mark-to-market, available-for-sale, and amortised cost portfolios. These firm-wide stress reports seek to measure the potential impact to Citi and CGML and its component businesses, of stresses such as the risk of very large movements in a number of key risk factors (e.g. interest rates, credit spreads), as well as the potential impact of a range of historical and hypothetical forward-looking systemic stress scenarios.

Supplementing the stress testing described above, Risk Management works with input from the businesses and Finance to provide periodic updates to senior management and the CGML Board on significant potential exposures across CGML arising from risk concentrations, financial market participants and other systemic issues. These risk assessments are forward-looking exercises, intended to inform senior management and the Board about the potential economic impacts to CGML that may occur, directly or indirectly, as a result of hypothetical scenarios, based on judgmental analysis from Independent Risk Managers.

The stress testing and risk assessment exercises are a supplement to the standard limit-setting and risk capital exercises, as these processes incorporate events in the marketplace and within CGML that impact the firm's view of the form, magnitude, correlation and timing of identified risks that may arise. In addition to enhancing awareness and understanding of potential exposures within CGML, the results of these processes serve as the starting point for the management of risk and mitigation strategies.

2.6.2. Market Risk

Citi performs stress testing on a regular basis to estimate the impact of extreme market movements. It is performed on individual positions and trading portfolios, as well as in aggregate and inclusive of multiple trading portfolios. Market Risk Management after consultations with the businesses, develops both systemic and specific stress scenarios, reviews the output of periodic stress testing exercises, and uses the information to assess the ongoing appropriateness of exposure levels and limits.

Citi uses two complementary approaches to market risk stress testing across all major risk factors (i.e., equity, foreign exchange, commodity, interest rate and credit spreads):

- Global Systemic Stress Testing (GSST) - top-down systemic stresses; and
- Business Specific Stress Testing (BSST) for the ICG - bottom-up business specific stresses.

Systemic stress tests are designed to quantify the potential impact of extreme market movements on a firm-wide basis, and are constructed using both historical periods of market stress and projections of adverse economic scenarios. Business specific stress tests are designed to probe the risks of particular portfolios and market segments, especially those risks that are not fully captured in VaR and systemic stresses.

Both categories of stress testing can be based upon either a range of historical periods of market stress or purely hypothetical future market events.

2.6.3. Credit Risk

The Product Stress Testing (PST) system provides the ability to apply various stress scenarios to counterparty positions, portfolios and transactions. The stress results and impact of changes on counterparty risk exposure improves understanding of the risk profile of a counterparty and assists in diagnosing their vulnerabilities to specific market events.

The core CCR stress testing scenarios are the Global Systemic Stress Testing (GSST) scenarios, which include the hypothetical and historical scenarios. The Stress Testing and Risk Capital Council is responsible for developing the stress scenarios and for reviewing them annually in order to ensure that they remain appropriate in light of current and anticipated market conditions. Each Credit Risk team can use further scenarios that are relevant for their specific industry and portfolio.

Ad-hoc market event scenarios are developed with input from Market Risk. Market Risk define the market risk factor shocks relevant to the event. These are then translated into PST into the scenarios by Risk Analytics and Technology used to stress the positions. FRI are responsible for the infrastructure and governance of the Product Stress Testing application. Risk Analytics are responsible for the methodology of the stress impact calculations based on the provided scenarios.

2.6.4. Liquidity Risk

CGML's use of stress testing and scenario analysis is intended to quantify the potential impact of a liquidity event on CGML's balance sheet and liquidity position, and to identify viable funding alternatives that can be utilised. These scenarios include:

- potential significant changes in key funding sources;
- market triggers (such as credit rating downgrades);
- changes to use of funding; and
- political and economic conditions, including standard and stressed market conditions as well as firm-specific events.

CGML carries out two internal liquidity stress tests on a daily basis as referred to in section 2.6.4.

The internal stress testing scenarios are developed in accordance with the Citi Global Framework and Liquidity Policy. The Citigroup Liquidity Book of Assumptions provides the comprehensive set of assumptions used for the Broker Dealer vehicles, including CGML.

Due to the nature of the Broker Dealer business model and funding profile, this set of assumptions focuses on secured financing and maintaining CGML's core business franchise throughout the period of stress. The assumptions are considered appropriate for CGML given its business activities, scale, complexity and position within the wider group. The scenarios include realistic deterioration in secured funding sources and an inability to roll unsecured funding (sourced via its affiliate relationships). The scenarios also include deterioration in Citigroup's credit ratings.

Assumptions developed are product specific and include consideration for expected behaviour of customers and the firm during stress.

In addition, a Stress Testing Committee, comprising Legal Entity Treasury, Independent Risk and Finance desks is established to review stress test results on a monthly basis which are also shared with the UK ALCO.

CGML is also required to comply with the European Commission Delegated Act (2015/16) which sets out qualitative and quantitative standards for managing liquidity. Accordingly, CGML monitors its liquidity position against the European Commission Liquidity Coverage Ratio (LCR). The LCR is designed to promote short term resilience of an entity's liquidity risk profile by ensuring that it has sufficient high quality liquid assets to survive an acute stress scenario lasting 30 days.

2.6.5. Operational Risk

CGML's operational risk scenario analysis programme is planned and executed in accordance with the global ORM Scenario Analysis Standards, an appendix to the ORM policy.

Scenario analysis provides a forward looking view of operational risk that complements historical internal and external data. It is a systematic process to derive assessments for the likelihood and potential loss impact of plausible, high severity and low likelihood operational risk losses, i.e. 'fat-tailed' hypothetical events.

CGML scenarios are ratified by the UK Chief Country Officer and are used to benchmark estimates from CGML's operational risk capital model, under governance provided by the CGML Capital Committee.

Scenario analysis is also used as a tool to strengthen Risk Management controls and to stimulate dialogue and gain greater insights into emerging and existing key risks.

3. Regulatory Framework for Disclosures

The tables presented in this section show an outline of the differences in the basis of consolidation for accounting and regulatory purposes. It provides the breakdown of the carrying amounts reported under the scope of regulatory consolidation to the different risk categories.

3.1. Differences between Accounting and Regulatory Exposure Amounts

Table 2: LI1 - Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories

This section enable users to identify the differences between the scope of accounting consolidation and the scope of regulatory consolidation and the allocation of the regulatory scope of consolidation into the different risk frameworks laid out in Part Three of the CRR.

		Carrying values of items			
	Carrying values under scope of regulatory consolidation	Subject to the credit risk framework	Subject to the CCR framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**
Assets					
Financial assets at amortised cost: Cash at bank and in hand	2,955	1,001			1,954
Financial assets at amortised cost: Collateralised financing transactions	70,909		70,909		
Financial assets at fair value through profit and loss - derivatives	142,270		142,270	142,270	
Financial assets at fair value through profit and loss - inventory	56,731		56,652	56,652	80
Financial assets designated at fair value through profit and loss	64,516		64,516	64,516	
Financial assets classed as available for sale	34	34			
Pension	478				478
Other Assets	23,992	998	22,811		181
Total assets	**361,885**	**2,033**	**357,158**	**263,438**	**2,693**
Liabilities					
Financial liabilities at amortised cost: bank loans and overdrafts	16,461		16,461		
Financial liabilities at amortised cost: Collateralised financing transactions	51,180		51,180		
Financial liabilities at fair value through profit and loss - derivatives	143,870		143,870	143,870	
Financial liabilities at fair value through profit and loss - inventory	43,194		43,194	43,194	
Financial liabilities designated at fair value through profit and loss	57,000		57,000	57,000	
Other Liabilities	30,026		25,031	3,754	1,241
Subordinated Liabilities	4,012				4,012
Called up share capital	1,500		-		
Reserves	14,642		-		
Total liabilities	**361,885**	**-**	**336,736**	**247,818**	**5,253**

Differences between accounting and regulatory exposure amounts

CGML is not required to publish consolidated financial statements; therefore the "Carrying values as reported in published financial statements" has not been disclosed.

- Carrying values under scope of regulatory consolidation - the total amount reported in this column do not equal the sum of the columns relating to the regulatory frameworks, as certain line items are subject to more than one regulatory framework. Consequently, assets included in a line item can be subject to credit risk, counterparty credit risk and market risk.
- Subject to credit risk framework - this is based on non-trading book asset.
- Not subject to capital requirements or subject to capital deduction – these are assets that are deducted from own funds.
- Items measured and designated at fair value through profit and loss are trading book items and can be subject to credit risk, counterparty credit risk and market risk.

Table 3 : LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

		Items subject to	
	Total	Credit risk framework	CCR framework
As at 31 December 2017	$m	$m	$m
Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1)	359,191	2,033	357,158
Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	336,735	-	336,735
Total net amount under the regulatory scope of consolidation	**22,456**	**2,033**	**20,423**
Off-balance sheet amounts	-	-	-
Differences due to different netting rules and collateral usage	107,326	518	106,808
Other	5,724		5,724
Exposure amounts considered for regulatory purposes	**135,506**	**2,551**	**132,955**

The total column cannot directly reconcile to the carrying value in Table 2above, as the market risk framework and items not subject to capital requirements or subject to deduction from capital are not reflected in Table 3.

Tables LI1 and LI2 are new tables for 31 December 2017 for which no prior year comparatives are shown.

4. Own Funds

Under the PRA's minimum capital standards, CGML is required to maintain a prescribed excess of own funds over its capital resources requirements. Own funds are measured and reported in accordance with the provisions of the Capital Requirements Regulation (CRR).

Regulatory capital comprises the following distinct elements for CGML:

- Common Equity Tier 1 capital, which includes ordinary share capital, retained earnings, and capital reserves;
- Additional Tier 1 capital
- Tier 2 capital, which includes Long Term Subordinated Debt;
- Deductions from capital, which include:
  - Intangible assets;
  - Certain securitisation and free delivery positions;
  - Defined benefit pension assets;
  - Prudent valuation adjustments;
  - Credit Valuation Adjustments (CVA)

This disclosure has been prepared using the format set out in Annex IV of the final 'Implementing technical standards with regard to disclosure of own funds requirements for institutions' (Commission implementing regulation- EU 1423/2013).

This table shows the components of regulatory capital as at 31 December 2017.

Table 4 : Own funds disclosure template

Own funds disclosure template		31/12/17	31/12/16
		$m	$m
Common Equity Tier 1 (CET1) capital: Instruments and reserves			
1	Capital Instruments and the related share premium accounts	1,500	1,500
2	Retained earnings[2]	951	950
3	Accumulated other comprehensive instruments (and other reserves)	11,053	10,997
6	**Common Equity Tier 1 (CET1) capital before regulatory adjustments**	13,504	13,447
Common Equity Tier 1 (CET1) capital: regulatory adjustments			
7	Additional value adjustments	(487)	(468)
8	Intangible assets (net of related tax liabilities)	(179)	(176)
15	Defined-benefit pension fund assets	(478)	(455)
20a	Exposure amount of the following items which qualify for a RW of 1250%, where the institution opts for the deduction alternative	(88)	(94)
20c	of which: securitisation positions	(80)	(93)
20d	of which: free deliveries	(8)	(1)
24	CET1 capital elements or deductions - other	(3)	-
28	**Total regulatory adjustments to Common Equity Tier 1 (CET1)**	(1,234)	(1,194)
29	**Common Equity Tier 1 (CET1) capital**	12,270	12,253

[2] Retained earnings do not include the impact of audited profit for the respective years. Impact of audited profit is shown in table 5 "Balance sheet reconciliation below.

Table 4: Own funds disclosure template continued

Own funds disclosure template		31/12/17	31/12/16
Additional Tier 1 (AT1) capital: instruments			
30	Capital instruments and the related share premium accounts	1,800	-
31	of which: classified as equity under applicable accounting standards	1,800	-
36	**Additional Tier 1 (AT1) capital before regulatory adjustments**	1,800	**-**
Additional Tier 1 (AT1) capital: regulatory adjustments		-	
43	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	-	-
44	**Additional Tier 1 (AT1) capital**	1,800	-
45	**Tier 1 capital (T1 = CET1 + AT1)**	14,070	12,253
Tier 2 (T2) capital: instruments and provisions			
46	Capital instruments and the related share premium accounts	4,012	4,585
51	**Tier 2 (T2) capital before regulatory adjustments**	4,012	4,585
57	Total regulatory adjustments to Tier 2 (T2) capital	-	-
58	**Tier 2 (T2) capital**	4,012	4,585
59	**Total capital (TC = T1 + T2)**	18,082	16,838
60	**Total risk weighted assets**	130,256	111,587
Capital ratios and buffers			
61	Common Equity Tier 1 (as a percentage of total risk exposure amount)	9.42%	10.98%
62	Tier 1 (as a percentage of total risk exposure amount)	10.80%	10.98%
63	Total capital (as a percentage of total risk exposure amount)	13.88%	15.09%
64	Institution specific butter requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk butter, plus systemically important institution butter expressed as a percentage of risk exposure amount)	5.81%	5.16%
65	of which: capital conservation buffer requirement	1.25%	0.63%
66	of which: countercyclical butter requirement	0.06%	0.04%
67	of which: systemic risk butter requirement	0.00%	0.00%
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	1.74%	1.15%

Further details of the main features of CGML’s capital instruments can be found in Appendix 5.

Table 5: Balance sheet reconciliation

This table presents CGML's capital resources as at 31 December 2017. The template is prepared using the format set out in Annex I of the final 'Implementing technical standards with regard to disclosure of own funds requirements for institutions' (Commission implementing regulation- EU 1423/2013).

	31/12/17	31/12/16
	$m	$m
Shareholders' funds as reported in the balance sheet		
Called up share capital	1,500	1,500
Other equity instruments	1,800	-
Capital reserves	9,999	9,999
Retained earnings and other reserves	2,732	2,381
Total shareholders' funds as reported in the balance sheet	**16,031**	**13,880**
Common Equity Tier 1 (CET1) capital: regulatory adjustments		
Additional value adjustments	(487)	(429)
Intangible assets (net of related tax liabilities)	(179)	(176)
Defined-benefit pension fund assets	(478)	(437)
Exposure amount of the following items which qualify for a RW of 1250 %, where the institution opts for the deduction alternative	(88)	(94)
of which: securitisation positions	(80)	(93)
of which: free deliveries	(8)	(1)
CET1 capital elements or deductions – other	(3)	0
Total Regulatory deductions	(1,234)	(1,136)
Tier 1 capital (T1 = CET1 + AT1)[3]	**14,797**	**12,744**
Subordinated liabilities qualifying as Tier 2	4,012	4,585
Total regulatory own funds	**18,809**	**17,329**

3 Tier 1 Capital includes audited profits for 2017

5. Capital Requirements and Buffers

CGML complies with the CRD IV minimum capital requirements to ensure that sufficient capital is maintained to cover all relevant risks and exposures. For this purpose, the firm calculates capital charges for market risk, counterparty risk and operational risk based upon a number of internal models and standardised approaches, as well as recognising a number of credit risk mitigation techniques.

To assess the adequacy of capital to support current and expected future activities, the firm produces regular capital forecasts for CGML, taking into account both normal business conditions and a variety of stressed scenarios. On at least an annual basis CGML prepares an Internal Capital Adequacy Assessment Process (ICAAP) document, setting out its risk appetite, capital requirements and associated policies and procedures.

The following table set out CGML's Pillar 1 minimum capital requirements and Risk Weighted Assets (RWAs) as at 31 December 2017 and 30 September 2017.

Table 6: OV1 - Overview of RWAs

This table provide an overview of total RWA forming the denominator of the risk-based capital requirements calculated in accordance with Article 92 of the CRR. Further breakdowns of RWAs are presented in subsequent parts of these disclosures.

	RWAs		Minimum capital requirements
	31/12/17	30/9/17	31/12/17
	$m	$m	$m
Credit risk (excluding CCR)	2,157	2,646	173
Of which the standardised approach	2,157	2,646	173
CCR	71,074	72,029	5,686
Of which mark to market	54,460	54,122	4,357
Of which internal model method (IMM)	8,822	9,539	706
Of which risk exposure amount for contributions to the default fund of a CCP	341	336	27
Of which CVA	7,450	8,033	596
Settlement risk	106	42	8
Market risk	38,169	38,630	3,054
Of which the standardised approach	23,050	25,312	1,844
Of which IMA	15,119	13,318	1,210
Large exposures	-	267	
Operational risk	18,750	18,750	1,500
Of which advanced measurement approach	18,750	18,750	1,500
Floor adjustment	-	-	-
Total	**130,256**	**132,364**	**10,420**

5.1. Capital Buffers

Under CRD4 CGML is required to hold additional capital buffers.

The countercyclical capital buffer aims to ensure that capital requirements take into account the macro-financial environment. Its primary objective is to protect the banking sector from periods of excess aggregate credit growth. The designated authorities can set the countercyclical capital buffer rates between 0% and 2.5%.

CGML is required to calculate its institution-specific countercyclical buffer rate as a weighted average of the buffer rates that have been announced for each jurisdiction to which the firm has relevant credit exposures. Relevant credit exposures are as follows;

- credit risk

- specific risk
- incremental default and migration risk (IRC)
- securitisations

The institution-specific countercyclical buffer rate consists of the weighted average of the countercyclical buffer rates that apply in the jurisdictions where the relevant credit exposures of the institutions are located.

The following table sets out CGML's countercyclical buffer requirement for 31 December 2017 and 31 December 2016 in line with Article 440 of the CRR.

Table 7: Geographical distribution of countercyclical capital buffer

	General credit exposures		Trading book exposure		Securitisation exposure		Own funds requirements					
As at 31 December 2017	Exposure value for SA	Exposure value IRB	Sum of long and short position of trading book	Value of trading book exposure for internal models	Exposure value for SA	Exposure value for IRB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total	Own funds requirement weights	Countercyclical capital buffer rate
Breakdown by country	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	%	%
Czech Republic	43	-	8	-	-	-	2	1	-	3	0.05%	0.50%
Hong Kong	1,572	-	97	22	-	-	125	9	-	134	2.85%	1.25%
Iceland	0	-	-	-	-	-	0	-	-	0	0.00%	1.00%
Norway	109	-	16	3	-	-	6	1	-	8	0.17%	1.50%
Slovakia	0	-	-	-	-	-	0	-	-	0	0.00%	0.50%
Sweden	530	-	16	115	-	-	42	10	-	53	1.12%	2.00%
All other countries	38,956	-	15,264	4,192	-	-	2,959	1,557	-	4,516	95.80%	0.00%
Total	**41,211**	**-**	**15,401**	**4,331**	**-**	**-**	**3,135**	**1,579**	**-**	**4,714**	**100.00%**	**-**
Amount of institution-specific countercyclical capital buffer												
Total risk exposure amount												$130,256m
Institution specific countercyclical buffer rate												0.06%
Institution specific countercyclical buffer requirement												$80m

Table 7: Geographical distribution of countercyclical capital buffer continued

As at 31 December 2016	General credit exposures		Trading book exposure		Securitisation exposure		Own funds requirements					
	Exposure value for SA	Exposure value IRB	Sum of long and short position of trading book	Value of trading book exposure for internal models	Exposure value for SA	Exposure value for IRB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total	Own funds requirement weights	Countercyclical capital buffer rate
Breakdown by country	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	%	%
Hong Kong	1,038	-	103	-	0	0	83	8	0	91	2.74%	0.63%
Norway	127	-	24	7	0	0	6	3	0	9	0.26%	1.50%
Sweden	393	-	20	84	0	0	29	8	0	37	1.11%	1.50%
All Other countries	30,694	-	7,896	3,754	0	0	2,240	932	0	3,172	95.89%	0.00%
Total	**32,252**	**-**	**8,043**	**3,845**	**-**	**-**	**2,358**	**951**	**-**	**3,309**	**100.00%**	**-**
Amount of institution-specific countercyclical capital buffer												
Total risk exposure amount												$111,587m
Institution specific countercyclical buffer rate												0.04%
Institution specific countercyclical buffer requirement												$42m

CGML is also required to hold a capital conservation buffer. The buffer was introduced 1 January 2016 at 0.625% of RWAs. The buffer is scheduled to increase by 0.625% per year until it reaches 2.5% of RWAs on 1 January 2019. The buffer held by CGML as at 31 December 2017 was $1,628 million and 31 December 2016 was $697 million.

6. Leverage

Leverage risk is the risk that excessive growth in exposure or a decrease in capital will lead to an entity becoming more vulnerable to leverage or contingent leverage that may require unintended corrective measures, including distressed selling of assets which might result in losses or in valuation adjustments to its remaining assets.

In accordance with CRD IV, the leverage ratio for CGML is calculated by dividing fully loaded Tier 1 capital by the total of the entity's on and off-balance sheet exposures.

The leverage ratio is a monitoring tool which will allow competent authorities to assess the risk of excessive leverage in their respective institutions. It aims to constrain the build-up of excess leverage in the banking sector.

The requirement for the calculation and reporting of the leverage ratio has been implemented in the EU for reporting and disclosure purposes, but currently this is not set as a binding requirement. The leverage ratio during this transitional phase is set at a minimum level of 3%.

6.1. Management of Leverage Risk

CGML's approach to managing the risk of excessive leverage incorporates the following;

- Daily Capital Monitoring: this is conducted for CGML's capital ratios (Common Equity Tier 1 (CET1), Tier 1 and Total Capital Ratios). The excess capital over Pillar 1 and Pillar 2 requirements (including the Individual Capital Guidance and Capital Planning Buffer) and over the internal Capital Action Trigger, are also monitored daily. The latter is an internal trigger set to ensure that the entity holds a sufficient capital excess to permit timely management decisions in case of short term stresses.
- Legal Entity Capital Limits: For CGML there are both legal entity capital usage limits and business specific regulatory capital targets. These limits and targets are subject to detailed monitoring and review by both business and finance subject matter experts and reported to senior management on a weekly basis.
- Balance Sheet and Regulatory Capital Quarterly Reforecasts: For CGML there are quarterly reforecasts of the Pillar 1 requirements and balance sheet for all businesses. These forecasts are owned by the businesses and are vetted by the regional Markets head.
- All the above tools are monitored and controlled through the monthly UK ALCO process. The UK ALCO is the primary governance committee for the management of CGML's balance sheet. Amongst the responsibilities of the UK ALCO are the provision of balance sheet oversight of trends and business mix, ensuring prudent legal entity balance sheet management and overseeing the local regulatory requirements related to the balance sheet. The UK ALCO and CGML Board of Directors are also responsible for reviewing CGML's liquidity position on a daily basis.
- CGML's Risk Committee reviews and approves the Liquidity Risk Management Framework, the Funding and Liquidity Plan (FLP) on an annual basis.
- Stress Testing: On a weekly basis, the trading books of the entities are stress tested for market risk across a range of scenarios. A trigger has been set for the largest loss of the three 1-in-25 year scenarios that are run weekly and potential stress losses above this trigger will be escalated to the entity CEO, CRO and Treasurer.
- CGML Capital Committee: The monthly CGML Capital Committee is the primary governance committee for the management of CGML's capital. Responsibilities include approval of the ICAAP and the Pillar 3 document.

The following table sets out CGML's leverage ratio as at 31 December 2017 and 31 December 2016.

Table 8 - Summary reconciliation of accounting assets and leverage ratio exposures

This table summarises the total leverage exposure, comprising of the total assets in the statutory financial statement and other regulatory adjustments for leverage purposes.

		31/12/17	31/12/16
		$m	$m
1	Total assets as per published financial statements	377,942	345,608
4	Adjustments for derivative financial instruments	(22,705)	(44,051)
5	Adjustment for securities financing transactions (SFTs)	30,593	27,216
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	0	19
7	Other adjustments	(659)	(629)
8	**Leverage ratio total exposure measure**	**385,170**	**328,163**

The total assets as per the balance sheet for CGML are on a solo basis, the group does not publish financial statements at the consolidated level.

In accordance with Article 4(2) of the commission implementing regulation (EU) 2016/200, the implementing technical standards in regard to the disclosure of the leverage ratio, CGML is not required to complete and publish financial statements at the consolidated level.

Table 9: Leverage ratio common disclosure

This table shows the breakdown of the Leverage exposure disclosed in Table 8 - Summary reconciliation of accounting assets and leverage ratio exposures and the leverage ratio.

		31/12/17	31/12/16
		$m	$m
	On-balance sheet exposures (excluding derivatives and SFTs)		
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	93,078	70,302
2	(Asset amounts deducted in determining Tier 1 capital)	(659)	(614)
3	**Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)**	92,419	69,688
	Derivative exposures		
4	Replacement cost associated with *all* derivatives transactions (i.e. net of eligible cash variation margin)	22,539	22,178
5	Add-on amounts for PFE associated with *all* derivatives transactions (mark- to-market method)	102,257	97,768
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	-	-
8	(Exempted CCP leg of client-cleared trade exposures)	(8,859)	(6,210)
9	Adjusted effective notional amount of written credit derivatives	581,323	562,446
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(570,557)	(552,600)
11	**Total derivatives exposures**	126,704	123,583
12	**SFT exposures**		
	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	135,455	107,657
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	-	-
14	Counterparty credit risk exposure for SFT assets	30,593	27,216
16	**Total securities financing transaction exposures**	166,048	134,873
	Other off-balance sheet exposures		
17	Off-balance sheet exposures at gross notional amount	-	19
18	(Adjustments for conversion to credit equivalent amounts)	-	-
	Other off-balance sheet exposures	-	19
	Capital and total exposure measure		
20	**Tier 1 capital**	14,070	12,253
21	**Leverage ratio total exposure measure**	385,170	328,163
	Leverage ratio		
22	**Leverage ratio**	3.65%	3.73%
EU -23	**Choice on transitional arrangements and amount of derecognised fiduciary items**		
	Choice on transitional arrangements for the definition of the capital measure	Fully phased in	

CGML leverage ratio reduced from 3.73% in December 2016 to 3.65% in December 2017 largely due to increase in leverage exposure. There were increased exposures mainly in SFT and on-balance sheet exposures.

Table 10: Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)

		31/12/17	31/12/16
		$m	$m
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	93,078	70,302
EU-2	Trading book exposures	91,441	67,246
EU-3	Banking book exposures, of which:	1,637	3,055
EU-4	Covered bonds	-	-
EU-5	Exposures treated as sovereigns	325	379
EU-6	Exposures to regional governments, MDB, international organisations and PSE **not** treated as sovereigns	-	-
EU-7	Institutions	113	130
EU-8	Secured by mortgages of immovable properties	-	-
EU-10	Corporate	29	533
EU-11	Exposures in default	-	-
EU-12	Other exposures (e.g. equity, securitisations, and other non-credit obligation assets)	1,169	2,013

7. Credit Risk and General Information on CRM

7.1. Credit Quality of Assets

Under International Financial Reporting Standards (IFRS), the firm assesses whether there is objective evidence that a financial asset or a portfolio of financial assets is impaired on an ongoing basis (including at each balance sheet date). A financial asset or portfolio of financial assets is impaired and impairment losses are incurred if, and only if, there is objective evidence of impairment as a result of one or more loss events that occurred after the initial recognition of the asset and prior to the balance sheet date ("a loss event") and that loss event has had an impact on the estimated future cash flows of the financial asset or the portfolio that can be reliably estimated.

Objective evidence that a financial asset or a portfolio is impaired includes observable data that comes to the attention of the firm about the following loss events:

- Significant financial difficulty of the issuer or obligor;
- A breach of contract, such as a default or delinquency in interest or principal payments;
- The firm as lender, for economic or legal reasons relating to the borrower's financial difficulty, grants to the borrower a concession that the firm would not otherwise consider;
- It becomes probable that the borrower will enter bankruptcy or other financial reorganisation;
- The disappearance of an active market for that financial asset because of financial difficulties; and
- Observable data indicating that there is a measurable decrease in the estimated future cash flows from a portfolio of financial assets since the initial recognition of those assets, although the decrease cannot yet be identified with the individual financial assets in the portfolio, including:
    - adverse changes in the payment status of borrowers in the portfolio;
    - national or local economic conditions that correlate with defaults on the assets in the portfolio.

The firm first assesses whether objective evidence of impairment exists:

- individually, for financial assets that are individually significant; and
- individually or collectively, for financial assets that are not individually significant.

If the firm determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes the asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Assets that are individually assessed for impairment and for which an impairment loss is recognised are not included in a collective assessment of impairment.

Following impairment, interest income is recognised using the original effective interest rate which is used to discount the future cash flows for the purpose of measuring the impairment loss.

For the purposes of the collective evaluation of impairment, financial assets are grouped on the basis of similar credit risk characteristics by using a grading process that considers obligor type, industry, geographical location, collateral type, past due status and other relevant factors. These characteristics are relevant to the estimation of future cash flows for groups of such assets by being indicative of the likelihood of receiving all amounts due under a facility according to the contractual terms of the assets being evaluated.

Future cash flows in a group of financial assets that are collectively evaluated for impairment are estimated on the basis of the contractual cash flows of the assets in the group and historical loss experience for assets with credit risk characteristics similar to those of the group.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed by adjusting the allowance account. The amount of the reversal is recognised in the income statement.

In the case of equity instruments classified as available for sale, a significant or prolonged decline in the fair value of the security below its cost is also considered in determining whether impairment exists. Where such evidence exists, the cumulative net loss that has been previously recognised directly in equity is removed from equity and recognised in the income statement.

In the case of debt instruments classified as available for sale, impairment is assessed based on the same criteria as for assets held at amortised cost. However, impairment charges are recorded as the entire cumulative net loss that has previously been recognised directly in equity. Reversals of impairment of debt securities are recognised in the income statement. Reversals of impairment of equity shares are not recognised in the income statement. Increases in the fair value of equity shares after impairment are recognised directly in equity.

Wholesale Impairment

Rather than measuring delinquency for a wholesale customer or for a facility to that customer by the number of days past due, impaired wholesale credit exposures are classified as either Substandard or Doubtful:

- Substandard - a substandard asset is inadequately protected by the current sound worth and paying capacity of the obligor. Assets so classified must have a well-defined weakness, or weaknesses, that jeopardise the timely repayment of its obligations.
- Doubtful - an asset classified as doubtful has all the weaknesses inherent in one classified as substandard with the added characteristic that the weaknesses make collection or liquidation in full, on the basis of currently existing facts, conditions and values, highly questionable and improbable.

Retail Impairment

CGML has no retail exposure.

Conclusion

As CGML does not undertake any banking book activity, and its exposures are generated as a result of trading book activity, the following tables in this section have not been completed:

- Table 18: CR1-D: Ageing of past-due exposures;
- Table 19: CR1-E: Non-performing and forborne exposures;
- Table 20: CR2-A: Changes in the stock of general and specific credit risk adjustments; and
- Table 21: CR2-B: Changes in the stock of defaulted and impaired loans and debt securities.

The following tables in this section details CGML's credit risk profile focusing on on-balance sheet and off-balance sheet regulatory exposures.

The risk profile is further analysed into exposure classes, industry, regions, maturities and defaulted exposures.

Table 11: CRB-B - Total and average net amount of exposures

The table below provide a breakdown of credit risk exposures pre CCF and CRM by exposure class and average over four quarters.

	Net value of exposures		Average net exposures	
	31/12/17	31/12/16	31/12/17	31/12/16
	$m	$m	$m	$m
Central governments or central banks	204	129	133	179
Regional governments or local authorities	-	-	-	-
Public sector entities	0	-	20	-
Multilateral development banks	-	-	-	-
International organisations	-	-	-	-
Institutions	386	366	442	609
Corporates	791	1,082	1,103	948
Of which: SMEs	-	-	-	-
Exposures in default	-	-	-	-
Items associated with particularly high risk	-	-	-	-
Covered bonds	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	979	1,847	1,893	1,718
Collective investments undertakings	-	-	-	-
Equity exposures	34	31	33	27
Other exposures	156	136	145	160
Total Standardised approach	**2,551**	**3,591**	**3,768**	**3,641**

Credit risk exposure decreased by $1.04bn. Details of key movement are explained in further breakdown of exposure classes below.

Average net exposure values are calculated from four quarter ends of the year.

Table 12: CRB-C - Geographical breakdown of exposures

This table provide a breakdown of credit risk exposures pre CCF and CRM by geographical areas and exposure classes.

	United Kingdom	Rest of EU	United States of America	Canada	Taiwan	South Korea	Rest of APAC	Egypt	Russia	Rest of EMEA	LATAM	Total
As at 31 December 2017	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Central governments or central banks	204	-	-	-	-	-	-	-	-	-	-	204
Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	2	12	248	27	-	6	50	-	3	37	1	386
Corporates	749	-	6	-	-	-	6	-	-	1	30	792
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	266	204	239	-	76	65	59	36	21	12	1	979
Collective investments undertakings	-	-	-	-	-	-	-	-	-	-	-	-
Equity exposures	34	-	-	-	-	-	-	-	-	-	-	34
Other exposures	156	-	-	-	-	-	-	-	-	-	-	156
Total Standardised approach	**1,411**	**216**	**493**	**27**	**76**	**71**	**115**	**36**	**24**	**50**	**32**	**2,551**

Table 12: CRB-C - Geographical breakdown of exposures continued

	United Kingdom	Belgium	Rest of EU	United States of America	Canada	Taiwan	Rest of APAC	Egypt	Rest of EMEA	LATAM	Total
As at 31 December 2016	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Central governments or central banks	116	-	13	-	-	-	-	-	-	-	129
Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-	-	-	-	-
Institutions	6	0	6	224	20	-	27	-	83	0	366
Corporates	1,003	0	18	54	0	-	4	-	2	0	1,082
Exposures in default	-	-	-	-	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	8	548	120	1,045	-	53	43	-	26	3	1,847
Collective investments undertakings	-	-	-	-	-	-	-	-	-	-	-
Equity exposures	30	-	0	-	-	-	-	-	-	-	31
Other exposures	136	-	-	-	-	-	-	-	-	-	136
Total Standardised approach	**1,300**	**549**	**157**	**1,323**	**20**	**53**	**75**	**68**	**111**	**4**	**3,591**

Credit risk exposure decreased by $1.04bn mainly due to the following key geographical areas;

- USA decreased by $0.83bn due to claims on Citibank NA-New York head office with a short-term credit assessment;

- Rest of EU - decreased by $0.49bn due to a reduction in cash held at a central clearing house for trading activities; and

- United Kingdom increased by $0.11bn due to $0.1bn increase in deferred tax and $0.2b in increased trading activities. This is partially off-set by a reduction of $0.2bn cash held at the central clearing house.

Table 13: CRB-D - Concentration of exposures by industry

This table provide a breakdown of exposures pre CCF and CRM by industry or counterparty types and exposure classes.

	Electricity, gas, steam and air conditioning supply	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Other services	Total
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
Standardised approach								
Central governments or central banks	-	-	-	-	-	204	-	204
Regional governments or local authorities	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	1	1
Multilateral development banks	-	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	386	386
Corporates	-	-	30	-	-	-	761	791
Exposures in default	-	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	-	-	-	-	-	-	979	979
Collective investments undertakings	-	-	-	-	-	-	-	-
Equity exposures	-	-	-	18	-	-	16	34
Other exposures	-	-	-	-	-	-	156	156
Total	**-**	**-**	**30**	**18**	**-**	**204**	**2,299**	**2,551**
As at 31 December 2016	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
Standardised approach								
Central governments or central banks	-	-	-	-	-	116	13	129
Regional governments or local authorities	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	366	366
Corporates	14	-	29	-	-	-	1,039	1,082
Exposures in default	-	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	1	-	-	-	-	-	1,847	1,847
Collective investments undertakings	-	-	-	-	-	-	-	-
Equity exposures	-	-	-	17	-	-	14	31
Other exposures	-	-	-	-	-	-	136	136
Total	**15**	**-**	**29**	**17**	**-**	**116**	**3,415**	**3,591**

Credit risk exposure decreased by $1.04bn mainly driven by activities in other services attributable to cash and bank balances within the financial and insurance sector.

Table 14: CRB-E: Maturity of exposures

The table below provide a breakdown of net exposures pre CCF and CRM by residual maturity and exposure classes.

	Net exposure value					
	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
Standardised approach						
Central governments or central banks	-	-	204	-	-	204
Regional governments or local authorities	-	-	-	-	-	-
Public sector entities	0	-	-	-	-	0
Multilateral development banks	-	-	-	-	-	-
International organisations	-	-	-	-	-	-
Institutions	108	279	-	-	-	386
Corporates	29	761	0	-	-	791
Exposures in default	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	979	-	-	-	-	979
Collective investments undertakings	-	-	-	-	-	-
Equity exposures	-	34	-	-	-	34
Other exposures	-	108	41	-	8	156
Total standardised approach	**1,116**	**1,182**	**245**	**-**	**8**	**2,551**
As at 31 December 2016	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
Standardised approach						
Central governments or central banks	13	-	116	-	-	129
Regional governments or local authorities	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-
International organisations	-	-	-	-	-	-
Institutions	126	240	-	-	-	366
Corporates	235	819	-	-	9	1,063
Exposures in default	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	1,847	-	-	-	-	1,847
Collective investments undertakings	-	-	-	-	-	-
Equity exposures	-	31	-	-	-	31
Other exposures	-	94	42	-	-	136
Total standardised approach	**2,220**	**1,185**	**158**	**-**	**9**	**3,572**

Credit risk exposure decreased by $1.02bn. On-demand maturity bucket reduced by $1.10bn and slight increase in other maturity buckets.
Main driver within the on-demand maturity bucket is claims on institutions and corporates with a short term credit assessment with a reduction of $0.87bn.

Off balance sheet exposure of $20m is not included in 2016 total standardised approach of $3,572.

Table 15: CR1-A - Credit quality of exposures by exposure class and instrument

	Gross carrying values of Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
As at 31 December 2017	$m	$m	$m	$m	$m	$m	$m
Central governments or central banks	-	204	-	-	-	-	204
Regional governments or local authorities	-	-	-	-	-	-	-
Public sector entities	-	0	-	-	-	-	0
Multilateral development banks	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-
Institutions	-	386	-	-	-	-	386
Corporates	-	791	-	-	-	-	791
Of which: SMEs	-	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-	-
Items associated with	-	-	-	-	-	-	-
particularly high risk	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	-	979	-	-	-	-	979
Collective investments undertakings	-	-	-	-	-	-	-
Equity exposures	-	34	-	-	-	-	34
Other exposures	-	156	-	-	-	-	156
Total standardised approach	**-**	**2,551**	**-**	**-**	**-**	**-**	**2,551**
Of which: Loans	-	1,116	-	-	-	-	1,116
Of which: Debt securities	-	-	-	-	-	-	-
Of which: Off- balance-sheet exposures	-	-	-	-	-	-	-
As at 31 December 2016	$m	$m	$m	$m	$m	$m	$m
Central governments or central banks	-	129	-	-	-	-	129
Regional governments or local authorities	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-
Institutions	-	366	-	-	-	-	366
Corporates	-	1,082	-	-	-	-	1,082
Of which: SMEs	-	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-	-
Items associated with	-	-	-	-	-	-	-
particularly high risk	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	-	1,847	-	-	-	-	1,847
Collective investments undertakings	-	-	-	-	-	-	-
Equity exposures	-	31	-	-	-	-	31
Other exposures	-	136	-	-	-	-	136
Total standardised approach	**-**	**3,591**	**-**	**-**	**-**	**-**	**3,591**
Of which: Loans	-	2,220	-	-	-	-	2,220
Of which: Debt securities	-	-	-	-	-	-	-
Of which: Off- balance-sheet exposures	-	-	-	-	-	-	-

CGML has no defaulted exposures at the end of December 2017.

Table 16: CR1-B: Credit quality of exposures by industry or counterparty types

The table provide a picture of the credit quality of CGML's on-balance-sheet and off-balance sheet exposures by industry or counterparty types.

		Gross carrying values of						
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges	Net values
As at 31 December 2017		$m	$m	$m	$m	$m	$m	$m
4	Electricity, gas, steam and air conditioning supply	-	-	-	-	-	-	-
10	Information and communication	-	0	-	-	-	-	0
11	Real estate activities	-	30	-	-	-	-	30
12	Professional, scientific and technical activities	-	18	-	-	-	-	18
13	Administrative and support service activities	-	0	-	-	-	-	0
14	Public administration and defence, compulsory social security	-	204	-	-	-	-	204
18	Other services	-	2,298	-	-	-	-	2,298
19	**Total**	**-**	**2,551**	**-**	**-**	**-**	**-**	**2,551**
As at 31 December 2016		$m	$m	$m	$m	$m	$m	$m
4	Electricity, gas, steam and air conditioning supply	-	15	-	-	-	-	15
10	Information and communication	-	0	-	-	-	-	0
11	Real estate activities	-	29	-	-	-	-	29
12	Professional, scientific and technical activities	-	17	-	-	-	-	17
13	Administrative and support service activities	-	0	-	-	-	-	0
14	Public administration and defence, compulsory social security	-	116	-	-	-	-	116
18	Other services	-	3,415	-	-	-	-	3,415
19	**Total**	**-**	**3,591**	**-**	**-**	**-**	**-**	**3,591**

Key movements in credit risk exposure by industry are detailed in Table 13.

Table 17: CR1-C - Credit quality of exposures by geography

This table provide a picture of the credit quality of CGML's on-balance-sheet and off-balance-sheet exposures by geography.

	Gross carrying values of						
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges	Net values
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
United kingdom	-	1,411	-	-	-	-	1,411
Rest of EU	-	216	-	-	-	-	216
United States of America	-	493	-	-	-	-	493
Canada	-	27	-	-	-	-	27
Taiwan	-	76	-	-	-	-	76
South Korea	-	71	-	-	-	-	71
Rest of APAC	-	115	-	-	-	-	115
Egypt	-	36	-	-	-	-	36
Russia	-	24	-	-	-	-	24
Rest of EMEA	-	50	-	-	-	-	50
LATAM	-	32	-	-	-	-	32
Total	**-**	**2,551**	**-**	**-**	**-**	**-**	**2,551**
As at 31 December 2016	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
United kingdom	-	1,300	-	-	-	-	1,300
Belgium	-	549	-	-	-	-	549
Rest of EU	-	157	-	-	-	-	157
United States of America	-	1,323	-	-	-	-	1,323
Canada	-	20	-	-	-	-	20
Taiwan	-	53	-	-	-	-	53
Rest of APAC	-	75	-	-	-	-	75
Egypt	-	68	-	-	-	-	68
Rest of EMEA	-	43	-	-	-	-	43
LATAM	-	4	-	-	-	-	4
Total	**-**	**3,591**	**-**	**-**	**-**	**-**	**3,591**

Key movements in credit risk exposure by geography are detailed in Table 12.

Table 18: CR1-D: Ageing of past-due exposures

There are no values to report for the ageing of past-due exposures, as CGML does not undertake any banking book activity, and its exposures are generated as a result of trading book activity.

	Gross carrying values					
	≤ 30 days	> 30 days ≤ 60 days	> 60 days ≤ 90 days	> 90 days ≤ 180 days	> 180 days ≤ 1 year	> 1 year
As at 31 December 2017	$m	$m	$m	$m	$m	$m
Loans	-	-	-	-	-	-
Debt securities	-	-	-	-	-	-
Total exposures	**-**	**-**	**-**	**-**	**-**	**-**
As at 31 December 2016	$m	$m	$m	$m	$m	$m
Loans	-	-	-	-	-	-
Debt securities	-	-	-	-	-	-
Total exposures	-	-	-	-	-	-

Table 19: CR1-E: Non-performing and forborne exposures

There are no values to report for non-performing and forborne exposures, as CGML does not undertake any banking book activity, and its exposures are generated as a result of trading book activity.

	Gross carrying amount of performing and non-performing exposures							Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
		Of which performing but past due > 30 days and <= 90 days	Of which performing forborne	Of which non-performing				On performing exposures		On non-performing exposures		On non-performing exposures	Of which forborne exposures
					Of which defaulted	Of which impaired	Of which forborne		Of which forborne		Of which forborne		
As at 31 December 2017	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Debt securities	-	-	-	-	-	-	-	-	-	-	-	-	-
Loans and advances	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-balance-sheet exposures	-	-	-	-	-	-	-	-	-	-	-	-	-
As at 31 December 2017	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Debt securities	-	-	-	-	-	-	-	-	-	-	-	-	-
Loans and advances	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-balance-sheet exposures	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 20: CR2-A: Changes in the stock of general and specific credit risk adjustments

There are no values to report for the changes in the stock of general and specific credit risk adjustments held against loans and debt securities that are defaulted or impaired, as CGML does not undertake any banking book activity, and its exposures are generated as a result of trading book activity.

	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
As at 31 December 2017	**£m**	**$m**
Opening balance	-	-
Increases due to amounts set aside for estimated loan losses during the period	-	-
Decreases due to amounts reversed for estimated loan losses during the period	-	-
Decreases due to amounts taken against accumulated credit risk adjustments	-	-
Transfers between credit risk adjustments	-	-
Impact of exchange rate differences	-	-
Business combinations, including acquisitions and disposals of subsidiaries	-	-
Other adjustments	-	-
Closing balance	**-**	**-**
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	-	-
Specific credit risk adjustments directly recorded to the statement of profit or loss	-	-

Table 21: CR2-B: Changes in the stock of defaulted and impaired loans and debt securities

There are no values to report for the changes in the institution’s stock of defaulted loans and debt securities, as CGML does not undertake any banking book activity, and its exposures are generated as a result of trading book activity.

	Gross carrying value defaulted exposures
As at 31 December 2017	**$m**
Opening balance	-
Loans and debt securities that have defaulted or impaired since the last reporting period	-
Returned to non-defaulted status	-
Amounts written off	-
Other changes	-
Closing balance	-

7.2. Credit Risk Mitigation

As part of its risk management activities, the firm uses various risk mitigants to hedge portions of the credit risk in its portfolio, in addition to outright asset sales. Credit risk mitigation, including netting, collateral and other techniques, is important to Citi in the effective management of its credit risk exposures.

The utilisation of collateral is of critical importance in the mitigation of risk. In-house legal counsel, in consultation with approved external legal counsel, will determine whether collateral documentation is enforceable and gives the firm the right to liquidate or take possession of collateral in a timely manner in the event of the default, insolvency, bankruptcy or other defined credit event of the obligor.

Collateral Types

The majority of the collateral taken by CGML against OTC derivative exposures is in the form of cash. With the Margin Rules for Non-Centrally Cleared Derivatives coming into place in September 2017, there was an increase in the amount of securities taken as collateral.

In respect of SFTs, the majority of the collateral is in the form of:

- cash;
- long-term and short term debt securities; or
- public equity securities.

Cash collateral and security collateral in the form of G10 (Group of Ten) government debt securities are generally posted to secure the net open exposure of OTC derivative transactions, at a counterparty level, whereby the receiving party is free to co-mingle or re-hypothecate such collateral in the ordinary course of business.

Non-standard collateral, such as corporate bonds, municipal bonds, U.S. agency securities and mortgage-backed securities, may also be pledged as collateral for OTC derivative transactions. Collateral posted to open and maintain a master netting agreement with a counterparty in the form of cash and securities may from time to time be segregated in an account at a third-party custodian pursuant to a tri-party account control agreement.

Occasionally, with appropriate agreement, other forms of collateral may be accepted.

Policies for Securing, Valuing and Managing Collateral

Citi's policies and procedures cover management and governance of financial assets (including securing and valuing collateral) utilised for the purpose of mitigating the credit risk of OTC derivatives, repo-style transactions and eligible margin loans. Specifically, businesses are required to establish standard eligibility criteria for collateral usage and review processes for approving non-standard collateral. Industry standard legal agreements combined with internal reviews for legal enforceability are used to achieve a perfected security interest in the collateral.

Additionally, Risk Management establishes guidelines on appropriate collateral haircuts related to repo-style transactions and eligible margin loans. A haircut is the percentage of reduction in current market value applicable to each type of collateral and is largely based on liquidity and price volatility of the underlying security. Potential correlations between the exposure and the underlying collateral are reflected through the setting of appropriately greater haircuts.

Derivative Master Netting Agreements

Credit risk from derivatives is mitigated where possible through netting agreements whereby derivative assets and liabilities with the same counterparty can be offset. Citi policy requires all netting arrangements to be legally documented. ISDA (International Swaps and Derivative Association) master agreements are Citi's preferred manner for documenting OTC derivatives.

In-house legal counsel will also approve relevant jurisdictions and counterparty types for netting purposes. Off-balance sheet netting and netting of collateral against the exposure is permitted if legal counsel determine that the firm has these rights.

Netting is generally permitted for the following types of transaction:

- Securities Financing Transactions (SFTs);
- Exchange Traded Derivatives (ETDs); and
- Over The Counter (OTC) derivative transactions; and

The agreements provide the contractual framework within which dealing activities across a full range of OTC products are conducted and contractually bind both parties to apply close-out netting across all outstanding transactions covered by an agreement if either party defaults or other predetermined events occur.

Citi considers the level of legal certainty regarding enforceability of its offsetting rights under master netting agreements and credit support annexes to be an important factor in its risk management process. For example, Citi generally transacts much lower volumes of derivatives under master netting agreements where Citi does not have the requisite level of legal certainty regarding enforceability. For further information on Citi's policies regarding master netting agreements, see the "Derivatives Activities" section of Citi's 31 December 2017 Form 10-K, available on the Citigroup website.

Valuation of Collateral

Collateral valuations must be completed daily for SFTs, OTC derivatives and margin lending by the relevant operations units and collateral/margin departments. Collateral haircuts are applied in a number of circumstances, such as where there is a material positive correlation between the credit quality of the counterparty and the value of the collateral, or where there are currency or maturity mismatches. The firm has sound and well managed systems and procedures for requesting and promptly receiving additional collateral for transactions whose terms require maintenance of collateral values at specified thresholds as documented in the respective legal agreements.

Margining Procedures

Daily margin procedures are established for managing margin calls which is considered best practice in order to maintain an appropriate level of collateral coverage reflecting market value fluctuations. Trades are reconciled on a regular basis that is consistent with regulatory and industry best practice guidelines and margin dispute processes are in place. Procedures are established surrounding collateral substitution and collateral re-use/re-hypothecation. Limits and concentration monitoring are utilised to control Citi's collateral concentrations to different types of asset classes.

Additionally, for eligible margin loans, procedures are established to ensure an appropriate level of allowance for credit losses.

Reporting

The firm has procedures in place to ensure that appropriate information is available to support the collateral process and that timely and accurate margin calls feed correctly into the margin applications from upstream systems. Key to the process is a daily credit exposure report as well as reports identifying counterparties that have not met their requirement for additional collateral to satisfy specified initial margin amounts and variation margin thresholds. In addition, there is firm wide risk reporting of counterparty exposures at an individual and an aggregate level.

Collateral Concentrations

Cash and sovereign government bonds are the predominant form of collateral accepted in respect of margined OTC derivative transactions and SFTs at 31 December 2017.

Other Forms of Credit Risk Mitigation

CGML does not generally use credit derivatives to mitigate its counterparty risk exposure, but Citi does use credit derivatives for this purpose when exposure is viewed at a global level, and such hedging is carried out by certain US affiliate companies.

Table 22: CR3 - CRM techniques – Overview

This table shows the extent of the use of CRM techniques used in total credit risk exposures.

	Exposures unsecured – Carrying amount	Exposures to be secured – Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**
Total loans	1,116	-	-	-	-
Total debt securities	34	-	-	-	-
Total exposures	**1,150**	**-**	**-**	**-**	**-**
Of which defaulted	-	-	-	-	-

8. Credit Risk and CRM in the Standard Approach

8.1. Use of external credit ratings under the standardised approach for credit risk

Under the Standardised approach, ratings assigned by External Credit Assessment Institutions (ECAIs) are used in the calculation of RWAs. Credit assessments applied to central governments and central banks, institutions, corporate and equity exposure classes in the trading book and banking book alike, as determined by the PRA in accordance with the requirements of CRD IV.

CGML uses ratings assigned by Standard and Poor's, Moody's and Fitch for credit risk calculations.

Table 23: Credit quality assessment scale

Credit Quality Step	Standard & Poor's	Moody's	Fitch
Credit Quality Step 1	AAA to AA-	Aaa to Aa3	AAA to AA-
Credit Quality Step 2	A+ to A-	A1 to A3	A+ to A-
Credit Quality Step 3	BBB+ to BBB-	Baa1 to Baa3	BBB+ to BBB-
Credit Quality Step 4	BB+ to BB-	Ba1 to Ba3	BB+ to BB-
Credit Quality Step 5	B+ to B-	B1 to B3	B+ to B-
Credit Quality Step 6	CCC+ and below	Caa1 and below	CCC+ and below

Risk weightings are assigned to each exposure depending on its credit quality step and other factors, including exposure class and maturity. Exposures for which no rating is available are treated in a similar way to those under Credit Quality Step 3.
The table below sets out a simplified summary of how credit quality is linked to risk weighting.

Table 24: Simplified summary of risk weightings by Credit Quality Step

			Institution (includes banks)		
Credit Quality Step	Corporates	Governments and Central Banks	Sovereign method	>3 Months Maturity	Maturity 3 months or less
Step 1	20%	0%	20%	20%	20%
Step 2	50%	20%	50%	50%	20%
Step 3	100%	50%	100%	50%	20%
Step 4	100%	100%	100%	100%	50%
Step 5	150%	100%	100%	100%	50%
Step 6	150%	150%	150%	150%	150%

Table 25: CR4 - Standardised approach – Credit risk exposure and CRM effects

This table shows the effect of CCF and CRM techniques applied on total on-balance sheet and off-balance sheet credit risk exposures, across exposure classes.

	Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RWA density	
Standardised approach	On balance-sheet amount	Off balance-sheet amount	On balance-sheet amount	Off balance-sheet amount	RWAs	RWA density
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**	**%**
Central governments or central banks	204	-	204	-	511	250.0%
Regional government or local authorities	-	-	-	-	-	0.0%
Public sector entities	-	-	-	-	-	0.0%
Multilateral development banks	-	-	-	-	-	0.0%
International organisations	-	-	-	-	-	0.0%
Institutions	386	-	386	-	210	54.3%
Corporates	791	-	791	-	791	100.0%
Exposures in default	-	-	-	-	-	0.0%
Higher risk categories" should read	-	-	-	-	-	0.0%
Covered bonds	-	-	-	-	-	0.0%
Institutions and corporates with a short-term credit assessment	979	-	979	-	445	45.4%
Collective investment undertakings	-	-	-	-	-	0.0%
Equity	34	-	34	-	34	100.0%
Other items	156	-	156	-	167	107.0%
Total	**2,551**	**-**	**2,551**	**-**	**2,157**	**84.6%**
As at 31 December 2016	$m	$m	$m	$m	$m	$m
Central governments or central banks	129	-	129	-	290	224.9%
Regional government or local authorities	-	-	-	-	-	0.0%
Public sector entities	-	-	-	-	-	0.0%
Multilateral development banks	-	-	-	-	-	0.0%
International organisations	-	-	-	-	-	0.0%
Institutions	366	-	366	-	211	57.6%
Corporates	1,063	19	1,063	19	1,082	100.0%
Exposures in default	-	-	-	-	-	0.0%
Higher risk categories" should read	-	-	-	-	-	0.0%
Covered bonds	-	-	-	-	-	0.0%
Institutions and corporates with a short-term credit assessment	1,846	1	1,846	1	760	41.1%
Collective investment undertakings	-	-	-	-	-	0.0%
Equity	31	-	31	-	31	100.0%
Other items	136	-	136	-	145	106.9%
Total	**3,591**	**20**	**3,591**	**20**	**2,519**	**70.1%**

RWA density is expressed as total risk-weighted exposures divided by exposures post CCF and post CRM.

The decrease in off-balance sheet exposures in 2017 was due to expired financial guarantees.

Table 26: CR5 - Standardised approach - Risk Weighted

This table provides the breakdown of exposures under the standardised approach by asset class and risk weight.

	0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	Of which unrated
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
Central governments or central banks	-	-	-	-	-	-	-	-	-	204	-	-	-	-	204	204
Regional government or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	-	-	54		266	-	66	-	-	-	-	-	-	386	117
Corporates	-	-	-	-	-	-	-	791	-	-	-	-	-	-	791	791
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Exposures associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions and corporates with a short-term credit assessment	-	-	-	186	-	772	-	22	-	-	-	-	-	-	979	-
Collective investment undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity	-	-	-	-	-	-	-	34	-	-	-	-	-	-	34	34
Other items	-	-	-	-	-	-	-	149	-	7	-	-	-	-	156	156
Total	**0**	**-**	**-**	**240**	**-**	**1,038**	**-**	**1,061**	**0**	**212**	**-**	**-**	**-**	**-**	**2,551**	**1,302**

Table 26: CR5 - Standardised approach - Risk Weighted continued

	0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	Of which unrated
As at 31 December 2016	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
Central governments or central banks	13	-	-	-	-	-	-	-	-	116	-	-	-	-	129	13
Regional government or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	-	-	54		224	-	88	-	-	-	-	-	-	366	142
Corporates	-	-	-	-	-	-	-	1,082	-	-	-	-	-	-	1,082	1,037
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Higher-risk categories	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions and corporates with a short-term credit assessment	-	-	-	589	-	1,233	-	26	-	-	-	-	-	-	1,847	-
Collective investment undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity	-	-	-	-	-	-	-	31	-	-	-	-	-	-	31	29
Other items	-	-	-	-	-	-	-	130	-	6	-	-	-	-	136	136
Total	**13**	**-**	**-**	**643**	**-**	**1,457**	**-**	**1,356**	**-**	**122**	**-**	**-**	**-**	**-**	**3,591**	**1,356**

Credit risk exposure decreased by $1.04bn due to a reduction in on-demand exposures of $0.87bn in short term claims on Citibank NA-New York head office and $0.21bn in corporate activities.

9. Counterparty Credit Risk

For UK regulatory reporting purposes, CGML uses the standardised approach to determining counterparty credit risk capital requirements, based on External Credit Assessment Institution (ECAI) ratings for calculating Risk Weighted Assets (RWAs). The measures of Exposure at Default (EAD) used to determine these requirements are described below.

For OTC derivatives, CGML uses two approaches: IMM and CEM (as mentioned in Section 2.2). For IMM, the firm uses a constant covariance Monte Carlo simulation of potential future exposure to determine an expected positive exposure (EPE) measure as an input to Citi's EAD calculation. The model is calibrated with historical volatilities subject to a set of independent internal validation and statistical back-testing standards. The model utilises a standard supervisory alpha multiplication factor of 1.4. For those positions which fall outside of the scope of the firm's IMM model permission, CGML uses the CEM approach. This method assigns to each transaction a regulatory stipulated exposure based on the mark-to-market value and a measure of potential future exposure which is a percentage of notional driven by residual maturity and the type of contract, i.e. interest rate, equities etc.

Netting agreements and margin collateral may be recognised as credit risk mitigants provided they meet certain eligibility criteria as described below.

For SFTs, CGML applies a supervisory volatility adjustment under the financial collateral comprehensive method for calculating its EAD. The calculation equals exposure less collateral after applying regulatory haircuts for security volatility adjustments and any applicable currency mis-matches. The EAD is then used to calculate RWAs using the standardised approach.

Table 27: CCR1: Analysis of CCR exposure by approach

This table provide a comprehensive view of the methods used by CGML to calculate Counterparty Credit Risk (CCR) regulatory requirements and the main parameters used within each method. This excludes CVA charges or exposures cleared through a CCP.

		Notional	Replacement cost/current market value	Potential future credit exposure	EEPE	Multiplier	EAD post CRM	RWAs
As at 31 December 2017		$m	$m	$m	$m	$m	$m	$m
1	Mark to market		20,180	86,296			27,413	19,115
4	IMM (for derivatives)				18,786	1.4	13,418	8,798
5	Of which securities financing transactions				-	-	-	-
6	Of which derivative and long settlement transactions				18,786	1.4	13,418	8,798
7	Of which from contractual cross- product netting				-	-	-	-
8	Financial collateral simple method (for SFTs)						-	-
9	Financial collateral comprehensive method (for SFTs)						48,052	34,941
10	VaR for SFTs						-	-
11	**Total**							**62,854**

Table 27: CCR1: Analysis of CCR exposure by approach continued

		Notional	Replacement cost/current market value	Potential Future credit exposure	EEPE	Multiplier	EAD post CRM	RWAs
As at 31 December 2016		$m	$m	$m	$m	$m	$m	$m
1	Mark to market		20,698	84,175			22,047	15,103
4	IMM (for derivatives)				19,585	1.4	13,989	8,823
6	Of which derivatives and long settlement transactions				19,585	1.4	13,989	8,823
9	Financial collateral comprehensive method (for SFTs)						36,011	25,577
11	**Total**							**49,502**

Counterparty credit risk weighted asset increased by $13.3bn mainly due to the following;

- Mark to market EAD and RWA increased by $5bn and $4bn and SFT EAD and RWA increased by $12bn and $9.3bn respectively due to increased trading activities.
- IMM for derivatives remain flat for the two periods.

Table 28: CCR2 - Credit valuation adjustment (CVA) capital charge

This table provides the regulatory calculations for CVA under the standardised and advanced method approaches.

		Exposure value	RWA
As at 31 December 2017		$m	$m
1	Total portfolios subject to the advanced method	10,993	1,709
2	(i) VaR component (including the 3× multiplier)		636
3	(ii) SVaR component (including the 3× multiplier)		1,073
4	All portfolios subject to the standardised method	17,604	5,741
5	**Total subject to the CVA capital charge**	**28,597**	**7,450**
As at 31 December 2016			
1	Total portfolios subject to the advanced method	9,464	1,740
2	(i) VaR component (including the 3× multiplier)		632
3	(ii) SVaR component (including the 3× multiplier)		1,108
4	All portfolios subject to the standardised method	15,704	5,132
5	**Total subject to the CVA capital charge**	**25,167**	**6,872**

CVA RWA increased by a slight $0.6bn mainly driven by the standardised method of CVA calculation, reflecting the increased trading activity in mark to market derivatives in Table 24.

Table 29: CCR8 - Exposures to CCPs

This table provide a comprehensive picture of the institution's exposures to CCPs. In particular, the template includes all types of exposures (due to operations, margins, and contributions to default funds) and related capital requirements.

	EAD post CRM	RWAs
As at 31 December 2017	**$m**	**$m**
Exposures to QCCPs (total)		769
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	**17,453**	**428**
(i) OTC derivatives	3,151	63
(ii) Exchange-traded derivatives	7,451	222
(iii) SFTs	4,681	99
(iv) Netting sets where cross-product netting has been approved	-	-
Segregated initial margin	-	
Non-segregated initial margin	2,171	43
Prefunded default fund contributions	652	341
Alternative calculation of own funds requirements for exposures		-
Exposures to non-QCCPs (total)		**-**
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	-	-
(i) OTC derivatives	-	-
(ii) Exchange-traded derivatives	-	-
(iii) SFTs	-	-
(iv) Netting sets where cross-product netting has been approved	-	-
Segregated initial margin	-	
Non-segregated initial margin	-	-
Prefunded default fund contributions	-	-
Unfunded default fund contributions	-	-

In line with the EBA 'extension of the transitional period related to exposures to CCPs (No 648/2012)' an Implementing Regulation was published in December 2017 allowing firms to treat exposures to yet-to-be-recognised CCPs as QCCP exposures for an additional six months until June 15, 2018.

Table 30: CCR3: Standardised approach – CCR exposures by regulatory portfolio and risk

This table provides a breakdown of Counterparty Credit Risk exposures and risk-weighted by portfolio (type of counterparties) and by risk weight (riskiness attributed according to the standardised approach).

		Risk weight									
	Exposure classes	0%	2%	4%	20%	50%	100%	150%	Others	Total	Of which unrated
As at 31 December 2017		**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
1	Central governments or central banks	3,611	-	-	973	9	10,663	-	-	15,256	10,742
2	Regional government or local authorities	56	-	-	747	-	22	-	-	825	-
3	Public sector entities	3,599	-	-	293	-	342	-	-	4,234	1,727
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	-
5	International organisations	-	-	-	-	-	-	-	-	-	-
6	Institutions	-	13,797	3,651	4,753	23,896	740	27	-	46,863	14,994
7	Corporates	-	-	-	710	886	33,324	9	-	34,929	31,803
9	Institutions and corporates with a short-term credit assessment	-	-	-	68	2,385	92	1,673	-	4,218	35
10	Other items	-	-	-	-	-	-	12	-	12	-
	Exposures in default							12		12	-
	Total	**7,267**	**13,797**	**3,651**	**7,543**	**27,176**	**45,181**	**1,722**	**-**	**106,337**	**59,301**
As at 31 December 2016		**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
1	Central governments or central banks	6,021	-	-	12	7	9,060	-	-	15,100	13,515
2	Regional government or local authorities	26	-	-	657	50	6	-	-	739	566
3	Public sector entities	-	-	-	106	-	90	-	-	196	91
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	0
5	International organisations	-	-	-	-	-	-	-	-	-	-
6	Institutions	-	13,304	2,200	3,888	22,546	606	124	-	42,667	17,763
7	Corporates	-	-	-	507	837	25,212	36	-	26,592	22,569
9	Institutions and corporates with a short-term credit assessment	-	-	-	98	1,907	75	285	-	2,364	-
10	Other items	-	-	-	-	-	-	-	-	-	-
	Claims in the form of CIU	-	-	-	-	-	200	-	-	200	200
	Total	**6,048**	**13,304**	**2,200**	**5,266**	**25,347**	**35,249**	**445**	**-**	**87,858**	**54,705**

Counterparty credit risk exposure at default increased by $18.5bn, primarily driven by

- $4bn increase in public sector entities due to increased SFT transactions of $3.5bn and due to increased derivatives transactions of $0.5bn;
- $4.2bn increase in Institutions, due to increased derivatives transactions; and
- $8.4bn increase in corporate activities due to increased derivative transactions of $2.9bn and $5.5bn in SFT transactions.

Table 31: CCR7- RWA flow statements of CCR exposures under the IMM

This table presents a flow statement explaining changes in the CCR RWAs determined under the IMM for Counterparty Credit Risk (derivatives and SFTs) in accordance with Part Three, Title II, Chapter 6 of the CRR.

		RWA amounts	Capital requirements
		$m	$m
1	**RWAs as at the 30 September 2017**	**9,539**	**763**
2	Asset size	(716)	(57)
3	Credit quality of counterparties	-	-
4	Model updates (IMM only)	-	-
5	Methodology and policy (IMM only)	-	-
6	Acquisitions and disposals	-	-
7	Foreign exchange movements	-	-
8	Other	-	-
9	**RWAs as at the 31 December 2017**	**8,823**	**706**

CGML IMM RWA decreased by $0.7bn primarily driven by reduction in derivative exposures.

Table 32: CCR5-A - Impact of netting and collateral held on exposure values

The table provides an overview of the impact of netting and collateral held on exposures for SFT and derivatives, including exposures arising from transactions cleared through a CCP.

		Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
As at 31 December 2017		$m	$m	$m	$m	$m
1	Derivatives	347,831	267,610	80,221	26,618	53,603
1a	Derivatives	-	-	-	2,910	-
2	SFTs	398,193	- 21,700	376,493	323,759	52,734
2a	SFTs	-	-	-	74,082	-
4	**Total**	**746,024**	**245,910**	**456,714**	**427,369**	**106,337**

Rows 1a and 2a represents collateral held but not eligible for CRM or that would have no impact on the netted current credit exposure in the application of Chapter 4 and Chapter 6 of Part Two, Title III of the CRR

Table 33: CCR5-B - Composition of collateral for exposures to CCR

This table shows the breakdown of all types of posted or received by CGML to support or reduce Counterparty Credit Risk exposures related to derivative transactions or to SFTs, including transactions cleared through a CCP.

	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral			
	Segregated	Unsegregated	Segregated	Unsegregated	Fair value of received collateral	Fair value of posted collateral
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**	**$m**	**$m**
Cash	-	15,198	-	13,690	81,288	72,145
Debt	12	14,270	582	11,053	232,263	222,866
Equity	-	60	-	-	70,824	61,979
Other	-	-	-	-	13,466	17,464
Total	12	29,528	582	24,743	397,841	374,453

Table 34: CCR6: Credit derivatives exposures

The table below illustrate the extent of CGML's exposures to credit derivative transactions broken down between derivatives bought or sold.

	Credit derivative hedges		Other credit derivatives	
	Protection bought	Protection sold	Protection bought	Protection sold
As at 31 December 2017	**$m**	**$m**	**$m**	**$m**
Notionals				
Single-name credit default swaps	725	434	270,290	269,548
Index credit default swaps	770	716	282,607	281,589
Total return swaps			258	109
Credit options			26,948	26,948
Other credit derivatives			3,407	3,129
Total notionals	**1,496**	**1,150**	**583,511**	**581,323**
Fair values				
Positive fair value (asset)	**0**	**29**	**1,050**	**15,562**
Negative fair value (liability)	**(39)**	**0**	**(15,646)**	**(1,002)**
As at 30 June 2017	**$m**	**$m**	**$m**	**$m**
Notionals				
Single-name credit default swaps	576	427	281,350	279,425
Index credit default swaps	680	612	338,665	337,305
Total return swaps	-	-	82	82
Credit options	-	-	28,228	28,228
Other credit derivatives	-	-	4,171	3,969
Total notionals	**1,257**	**1,039**	**652,496**	**649,009**
Fair values				
Positive fair value (asset)	**0**	**19**	**2,365**	**15,894**
Negative fair value (liability)	**(26)**	**0**	**(16,058)**	**(2,316)**

Notional value of other credit derivatives decreased $69bn to $584bn for protection bought and $68bn for protection sold primarily driven by maturity of trades.

10. Market Risk

IMA Approach

CGML uses a Value at Risk (VaR) model to calculate market risk capital requirements for the majority of its trading portfolio under an IMA permission granted by the PRA. The permission covers general market risk and issuer specific risk for a number of Fixed Income, Equities and Commodities businesses. In addition to VaR based capital requirements, CGML is required to set aside capital in respect of Stressed VaR (SVaR) and the Incremental Risk Charge (IRC).

Non-proprietary details of the scope of CGML's IMA permission are available in the Financial Services Register on the FCA website.

<u>10.1 VaR Model</u>

The VaR model is designed to capture potential market losses at a 99% confidence level over a one day holding period. The capital requirement is based on the VaR with a ten day holding period. CGML uses a one day VaR for internal management purposes. The key components of the VaR model are the variance/covariance matrix of market variables and the sensitivity of Citi's trading portfolio to those variables. The variance/covariance matrix is calibrated using three years of market data, with some volatility adjusted up to capture fat tail effects at a 99% confidence level over a one day period, and others adjusted up to capture short term spikes in volatility. Market variations simulated from the matrix by a Monte Carlo methodology are applied to the set of factor sensitivities to generate a forecast distribution of one day profit and loss, from which the VaR can be computed. The factor sensitivities are designed to capture all material market risks on each trading asset, both linear and non-linear in nature. Risk exposure feeds, comprising factor sensitivities, are fed from each trading unit at the end of the day and stored in the system.

The risk factor covariance matrix used in VaR calculation is updated on monthly basis. Additionally, to reflect the current market condition, volatility of major market factors is updated on a weekly basis through scaling factors. The covariance matrix for SVaR is reviewed on a quarterly basis to ascertain whether the underlying stress period warrants a revision.

Revaluation grids are used for nonlinear positions. Ten day VaR/SVaR numbers are calculated directly from ten day volatility estimates. Production and reporting takes place on a daily basis and for any requested sub-portfolio or market factor.

The covariance matrix used for VaR calculation is calibrated using risk factor time series data from three year of recent history, except for commodities, where 18 months of historical data is used. The volatility model is a Hybrid EWMA (H-EWMA) approach using the maximum of the three year fat tail scaled (FTS) volatility and the exponential weighted moving average (EWMA) volatility estimation over an effective window of one month. In this way, both long and short (recent) historical windows are considered in this combined approach in order to achieve prudent volatility estimation.

The accuracy of the VaR model is assessed through daily back-testing performed by VaR Operations with oversight from Market Risk Management. The backtesting results for CGML's in-scope businesses, both in aggregate and at individual business level, are reported quarterly to the PRA.

<u>10.2 Stressed VaR</u>

Stressed VaR (SVaR) estimates the potential decline in the value of a position or a portfolio under stressed market conditions. The firm's SVaR methodology incorporates the factor sensitivities of the trading portfolio with the volatilities and correlations of those factors under stressed conditions and is expressed as the risk to the firm over a one-day holding period, at a 99% confidence level.

Citi's Monte Carlo VaR/SVaR model incorporates a full covariance matrix. The volatilities and correlations are built from thousands of market factors with actual time series from the last three years for VaR and a one-year stress period for SVaR. Proxy rules exist for market factors that do not have a sufficiently long time series or where the relevant data are inappropriate for matrix construction (e.g. due to gaps, unreliable sources, or too short a history). Aggregation of VaR/SVaR components by market factors or portfolios is fully integrated into the model.

CGML bases the stress period selection on a broad set of market factors that represent all assets held by CGML. The market factor selection is based on the materiality of risk sensitivities (delta, vega, etc.). A common stress period is selected as the covariance matrix calibrated from this period maximises VaR for CGML's portfolio, which is in line with the PRA supervisory statement SS13/13.

The stressed period selection is reviewed by Market Risk Management, Market Risk Analytics and the IMA Control Committee at least on a quarterly basis, and is reported to PRA quarterly.

10.3. Incremental Risk Charge

The Incremental Risk Charge (IRC) is a measure of potential losses due to default and credit migration risk over a one-year time horizon at a one-tailed, 99.9% confidence level under the assumption of constant positions.

A Monte Carlo in-house 6-factor copula model is used for the correlations between issuers. The correlation depends mainly on the risk rating, region and industry sector of the issuer, and thus provides a richer correlation structure than what has been observed with 1-factor copula models.

The model is calibrated annually to the public data of over 20,000 companies maintained within Citi's databases and has been the subject of independent model validation. The migration and default of each issuer are modelled consistently by a single normal random variable which is mapped to the inverse normal cumulative distribution of the transition matrix to determine whether a migration or a default happens. The transition matrix is based on publicly available data from rating agencies. The scope of the issuers that are used for the calibration of the model encompasses the full spectrum of relevant trading products. The model accepts as inputs the jump-to-default amounts and the spread sensitivities from every debt issuer with interest rate exposure in Citi's systems. Recovery rates are also simulated with their parameters properly calibrated to market data.

In addition, for the businesses within the scope of its IMA permission, CGML holds capital buffers in respect of certain risks not fully captured by its VaR/SVaR/IRC models.

A fixed one-year liquidity horizon is used consistently across all positions. The approach also includes positions that have maturities less than one year, and for such positions the time of default is determined and the P&L effect is estimated accordingly.

The IRC model, which is used to calculate the incremental risk capital over a one-year time horizon at a one –tail 99.9% confidence level, is consistent with the regulatory requirements and meets the required soundness standard. The model validation and internal governance framework is in place to monitor the model's performance on an on-going basis to ensure that it continues to meet the required soundness standard.

The IRC model has been validated to provide an independent assessment of technical and functional soundness. The validation includes the testing performed on the underlying data and the mathematical framework by the model developer as well as on additional independent testing designed by the model validator. The model parameters are calibrated on the long-term averages of through-the-cycle data, taking into account the period of significant market stress.

Backtesting is not feasible as the IRC model captures the default losses at a very high confidence level (99.9%), which is in line with regulatory observations. However, the accuracy and internal consistency of data and parameters used for the IRC internal models and modelling processes have been independently validated to ensure the technical and functional soundness of the model.

10.4 Stress Testing

As noted in Section 2.6.2, Citi performs stress testing on a regular basis to estimate the impact of extreme market movements. It is performed on individual positions and trading portfolios, as well as in aggregate and inclusive of multiple trading portfolios. Market Risk Management after consultations with the businesses, develops both systemic and specific stress scenarios, reviews the output of periodic stress testing exercises, and uses the information to assess the ongoing appropriateness of exposure levels and limits.

Citi uses two complementary approaches to market risk stress testing across all major risk factors (i.e., equity, foreign exchange, commodity, interest rate and credit spreads):

- Global Systemic Stress Testing (GSST) - top-down systemic stresses; and
- Business Specific Stress Testing (BSST) for the ICG - bottom-up business specific stresses.

Systemic stress tests are designed to quantify the potential impact of extreme market movements on a firm-wide basis, and are constructed using both historical periods of market stress and projections of adverse economic scenarios. Business specific stress tests are designed to probe the risks of particular portfolios and market segments, especially those risks that are not fully captured in VaR and systemic stresses.

10.5 Risks not in VaR (RNIV)

To the extent that a material risk is not adequately captured in the VaR model, CGML derives and documents RNIVs as add-ons to appropriately buffer the risks.

The RNIV capital add-on is calculated as follows:

- VaR type RNIV – The VaR based add-on (VaR RNIV) is calculated as the standalone VaR equivalent, scaled to a 10 day holding period. A stressed VaR type RNIV (SVaR RNIV) is also calculated with the stressed period identified corresponding to the one used for stressed VaR.
- Stressed RNIV – For RNIVs that are based on stress tests (Stressed RNIVs) CGML calibrates shocks to at least the same confidence level as would be the case were the risk to be included in the VaR framework.

RNIVs and SRNIVs are calculated by market risk managers and the identification, quantification and reporting of existing RNIVs, as well as potentially new risks, is monitored by Risk Analytics on a monthly basis.

Table 35: MR2-A - Market risk under the IMA

This table display the components of the own funds requirements under the IMA for market risk.

		31/12/2017 RWAs	31/12/2017 Capital requirements	31/12/2016 RWAs	31/12/2016 Capital requirements
		$m	$m	$m	$m
1	**VaR** (higher of values a and b)	3,460	277	3,345	268
(a)	Previous day's VaR (Article 365(1) of the CRR (VaRt-1))		164		154
(b)	Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR		277		268
2	**SVaR** (higher of values a and b)	7,237	579	6,320	506
(a)	Latest SVaR (Article 365(2) of the CRR (SVaRt-1))		369		258
(b)	Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)		579		506
3	IRC (higher of values a and b)	4,423	354	3,860	309
(a)	Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)		331		199
(b)	Average of the IRC number over the preceding 12 weeks		354		309
4	**Comprehensive risk measure** (higher of values a, b and c)	-	-	-	-
(a)	Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)		-		-
(b)	Average of the risk number for the correlation trading portfolio over the preceding 12 weeks		-		-
(c)	8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)		-		-
5	**Other**				
6	**Total**	15,119	1,210	13,525	1082

Market risk IMA increased by $0.128bn, primarily driven by RNIV in SVaR and IRC based on a 60-day average in the EMEA G10 Rates desk.

Table 36: MR2-B - RWA flow statements of market risk exposures under the IMA

The table presents a flow statement explaining variations in the market RWAs.

	VaR	SVaR	IRC	Comprehensive risk measure	Other	Total RWAs	Total capital requirements
	$m	$m	$m	$m	$m	$m	$m
RWAs as at 30 September 2017	**3,348**	**7,183**	**2,787**	**-**	**-**	**13,318**	**1,065**
Movement in risk levels	(338)	77	1,650	-	98	1,487	119
Model updates/changes	451	(136)	-	-	-	314	25
Methodology and policy	-	-	-	-	-	-	-
Acquisitions and disposals	-	-	-	-	-	-	-
Foreign exchange movements	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
RWAs as at 31 December 2017	**3,460**	**7,125**	**4,437**	**-**	**98**	**15,119**	**1,210**

MR2-B is a new table for 31 December 2017 for which no prior year comparatives are shown.

Over the quarter to 31 December 2017, movement in risk levels was primarily responsible for the movement in RWAs quarter on quarter. Incremental Risk Charge "IRC" increased by $1.65bn, based on a 60-day average, mainly driven by an increase in exposure to Germany and Greece.

Table 37: MR3 - IMA values for trading portfolios

This table display the values (maximum, minimum, average and the ending for the reporting period) resulting from the different types of models approved to be used for computing the regulatory capital charge at the group level, before any additional capital charge is applied on the value in accordance with Article 365 in Part Three, Title V, Chapter 5 of the CRR.

		31/12/17	31/12/16
		$m	$m
VaR (10 day 99%)			
1	Maximum value	81	85
2	Average value	48	43
3	Minimum value	30	6
4	Period end	46	35
SVaR (10 day 99%)			
5	Maximum value	268	156
6	Average value	88	67
7	Minimum value	7	25
8	Period end	69	70
IRC (99.9%)			
9	Maximum value	482	477
10	Average value	248	192
11	Minimum value	149	84
12	Period end	324	198
Comprehensive risk capital charge (99.9%)			
13	Maximum value	-	-
14	Average value	-	-
15	Minimum value	-	-
16	Period end	-	-

Over the period, IRC and SVaR increased due to increased risk levels in positions.

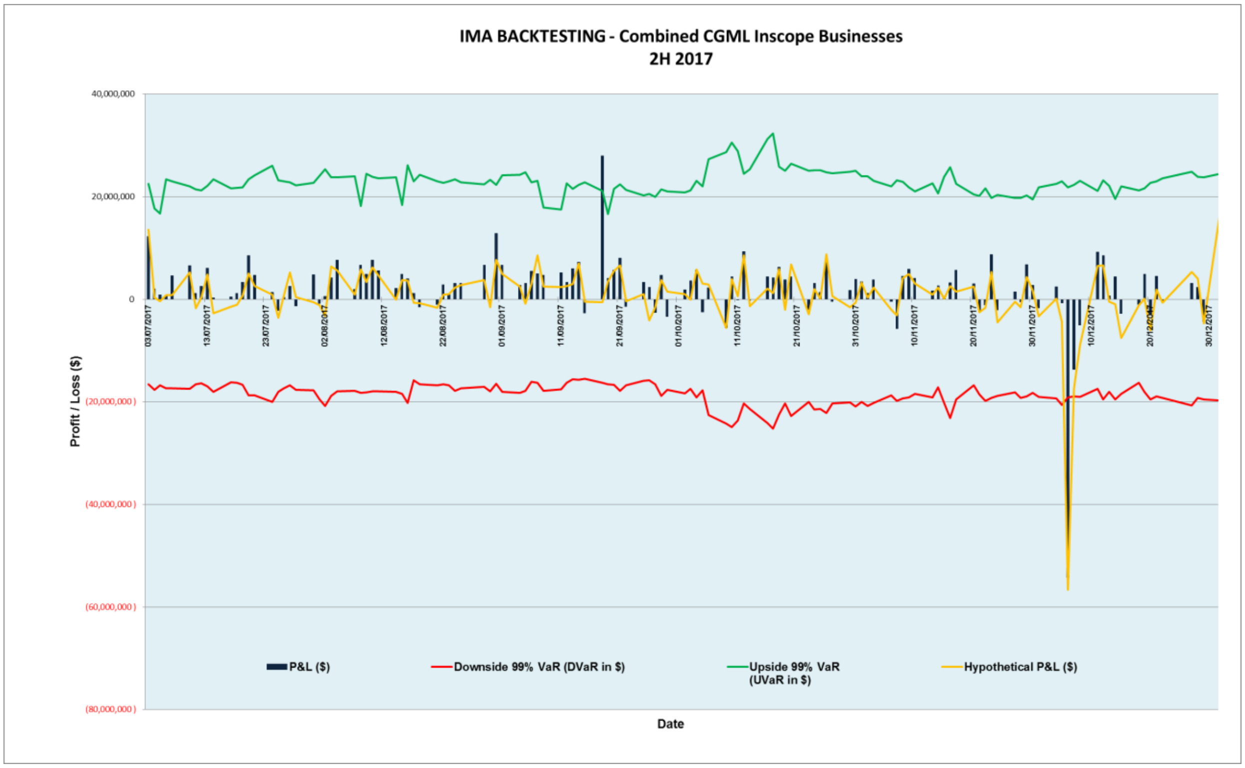
Backtesting is the comparison of VaR to actual profit and loss results and is conducted on a daily basis, at both legal vehicle and business levels. In line with regulatory requirements, Citi performs hypothetical backtesting against hypothetical profit and loss results (the daily profit or loss that would arise from a constant trading portfolio) at both levels in order to ensure that the business VaR models meet supervisory standards for the measurement of regulatory capital. Under normal and stable market conditions, Citi would expect the number of days where trading losses exceed its VaR to be no more than two or three occasions per year. Periods of unstable market conditions could increase the number of these exceptions.

The graphs below illustrate a comparison of the daily end-of-day VaR measure with the one-day change in the portfolio's value by the end of the subsequent business day (hypothetical P&L) for each day in the last six months of 2017.

Table 38: MR4 - Comparison of VaR estimates with gains/losses

The table presents a comparison of the results of estimates from the regulatory VaR model approved with both hypothetical and actual trading outcomes, in order to highlight the frequency and the extent of the backtesting exceptions and to give an analysis of the main outliers in backtested results.

The VaR backtesting gain exception noted in September, and the VaR backtesting loss exception noted in December, both related to equity derivatives transactions.



Note that the downside VaR in the figures is taken as the 100th worst loss out of 10,000 simulated daily P&Ls (1st percentile) from Citi's Monte Carlo VaR model. The upside VaR is taken to be the 100th best profit out of the 10,000 simulations (99th percentile). Hypothetical P&L represents market moves, excluding all trading P&L, fees, financing and accruals.

Total revenues of the trading business consist of:

- Customer revenue, which includes spreads from customer flow activity and gains on positions; and
- Net interest income.

CGML maintains the necessary systems, controls and documentation to demonstrate appropriate standards in respect of valuation, reporting and valuation adjustments.

Standardised Approach

Although CGML uses the standardised approach to calculate regulatory capital requirements for only a small proportion of the trading portfolio, nonetheless, this generates a larger number in terms of RWAs and capital that the firm needs to be hold against these assets.

Table 39: MR1 - Market risk under the standardised approach

The table display the components of own funds requirements under the standardised approach for market risk.

		As at the 31 December 2017		As at the 31 December 2016	
		RWAs	Capital requirements	RWAs	Capital requirements
		$m	$m	$mm	$mm
	Outright products				
1	Interest rate risk (general and specific)	8,887	711	9,670	774
2	Equity risk (general and specific)	10,603	848	7,247	580
3	Foreign exchange risk	1,851	148	899	72
4	Commodity risk	1,000	80	1,036	83
	Options				
5	Simplified approach	-	-	-	-
6	Delta-plus method	-	-	-	-
7	Scenario approach	558	45	557	45
8	Securitisation (specific risk)	150	12	139	11
9	**Total**	**23,050**	**1,844**	**19,547**	**1,564**

Increase in standardised market risk RWA was driven by;

- $3.4bn in Equity risk primarily driven by positions in CIUs and positions in US equities.

11. Liquidity Risk

11.1. LCR Disclosure

CGML defines liquidity risk as the risk that it will not be able to meet efficiently both expected and unexpected current and future cash flow and collateral needs without adversely affecting either daily operations or its financial condition.

Adequate liquidity and sources of funding are essential to Citi's businesses. Funding and liquidity risks arise from multiple factors, such as the following:

- restriction of wholesale secured and unsecured funding through widening of haircuts, reluctance of counterparties to roll maturing transactions or lack of availability for financing for certain asset classes;
- intraday liquidity risk where correspondent banks and securities settlement agents or depositories withdraw or restrict secured or unsecured intraday credit facilities upon which the Company relies to make payments and settle its transactions;
- cross currency liquidity shortfalls arising from cash flow mismatches within a particular currency;
- potential outflows from off balance sheet activities such as security versus security transactions, letters of credit or committed facilities (e.g. underwriting);
- loss of liquidity from derivatives transactions due to asymmetric margining terms, legally agreed conditions such as rating downgrade triggers, margin calls due to large market revaluations or clearing house/exchange action, novation of liquidity accretive contracts away from the Company or increased operational diligence of certain counterparties;
- recognition that the Company may continue to provide funding to certain customers to preserve its franchise despite there being no legal obligation to do so; and
- incremental funding requirements of the Company's Prime Brokerage and Delta One businesses from loss of internal coverage and cross funding, inability to roll repo or increased repo haircuts.

Concentration of funding and liquidity sources
CGML's funding strategy is centred on maintaining a funding profile that is diversified by structure, tenor and currency. CGML closely monitors and manages the tenor of funding sources to ensure it can meet liquidity needs under different stress scenarios and different time horizons.

CGML's primary funding sources include (i) repurchase agreements (ii) short and long-term debt (primarily senior and subordinated debt) mainly issued by the parent, and (iii) stockholders' equity.
Citi's Liquidity Risk Management Policy addresses concentration of funding sources through a limit and trigger framework, including counterparty and tenor concentrations. For secured financing transactions. The framework takes into consideration the financing tenor and the quality of the underlying collateral. The concentrations are monitored daily and reported to the UK Treasurer. Breaches on limits and triggers are also reported to the CGML Asset and Liability Committee (ALCO).

Derivative exposures and potential collateral calls
In the ordinary course of business, CGML enters into various types of derivative transactions, including bilateral transactions that are over-the-counter (OTC) and transactions settled via exchanges with central counterparties. CGML enters into derivatives contracts covering interest rate, foreign currency, commodity, equity and other market/credit risks for the purpose of trading and acting as a market maker or to hedge CGML's own risk profile.

During the life span of a derivatives transaction, Citi may be required to post initial margin or variation margin. The requirement to post margin can negatively impact Citi's funding and liquidity. In addition, ratings downgrades by the Rating Agencies may also have a negative impact on CGML's funding and liquidity due to reduced funding capacity and/or the need to post additional cash or securities collateral to counterparties.

CGML maintains liquidity reserves to counter potential liquidity outflows from derivatives activities under various stress scenarios.

Currency mismatch in the LCR

The LCR Delegated Act is calculated and reported on a consolidated basis and in significant currencies, EUR, GBP and USD. Majority of CGML's liquidity is held in USD, which can be readily converted to other currencies in the event of stress. To minimize liquidity mismatches, including currency mismatches in the LCR Delegated Act, CGML seeks to fund assets in the same currency and, at the same time, monitors the potential risk from foreign currency mismatches. To the extent mismatches arise, CGML employs currency limits framework to assess foreign currency capacity to meet funding needs and the ability to convert currencies to provide liquidity buffer under stress conditions. The framework incorporates currency matching of projected cash flows through applying discounts and size and tenor restrictions to determine the foreign currency capacity required to cover USD shortfalls as well as shortfalls in significant currencies under various volatility and stress scenarios. If the offset capacity is not sufficient to cover currency shortfalls, appropriate actions are taken to reduce the mismatch. The capacity and assumptions are determined by Citi's Independent Risk function.

The degree of centralisation of liquidity management and interaction between the group's units CGML manages liquidity risk through a global standardized risk governance framework that includes Citi's Global liquidity risk management policy. The policy establishes standards for defining, measuring, limiting and reporting liquidity risk to ensure the transparency and comparability of liquidity risk-taking activities. The policy also requires establishment of an appropriate risk appetite. The framework for managing and monitoring liquidity risk includes liquidity stress tests, liquidity ratios and concentration exposure, and liquidity market triggers. Liquidity stress test results are reviewed with senior management including the UK ALCO on a monthly basis. Risk Management and Treasury are responsible for monitoring risk metrics; Risk Management is responsible for escalation of breaches for limits and trip of triggers on these metrics.

Table 40: LIQ1: LCR disclosure

Liquidity Coverage Ratio		Total unweighted value				Total weighted value			
Quarter ending		03/31/17	06/30/17	09/30/17	12/31/17	03/31/17	06/30/17	09/30/17	12/31/17
		$m	$m	$m	$m	$m	$m	$m	$m
Number of data points used in the calculation of averages		12	12	12	12	12	12	12	12
HIGH-QUALITY LIQUID ASSETS									
1	Total high-quality liquid assets (HQLA)	-	-	-	-	18,562	18,772	19,144	19,832
CASH-OUTFLOWS		-	-	-	-	-	-	-	-
2	Retail deposits and deposits from small business Customers, of which:	-	-	-	-	-	-	-	-
3	Stable deposits	-	-	-	-	-	-	-	-
4	Less stable deposits	-	-	-	-	-	-	-	-
5	Unsecured wholesale funding	3,312	3,602	3,496	3,130	3,312	3,602	3,496	3,130
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	-	-	-	-	-	-	-	-
7	Non-operational deposits (all counterparties)	3,312	3,602	3,496	3,130	3,312	3,602	3,496	3,130
8	Unsecured debt	-	-	-	-	-	-	-	-
9	Secured wholesale funding	-	-	-	-	24,848	25,164	26,307	27,700
10	Additional requirements	3,122	7,820	6,302	7,126	2,712	4,024	5,440	6,182
11	Outflows related to derivative exposures and other collateral requirements	2,895	4,427	6,153	7,062	2,500	3,789	5,304	6,131
12	Outflows related to loss of funding on debt products	-	-	-	-	-	-	-	-
13	Credit and liquidity facilities	226	264	148	65	211	235	135	51
14	Other contractual funding obligations	252	255	249	488	-	-	-	226
15	Other contingent funding obligations	526	614	675	788	263	307	337	394
16	**TOTAL CASH OUTFLOWS**	-	-	-	-	31,135	33,098	35,580	37,632
CASH-INFLOWS		-	-	-	-	-	-	-	-
17	Secured lending (eg reverse repos)	126,189	134,001	142,847	147,847	18,846	18,616	19,983	21,681
18	Inflows from fully performing exposures	1,340	1,946	2,307	2,181	1,340	1,946	2,307	2,181
19	Other cash inflows	682	904	1,341	1,378	682	904	1,341	1,378
EU-19a	(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)					-	-	-	-
EU-19b	(Excess inflows from a related specialised credit institution)					-	-	-	-
20	**TOTAL CASH INFLOWS**	128,212	136,850	146,495	151,406	20,869	21,466	23,631	25,240
EU-20a	*Fully exempt inflows*	-	-	-	-	-	-	-	-
EU-20b	*Inflows Subject to 90% Cap*	-	-	-	-	-	-	-	-
EU-20c	*Inflows Subject to 75% Cap*	82,753	87,012	94,014	98,835	20,869	21,466	23,631	25,240
21	**LIQUIDITY BUFFER**	-	-	-	-	18,562	18,772	19,144	19,832
22	**TOTAL NET CASH OUTFLOWS**	-	-	-	-	10,266	11,632	11,949	12,392
23	**LIQUIDITY COVERAGE RATIO (%)**					180.81%	161.38%	160.21%	160.04%

12. Securitisation Activity

CGML's securitisation activities fall within the ICG business segment. Within ICG, securitisation activity is conducted within Global Structured Finance and Securitisation (GSFS) and Global Securitised Markets (GSM).

12.1 Global Structured Finance and Securitisation

This group within the ICG structures and underwrites securitisations of financial assets primarily for financial institutions across EMEA. The desk originates and distributes (both via bank loan syndication and capital markets) secured risk based mainly on tranching and rating of that risk.

12.2 Global Securitised Markets

The EMEA Global Securitised Markets ("GSM") business model is primarily comprised of two types of activity; market making in ABS, and in real estate and mortgage loan/portfolio financing with a consequent exit through a loan sale or securitisation. GSM's ABS trading desk uses CGML to book market risk. The Commercial Real Estate and Residential Real Estate desks have no exposure on CGML although CGML will act as an underwriter and arranger of CMBS/RMBS issuances. GSM is further divided into the following business lines:

12.2.1 ABS Trading

The ABS desk actively trades new issuances, existing ABS, RMBS and CMBS securities. Trading activities on ABS, RMBS and CMBS are carried out of CGML.

12.2.2 Commercial Real Estate

The Commercial Real Estate (CRE) team is focused on financing of commercial real estate backed projects, non-performing loan portfolio financing, acquisition of performing/re-performing commercial real estate portfolios.

The primary exit strategy includes the issuance of commercial mortgage-backed securities ("CMBS") which can be arranged and distributed through CGML. The loan financing itself only takes place on Citi's bank chain vehicles.

12.2.3 Residential Real Estate

The Residential Real Estate team primarily finances acquisitions of performing and re-performing residential mortgage portfolios, as well as financing of warehouse loans for residential mortgage businesses. The primary exit strategy includes issuance of residential mortgage-backed securities ("RMBS") which can be arranged and distributed through CGML. The loan financing itself only takes place on Citi's bank chain vehicles.

The Residential Real Estate team originates, structures and distributes RMBS from CGML and works with the following ratings agencies for the rating of issuances:

- Standard and Poor's – ABS exchange service and Ratings Direct (general); rating of Conduit Programmes; preliminary ratings assessments (at loan stage) and final determinations or assessments at the time of a capital markets issuance.
- Moody's – Real estate related break-ups; rating of Conduit Programmes; preliminary ratings assessments (at loan stage) and final determinations or assessments at the time of a capital markets issuance.
- Fitch – Real estate related break-ups and general surveillance; rating of Conduit Programmes; preliminary ratings assessments (at loan stage) and final determinations or assessments at the time of a capital markets issuance.

12.3 Accounting Policies for Securitisation Activity in the Trading Book (IFRS)

Any securitisation positions (such as Asset Backed Securities or Mortgage Backed Securities) purchased as part of a trading strategy are accounted for at fair value through earnings.

Securitisation Exposures in the Trading Book

The following tables set out the aggregate amount of securitisation positions held in the trading book by CGML as at 31 December 2017 and 31 December 2016.

Table 41: Aggregate amount of trading book securitisation positions held

	31/12/2017	31/12/2016
	$m	$m
On Balance Sheet	408	378
Off Balance Sheet	6	5
Total	**414**	**383**

Table 42: Capital Treatment applied to book securitisation positions

	On Balance Sheet		Off Balance Sheet	
Risk Weighting	Exposure	Capital Resources Requirement	Exposure	Capital Resources Requirement
31/12/2017	$m	$m	$m	$m
At 20%	179	3	0	0
At 50%	131	5	6	0
At 100%	15	1	0	0
At 350%	7	2	0	0
Deducted from Capital	78	0	0	0
Total	**408**	**12**	**6**	**0**
31/12/2016	$m	$m	$m	$m
At 20%	221	4	0	0
At 50%	29	1	0	0
At 100%	25	2	5	0
At 350%	14	4	0	0
Deducted from Capital	89	0	0	0
Total	**378**	**11**	**5**	**0**

Citi has a well-established risk management framework for securitisations. The ICG trading book securitisation business is subject to the ICG policy “Rules Governing Market Risk”, part of the ICG Risk Manual.

Credit Risk Managers are responsible for:

- Determining the ICG’s risk appetite for securitisation transactions;
- Approving extensions of credit and ensuring data capture associated with those extensions of credit is accurate;
- Monitoring and managing credit extensions to be within Citi’s risk appetite and limits; and
- Working with the respective businesses in the allocation of credit to optimize returns.

Market Risk Managers are responsible for:

- Ensuring that securitisation transactions, booked in the trading book, are consistent with the businesses’ mandate and represent an adequate risk/reward balance;
- Approving securitisation transactions that are booked in the trading book and ensuring data capture associated with those securitisation transactions is accurate; and
- Ongoing monitoring of market risk associated with securitisation transactions that are booked in the trading book.

The business operates under an approved permitted products list which applies at the desk level. All major generic sources of risk and stress losses are covered by the desk’s limit structures, with granularity within these limit structures further enhanced through product-types, country risk and ratings requirements. Concentration limits may also exist by obligor name, depending on the business.

Stress testing is completed in various formats, including weekly stress tests via Citi’s Global Systemic Stress Testing (GSST) ‘top-down’ systemic stresses, monthly risk reports and annual exercises. In addition, Risk Management performs ad hoc stress tests when considered necessary.

For those risks not fully captured in VaR or the linear stresses, a Business Specific Stress Test (BSST) is developed and produced in conjunction with the linear stresses. The BSSTs are reviewed at least quarterly to ensure relevance and completeness.

Securitisation Exposures in the Banking Book

CGML does not have a banking book and therefore does not have this type of activity.

13. 2017 Remuneration Statement

Citi's Compensation Philosophy

Employee compensation is a critical tool in the successful execution of Citi's corporate goals.

As long-term value creation requires balancing strategic goals, so does developing compensation programs that incentivise balanced behaviours.

The Compensation Philosophy describes Citi's approach to balancing the five primary objectives that Citi's compensation programs and structures are designed to achieve and is available online at: http://www.citigroup.com/citi/investor/corporate_governance.html.

The Compensation Philosophy also sets out Citi's commitment to managing risk, and management has received clear direction from the Personnel and Compensation Committee (P&C Committee)[4] to use discretion in awarding incentive compensation consistently with risk mitigation principles.

Citi's Compensation Philosophy applies to all of its foreign subsidiaries and branches, save where exceptions are required by local law.

There were no significant changes introduced to Citi's Compensation Philosophy in 2017. Minor changes to compensation practices and processes were introduced in order to align with the EBA Guidelines on Sound Remuneration Policies that came into force on January 1, 2017 (the "EBA Guidelines").

Remuneration Governance

Global Remuneration Committee

The Personnel and Compensation Committee (P&C Committee) of the Board of Directors of Citigroup Inc., oversees Citi's global remuneration policies and practices. It annually reviews the compensation structures for members of senior management and other highly compensated or regulated individuals. The P&C Committee, with the assistance of the Chief Risk Officer, also reviews the design and structure of compensation programs relevant to all employees in the context of risk management.

The P&C Committee's terms of reference are documented in the P&C Committee Charter, which establishes the scope and mandate of the P&C Committee's responsibilities and the general principles governing the remuneration policy of the firm globally. The Charter (updated for 2018) is available online at: http://www.citigroup.com/citi/investor/data/percompcharter.pdf?ieNocache=157.

The P&C Committee members are all independent non-executive directors, selected and appointed on account of their background and experience in business and their capability to fulfil their responsibilities as P&C Committee members.

For the performance year 2017, the P&C Committee members were: Duncan P. Hennes (Chairman), Diana L. Taylor, Gary M. Reiner, Michael E. O'Neill, William S. Thompson, Jr. (until July 2017) and Dr Judith Rodin (until April 2017). Biographies and details around the compensation paid to P&C Committee members are available in the 2017 Proxy Statement. The P&C Committee met 13 times in 2017 and each Director attended at least 75% of all meetings.

The P&C Committee is supported by Human Resources and Citi's control functions, including Independent Risk and Legal.

The P&C Committee also draws on considerable experience of the other non-executive directors of the

[4] The Personnel and Compensation Committee (P&C Committee) of the Board of Directors of Citigroup Inc

Board of Citigroup Inc. It is also empowered to draw upon internal and external expertise and advice as it determines appropriate and in its sole discretion and Citi pays the fees of any such external advisors. The Committee appointed Frederic W Cook & Co (“Cook & Co”) for 2017 to provide the Committee with independent advice on Citi’s compensation programs for senior management. Cook & Co reports solely to the Committee and the Committee has sole authority to retain, terminate, and approve the fees of Cook & Co. Cook & Co does no other work for Citi and the appointment of an independent adviser is reviewed annually by the P&C Committee.

The P&C Committee meets regularly with Citi’s Chief Risk Officer (CRO), other senior risk officers and other members of senior management to discuss and evaluate risk and Citi’s compensation programs, thereby further integrating Citi’s independent risk function into compensation governance and oversight. The CRO reviews the key terms of Citi’s overall compensation framework, to help ensure that consistent with Citi’s Compensation Philosophy, compensation is aligned with long-term performance in a manner that does not encourage imprudent risk-taking.

CGML Remuneration Committee

In 2016 Citi established the Citigroup Global Markets Limited ("CGML") Remuneration Committee (“CGML RemCo”) with the following objectives:

- To be responsible for the preparation of decisions by CGML regarding remuneration of CGML employees and CGML Material Risk Takers, including decisions which have implications for the risk and risk management of CGML and which are to be taken by the Board of Directors.
- In taking those decisions, to ensure compliance by CGML with its obligations under the PRA and FCA Remuneration Codes and the EBA Guidelines, and to take into account, where appropriate, relevant guidance and the long-term interests of shareholders, investors and other stakeholders in CGML and the public interest.

The CGML RemCo’s remit within its Terms of Reference includes the following:

- To review and approve remuneration awards to material risk takers of CGML;
- To review the achievement of performance targets and recommendations for ex post risk adjustment, including the application of malus and clawback arrangements for CGML (as appropriate);
- To review the mechanisms and systems adopted to ensure that the remuneration system applicable to CGML properly takes into account all types of risks, liquidity and capital levels and that the overall remuneration policy is consistent with and promotes sound and effective risk management and is in line with business strategy, objectives, corporate culture and values and the long-term interest of Citigroup including CGML;
- To support the Board of Directors of CGML in overseeing the remuneration policies, practices and processes and compliance with the remuneration policy
- To provide support and advice to the Board of Directors of CGML on the remuneration policy applicable to CGML and to ensure that the remuneration policy is up to date and, if necessary, make proposals for changes where appropriate;
- To review scenarios to test how remuneration policies and practices applicable to CGML react to external and internal events, and back-test the criteria used for determining remuneration awards and ex ante risk adjustment based on the actual risk outcomes;
- To review the appointment of any external remuneration consultants that may be engaged by the Board of Directors of CGML;

- To ensure the adequacy of information provided to CGML's shareholder(s) in respect of remuneration policies and practices, in particular on any proposal to increase the maximum level of the ratio between fixed and variable remuneration.

The CGML RemCo acts as the remuneration committee of CGML, whereas the P&C Committee fulfils the same role for the wider group. For the 2017 performance year, the CGML RemCo comprises of Non-Executive Directors: Diana Taylor (Chair and SMF12), Susan Dean, Richard Goulding, Jonathan Asquith (until August 2017) and Cyrus Ardalan (appointed in September 2017), all of whom also served on the CGML Risk Committee during 2017. The CGML RemCo met 10 times in 2017 and each Director attended at least 75% of all meetings. The CGML RemCo does not engage independent consultants, but Clifford Chance has advised on remuneration matters for 2017.

Material Risk Takers

Material Risk Takers
In accordance with the PRA and FCA Codes, Citi maintains a record of its Material Risk Takers, which comprises the categories of staff whose professional activities are determined as having a material impact on the firm's risk profile. For the 2017 performance year, Material Risk Takers were identified principally using Citi's understanding of the criteria for identifying staff as set out in Commission Delegated Regulation (EU) No 604/2014. There have been no material changes for this year.

Design and Structure of Remuneration

Fixed Remuneration – Salary, Role-Based Allowances ("RBAs") and Benefits

Citi's fixed remuneration is set to appropriately attract, retain and motivate employees, in line with market practices, and is benchmarked against market data by role. Fixed remuneration primarily reflects an employee's professional experience and organisational responsibilities as set out in the employee's job description and terms of employment, and includes the following elements:

- Salary
- Standard Citi benefits including pension
- Role Based Allowances (RBA) for a limited number of roles

All of these elements are classified as fixed remuneration on the basis of the EBA Guidelines (including that they are permanent and do not depend on performance).

Pension and other non-cash benefits are offered to employees as part of an overall reward package. CGML aims to provide pension and other benefits across all units/business groups, which are competitive against the external market.

RBAs have been assigned to a limited number of roles to reflect organisational responsibilities. Whether a particular role is eligible for an RBA is subject to the approval of the relevant RemCo (i.e. for CGML employees, the CGML RemCo). The rationale for granting an RBA is clearly articulated by reference to eligibility criteria, including specific details on the duties and responsibilities of the role.

Variable Compensation (Discretionary Incentive and Retention Award Plan)

Discretionary Incentive and Retention Award Plan (DIRAP) is Citi's main discretionary variable compensation plan[5] , and applies globally. It is designed to incentivise, reward and retain employees based on their current and prospective performance and contribution. Citi operates a fully flexible

5 From 2017, MRTs are also eligible for a supplemental cash award. This has been included in the "Remuneration awarded to CGML MRTs for 2017 performance year" table [TABLE 43].

remuneration policy, including the possibility to pay zero variable remuneration.

Awards made under the DIRAP are typically awarded in the form of cash and/or Citi stock. Cash awarded for the 2017 performance year to Material Risk Takers under DIRAP is included in the "Remuneration awarded to CGML MRTs for 2017 performance year" table [Table 43].

Citi operates a mandatory deferral policy, where total annual variable compensation of an individual awarded under DIRAP exceeds globally set thresholds. For Material Risk Takers in CGML, 2017 variable compensation subject to deferral was awarded in the form of Citi stock and deferred cash. Citi believes that awarding deferred stock and deferred cash are effective means of aligning employee interests with those of stockholders and other stakeholders.

Deferred Equity Awards

The Capital Accumulation Program (CAP) is the main programme under which Citi may make awards of deferred Citi stock to selected employees. Deferred stock awards are subject to the terms of the CAP plan.

Deferred equity awarded under CAP to Material Risk Takers for the 2017 performance year is included in the "Remuneration awarded to CGML MRTs for 2017 performance year" table [TABLE 43]. Prior years unvested CAP awards are included in the "MRT Deferred remuneration" table [TABLE 45].

In line with the EBA Guidelines, Citi has discontinued payment of dividends on deferred equity.

Short Term Equity Awards

Material Risk Takers receive a portion of their "immediate" variable compensation in the form of an immediately vesting stock award (EU Short Term Award or "EUSTA"), which is subject to a 12-month retention period. EUSTA awarded for the 2017 performance year to Material Risk Takers under DIRAP is included in the "Remuneration awarded to CGML MRTs for 2017 performance year" table [TABLE 43].

Deferred Cash Awards

A portion of 2017 deferred remuneration was awarded to Material Risk Takers in the form of a deferred cash award. Deferred cash awarded for the 2017 performance year to Material Risk Takers is outlined in the "Remuneration awarded to CGML MRTs for 2017 performance year" table [TABLE 43].

Similarly to dividends on deferred equity, Citi has discontinued payment of interest on deferred cash awards in line with the EBA Guidelines.

Deferrals and Retention Periods

Citi operates a standard or "default" deferral policy period of four years for non-Material Risk Takers, which it considers captures the duration of most risks in a proportionate manner.

Material Risk Takers are subject to deferral rates of 40% to 100% of total variable compensation, which is delivered in the form of deferred stock and deferred cash. These awards vest over at least three years and are subject to a further six- to twelve-months retention period.

Deferred Awards for Risk Manager Material Risk Takers (identified by reference to particular qualitative criteria in Commission Delegated Regulation (EU) No 604/2014) vest over five years and over 7 years for Senior Managers. The remaining portion of variable compensation is split equally between immediate cash and immediately vesting stock (EUSTA), which is subject to a twelve-months retention period.

Material Risk Takers who fall within de-minimis thresholds are subject to Citi's mandatory deferrals.

Malus and Clawback

Deferred remuneration awarded to Material Risk Takers is subject to pre-vesting adjustment ("malus"), including in the circumstances envisaged by the PRA and FCA Remuneration Codes. Since January 2015, Citi's award documentation also provides that Citi can require the vested portion of awards made to MRTs to be repaid or otherwise recover an amount corresponding to some or all of awards received for up to 7 years from the date of the award for affected employees; and additionally reflects the potential to extend clawback for the Senior Managers under the UK Individual Accountabilities Regime, for a period of up to 10 years from the date of award.

Clawback provisions apply if an MRT was responsible for, or participated in, (1) conduct that resulted in significant losses to Citigroup or (2) Citigroup or the business unit has a material failure of risk management. Award documents for MRTs has been reviewed in April 2017 to align with the EBA Guidelines and define with greater specificity the actions and events that may trigger the application of clawback.

Performance Based Vesting Condition

The entire deferral for MRTs is subject to Performance Based Vesting (PBV) conditions as an additional ex-post adjustment mechanism. This structure further balances for risk and aligns the actual payout to employees with business performance.

Deferred equity awards made to Material Risk Takers are subject to a formulaic performance based vesting condition that may result in the cancellation of all or part of unvested amounts in the event of losses in their relevant business. The trigger for application of a payout reduction is the emergence of pretax losses in the "reference business" for the calendar year ending immediately prior to the vesting date of a given tranche of deferred equity.

Deferred cash awards made to Material Risk Takers are subject to discretionary performance based vesting, which may result in cancellation of unvested awards where an employee has significant responsibility for a material adverse outcome, such as events which lead to serious financial or reputational harm to Citi.

Other Remuneration Policies

Guarantees, Buyouts and Retention Payments

Citi has guidelines in place with respect to guarantees that apply to all employees across the EMEA region, including employees of all PRA and FCA regulated entities. Citi's guidelines on guarantees provide that guaranteed incentive awards for employees can only be made in exceptional circumstances, in the context of recruitment and by reference to the first year of service and provided the legal entity has a sound and strong capital base.

As part of the governance framework, HR regularly monitors the number of guarantees that are awarded by the business to new hires and the award of guarantees requires CGML RemCo review and approval.

Guaranteed awards which buy out equity or similar instruments which are forfeited as a result of resigning employment with another employer and joining Citi EMEA are generally permitted but must not be more generous in either amount or terms than that provided by the former employer. The "Guaranteed bonus, sign-on and severance payments made to MRTs in 2017" table [TABLE 44] includes 2017 guaranteed awards made to Material Risk Taker hires.

Retention awards can only generally be made in exceptional circumstances, for example, during major restructuring, during a merger process; or where a business is winding down, such that particular staff needs to be retained on business grounds.

Severance

Severance payments are subject to appropriate governance and approvals. Citi's severance payment guidelines are in line with the EBA Guidelines, and provide that severance:

- Should not provide for a disproportionate reward but should represent appropriate compensation for early termination of employment.
- Should not reward failure, misconduct or be paid where immediate termination of the employment contract is permitted.
- Are not paid to employees transferring between legal entities, unless required by law.

The "Guaranteed bonus, sign-on and severance payments made to MRTs in 2017" table [TABLE 44] includes severance payments made to Material Risk Takers, whose employment terminated in 2017.

Ratio of Fixed to Variable Remuneration

Citi seeks to balance the components of reward between fixed and variable, and between short term and long-term components. For relevant employees, an annual review of the balance between fixed and variable compensation takes place and, where required, adjustments are made to the fixed element of pay to ensure that an appropriate balance of fixed versus variable continues to be maintained on an ongoing basis. The aggregate of fixed remuneration paid to Material Risk Takers for 2017 is set out in the "Remuneration awarded to CGML MRTs for 2017 performance year" table [TABLE 43].

Following the introduction of CRD IV, CGML has obtained formal shareholder approval to apply a fixed to variable ratio of up to 1:2 for Material Risk Takers in all relevant business areas in 2016 and subsequently in October 2017 for the 2017 performance year. Approval of the ratio was sought from P&C Committee, which is the Board Committee of the ultimate parent company.

Stockholding Requirements

Awards to certain members of senior management are subject to a stock ownership commitment. In addition, executives' interests remain aligned with those of shareholders even after termination of employment, where stock will continue to vest over time after termination. Vesting of deferred awards does not accelerate upon termination of employment except in the case of death.

Personal Hedging

Employees subject to the PRA and FCA Remuneration Codes are prohibited from engaging in personal hedging strategies or taking out remuneration or liability related contracts of insurance that undermine or may undermine any risk alignment effects of their remuneration arrangements.

In addition, Citi's Corporate Personal Trading Policy and Standards prohibits "Covered Employees" (separately defined for this purpose) and related persons from hedging in any manner (other than currency hedges) unvested restricted stock or deferred stock awarded under CAP or restricted shares, or otherwise having a financial interest in having Citi securities decline in value.

Link between Pay and Performance

Bonus pool decisions are based on many factors including, but not limited to:

- Year over year business performance

- Performance compared with plan for the current year
- Performance against key risks (including conduct risk, operational risk) and controls objectives
- Performance relative to peers

Citi's programmes incorporate both ex-ante and ex-post features to adjust for risk and current and future performance. There is a process for risk-adjusting the annual discretionary incentive and retention compensation pools from which annual incentive and retention awards are made.

Citi has enhanced its performance evaluation process to formally integrate opinions of personnel from the independent control functions in the performance evaluations of Material Risk Takers. Further details of Citi's individual performance evaluation process are set out below.

As noted above, deferred awards made to Material Risk Takers also include a PBV feature and malus and clawback provisions which may result in cancellation of unvested and vested awards.

At least 50% of deferred awards are made in the form of Citi common stock and are therefore inherently performance-based. Citi has trading policies that limit hedging strategies that might otherwise undermine the risk alignment effects of their remuneration arrangements.

Individual Performance

One of Citi's key compensation principles is to "promote meritocracy by recognising employee contributions".
The performance assessment of Material Risk Takers is based on individually tailored goals (the "What" element), and an assessment against Citi's Leadership Standards (the "How"element):

Leadership Standard statements	Definitions
Develops our people	• Builds talent and teams for Citi by creating a culture of meritocracy and transparency, and celebrating excellence, initiative and courage • Inspires and empowers the team to work collaboratively to achieve superior results • Creates an environment where people hold themselves to the highest ethical standards • Models personal growth and consistently provides coaching and feedback in support of ongoing development and retention • Attracts great talent, builds a diverse talent pipeline, and recognizes, rewards, promotes based on performance
Drives value for clients	• Enables economic value and positive social impact for clients, companies, governments, and communities • Puts clients first by anticipating, understanding, and exceeding their expectations and needs • Acts as a trusted partner to clients by delivering superior advice,

Leadership Standard statements	**Definitions**
	products and services • Brings the best of Citi and knowledge of global issues and market trends to create value and good will with clients • Drives innovation, competitive differentiation and speed to market by actively learning from others
Works as a partner	• Works collaboratively across the firm and encourages others to achieve the best results for Citi and our clients • Exemplifies global leadership by embracing unique perspectives from across Citi to achieve the best solutions • Challenges self and colleagues to higher levels of performance by actively listening and engaging in constructive dialogue • Treats people with respect and assumes the intentions of others are based on common goals and shared purpose
Champions progress	• Champions a culture of high standards, pushes for progress, embraces change and challenges the status quo in support of Citi's vision and global strategy • Communicates a vision that is forward looking and responsive to changes in the environment • Inspires enthusiasm and mobilizes resources for productive and innovative change • Exhibits confidence and agility in challenging times • Sets a positive tone when implementing Citi-wide change initiatives
Lives our values	• Ensures systemically responsible outcomes while driving performance and balancing short and long term risks • Sets the standard for the highest integrity in every decision • Leads by example; willing to make difficult choices in support of Citi and our stakeholders • Makes Citi better for all by putting the clients' and Citi's interests ahead of individual or team interests • Has the courage to always do what's right and the humility to learn from mistakes

Leadership Standard statements	**Definitions**
Delivers results	• Sets high standards and achieves performance objectives by creating a clear path toward ethical and sustainable results • Translates Citi's strategy into effective business plans while proactively overcoming obstacles • Prioritizes and provides a clear line of sight to the most critical work • Sets goals and measures progress to ensure the organization is focused on ethics, execution, and results • Expects self and team to consistently meet/exceed expectations

Citi conducts an annual independent review process pursuant to which the control functions (Compliance, Finance, Independent Risk, Internal Audit and Legal) provide an evaluation of risk behaviours of Material Risk Takers. The risk behaviour rating from the independent review process is included in the performance evaluation system to inform the performance review conducted by the individual's manager. The performance evaluation system includes formal risk goals for all Material Risk Takers as well as a formal manager-provided risk rating.

Whilst the appraisal system reflects performance in the current year, any compliance or risk related breach in a previous performance period that is discovered in the current performance period may be taken into account when determining the individual's rating. For Material Risk Takers material errors which occur in a previous performance period but are discovered in the current performance period may result in an adjustment of unvested deferred compensation and/or current year end variable

Remuneration of Control Function Employees

In terms of remuneration for employees in control functions, whilst remuneration levels are influenced by Citi's overall performance, individual compensation is determined within the function and pay decisions are based on assessments against measurable goals and targets which are set by each function. Compensation of Control Function employees is regularly benchmarked against external market data.

Citi maintains the independence of key control functions (e.g. Compliance and Risk) to minimise any scope for potential conflicts of interests. Accordingly, there should be no conflict of interest on account of any business' potential to influence individual awards in the control function. Citi ensures performance management and compensation decisions for function personnel are directed by function management, and not the business unit.

Table 43: Remuneration awarded to CGML MRTs for 2017 performance year

GBP millions (i)	Senior management (ii)	All other MRTs: ICG (iii)	Support Functions	Independent Control Functions
Number of employees	9	469	15	9
Total fixed remuneration (iv)	**12.4**	**205.3**	**7.4**	**2.7**
Total variable remuneration (v)	**11.4**	**229.5**	**8.9**	**0.9**
Of which: cash-based	5.7	110.7	4.3	0.6
Of which: deferred	4.4	75.8	3.4	0.1
Of which: shares or other share-linked instruments (vi)	5.7	118.8	4.6	0.3
Of which: deferred	4.7	86.1	3.9	0.2
Of which: other forms	-	-	-	-
Of which: deferred	-	-	-	-
Total Remuneration	**23.8**	**434.8**	**16.3**	**3.6**

Additional Notes

i. All non-GBP awards are converted using the European Commission exchange rate for financial programming and the budget for December 2017.

ii. Senior Management as defined under articles 3.1 and 3.3 of the EBA regulatory technical standard on criteria to identify categories of staff whose professional activities have a material impact on an institution's risk profile under Article 94(2) of Directive 2013/36/EU.

iii. Fixed remuneration includes salary, role based allowance and the annualized value of pension and benefits.

iv. Variable remuneration awarded in respect of 2017 performance year. In accordance with the shareholder approval obtained in 2016 and subsequently in 2017, variable component of remuneration of an MRT for any one year can be set up to a maximum of 200% of the fixed remuneration.

v. Share-based awards are made in Citi shares and represent value at grant.

Table 44: Guaranteed bonus, Sign-on and Severance Payments made to MRTs in 2017

GBP millions (i)	Guaranteed Bonuses: Number of employees	Guaranteed Bonuses: Total amount	Sign-on awards: Number of employees	Sign-on awards: Total amount	Severance payments (ii): Number of employees	Severance payments (ii): Total amount (iii)
Senior management	-	-	-	-	-	-
Other material risk-takers	2	4.0	-	-	26	4.0
ICG	2	4.0	-	-	24	3.6
Support Functions	-	-	-	-	-	-
Independent Control Functions	-	-	-	-	2	0.4

Additional Notes
i. All non-GBP awards are converted using the European Commission exchange rate for financial programming and the budget for December 2017.
ii. Severance payments allocated to MRTs terminated during 2017, which include redundancy payments and statutory severance. None of these severance payments were included in the ratio of variable to fixed remuneration for 2017 performance year in line with the EBA Guidelines (paragraph 154 (a) – (c)).
iii. The highest severance in 2017 was a redundancy payment made to a non-UK based employee for the amount of GBP 480,594.

Table 45: MRT Deferred remuneration

GBP millions	Outstanding deferred and retained remuneration as at December 29, 2017 (i), of which: Unvested	Vested (ii)	Of which: Total amount of outstanding deferred and retained remuneration exposed to ex post explicit and/or implicit adjustment	Total amount of amendment during the year due to ex post explicit adjustments	Total amount of amendment during the year due to ex post implicit adjustments	Total amount of deferred remuneration paid out in the financial year (iv)	Total amount of deferred remuneration awarded in the financial year (v)
Senior management	**22.1**	**-**	**22.1**	**-**	**-**	**11.2**	**6.9**
Of which: cash-based	7.8	**-**	7.8	**-**	**-**	3.5	3.5
Of which: shares	13.6	**-**	13.6	**-**	**-**	7.7	3.4
Of which: other share-linked instruments (iii)	0.7	**-**	0.7	**-**	**-**	-	-
Of which: other forms	-	-	-	**-**	**-**	-	-
All other MRTs							
ICG (iii)	**335.3**	**0.5**	**335.5**	**-**	**-**	**167.4**	**148.1**
Of which: cash-based	124.5	**-**	124.3	**-**	**-**	46.7	71.5
Of which: shares	210.8	**0.5**	211.2	**-**	**-**	120.7	76.6
Of which: other share-linked instruments	**-**	**-**	**-**	**-**	**-**	-	-
Of which: other forms	**-**	**-**	-	**-**	**-**	-	-
Support Functions	**15.5**	**-**	**15.5**	**-**	**-**	**7.0**	**6.3**
Of which: cash-based	5.7	**-**	5.7	**-**	**-**	2.1	3.1
Of which: shares	9.8	**-**	9.8	**-**	**-**	4.9	3.2
Of which: other share-linked instruments	-	**-**	-	**-**	**-**	-	-
Of which: other forms	**-**	**-**	-	**-**	**-**	-	-
Independent Control Functions	**1.1**	**-**	**1.1**	**-**	**-**	**0.5**	**0.3**
Of which: cash-based	0.3	**-**	0.3	**-**	**-**	0.1	0.1
Of which: shares	0.8	**-**	0.8	**-**	**-**	0.4	0.2
Of which: other share-linked instruments	-	**-**	-	**-**	**-**	-	-
Of which: other forms	**-**	**-**	-	**-**	**-**	-	-

Additional Notes

i. Value of outstanding share awards is calculated using Citi closing share price and the GBPUSD FX rate as at December 29, 2017. Value of outstanding non-GBP cash awards is converted into GBP using the FX rate for the relevant currency as at December 29, 2017.

ii. Total outstanding deferred remuneration that has vested but is under restriction as at December 29, 2017.

iii. Refers to stock units granted

iv. Shares are considered paid when vested. Average of the opening and closing price on the vesting date is used to calculate the value of an award at vest. Value of non-GBP cash awards is converted into GBP using the FX rate for the relevant currency at payment date.

v. Value of share-based awards made in 2017 represents value at grant. Value of non-GBP deferred cash awards is converted into GBP using the FX rate for the relevant currency at grant date.

Table 46: 2017 Remuneration Banding for Annual Compensation of Individuals earning at least EUR 1 Million (i)

Total Compensation	Number of individuals
EUR 1 million to below EUR 1.5 million	86
EUR 1.5 million to below EUR 2 million	20
EUR 2 million to below EUR 2.5 million	19
EUR 2.5 million to below EUR 3 million	8
EUR 3 million to below EUR 3.5 million	10
EUR 3.5 million to below EUR 4 million	2
EUR 4 million to below EUR 4.5 million	1
EUR 4.5 million to below EUR 5 million	3
EUR 5 million to below EUR 6 million	3
EUR 6 million to below EUR 7 million	6
EUR 7 million to below EUR 8 million	2
EUR 8 million to below EUR 9 million	-
EUR 9 million to below EUR 10 million	-
EUR 10 million to below EUR 11 million	1
EUR 11 million to below EUR 12 million	-
EUR 12 million to below EUR 13 million	-
EUR 13 million to below EUR 14 million	1
TOTAL	**162**

Additional Notes

i. All non-GBP awards are converted using the European Commission exchange rate for financial programming and the budget for December 2017.

14. Other Risks

14.1. Conduct Risk Management

Citi has a commitment as well as an obligation to identify, assess, and mitigate conduct risks associated with its businesses and functions. Citi has a Conduct Risk Policy (the “Policy”) to further the objectives of its enterprise-wide Conduct Risk Program (the “Program”), which was established in 2014 to enhance Citi’s culture of compliance and control through the management, minimization and mitigation of Citi’s conduct risks. The Program is overseen by the Ethics and Culture Committee of the Citigroup Inc.’s Board of Directors. Additionally, the Conduct Risk Steering Committee, which is comprised of representatives from Citi’s major businesses and global functions, is set to provide governance and strategic direction for the Program; oversee the development, review, and discussion of conduct risk-related reports and metrics; and review selected risks, behaviors, and outcomes to identify ways to enhance Citi’s culture.

Each business and function is also responsible for monitoring and reporting its significant conduct risks, issues and related trends to senior management and the appropriate governance forums. Such forums may include the Country Coordinating Committees, Business Risk Compliance and Control Committees, and/or the Business Practices Committees. Finally, the Program reports at least annually to the Ethics and Culture Committee of the Citigroup Inc. Board of Directors.

The Policy lays out the minimum requirements of the Program for each business and function as well as related roles and responsibilities across the three lines of defense. Each of Citi’s businesses (first line of defense) owns and manages the risks inherent in or arising from the business, including conduct risk, and is responsible for managing, minimizing and mitigating those risks. The business – in partnership with in-business risk management – is responsible for identifying current and emerging significant conduct risks and managing those risks, in part through the implementation of mitigating controls to reduce the likelihood of harm to customers, clients, or the integrity of the markets, and thereby the integrity of the firm.

The second line of defense – comprised of Independent Compliance Risk Management, Finance, Human Resources, Legal, Risk, including Operational Risk Management, and other functions, as appropriate – takes a risk-based approach to assess, advise on, monitor and test current and emerging significant conduct risks across products, businesses, functions, countries, and regions and works to enhance the effectiveness of controls.

Internal Audit (third line of defense) provides independent risk-based assurance over the Program and Policy, based upon a risk-based audit plan and audit methodology as approved by the Citigroup Inc. Board of Directors.

All three lines of defense are also responsible for escalating significant current and emerging conduct risks, including to relevant governance or management committees or forums, consistent with the requirements of the Citi Escalation Policy and Citi Code of Conduct.

14.2. Non-Trading Book Equity Exposures

CGML has a small number of equity investments which are held outside the trading book. This category includes investments in clearing houses, exchanges and other strategic investments which are required to be held for membership, access or relationship purposes, and which are otherwise not traded. They are carried on the balance sheet at fair value where this is readily determinable. Where this is not the case, the investment is carried at cost. The market price is deemed to be the fair value for exchange traded equities.

Table 47: Non-Trading Book Equity Exposures

	31/12/17	31/12/16
	$m	$m
Investments Held at Fair Value	31	28
Investments Held at Cost	3	6
Total	**34**	**34**

14.3. Interest Rate Risk in the Non-Trading Book

One of Citi's primary business functions is providing financial products that meet the needs of its customers. Loans and deposits are tailored to the customer's requirements with regard to tenor, index and rate type. Net Interest Revenue (NIR) is the difference between the yield earned on the non-trading book portfolio assets (including customer loans) and the rate paid on the liabilities (including customer deposits or borrowings). The NIR is affected by changes in the level of interest rates.

Interest Rate Risk Governance

The risks in Citi's non-traded portfolios are estimated using a common set of standards that define, measure, limit and report the market risk. Each business is required to establish, with approval from independent Market Risk Management, a market risk limit framework that clearly defines approved risk profiles and is within the parameters of Citi's overall risk appetite. In all cases, the businesses are ultimately responsible for the market risks they take and for remaining within their defined limits. These limits are monitored by independent Market Risk Management and country and business ALCOs.

CGML's business is almost entirely trading book in nature and therefore does not give rise to any material accrual interest rate risk.

15. Appendices

15.1. Appendix 1: UK Senior Management and Board Disclosures

The following senior management disclosures are made in accordance with CRR.

Recruitment and Diversity Policy for the CGML Board of Directors

Board Composition, Role and Effectiveness
The selection criteria for the Non-Executive Directors of CGML are designed to ensure their independence and the provision of robust challenge to their executive counterparts.

CGML has a combination of Non-Executive Directors who are either:

- UK based and independent from any of Citi's businesses;
- On the parent company's Board (in order to provide direct linkage between the main and subsidiary boards), but who are independent within the standards applicable to the parent board; or
- Former Citi executives who have a deep understanding of its business.

All new Non-Executive Directors receive training on the senior management regime and Companies Act responsibilities, as well as Citi familiarisation for independent Non-Executive Directors.

The selection process for Non-Executive Directors is rigorous and consists of several interviews. The interviewers include the CEO of the relevant legal entity, the EMEA Chief Administrative Officer and the EMEA Chief Legal Officer. All Board appointments are required to be formally recommended by the CGML Nominations Committee and approved by the CGML Board, followed by an application to the PRA for regulatory approval.

The recruitment process aims to select Non-Executive Directors with significant financial regulatory and industry expertise. This expertise is outlined in further detail in the biographical summaries later in this appendix.

In order to meet the PRA's expectations for legal entity focus, Citi also appoints a Chief Executive Officer (CEO) for CGML.

All new Executive Directors of CGML are subject to but not limited to, the firm's interview selection criteria process pursuant to the firm's Leadership, Ethics and Culture, Competency and Technical Interview Guidelines standards. As with Non-Executive Directors of CGML, Executive Directors of CGML are subject to background screening pursuant to the FCA and PRA Fitness and Probity.

Executive Directors of CGML benefit from the firm's mandatory training requirements including Leadership training programs. All Directors of CGML received induction training on the UK Accountability Regime.

There are no foreseeable changes anticipated to the composition of the management body.

Distinction between the Roles of Executive and Non-Executive Directors
A fundamental distinction is drawn between the roles of executive and non-executive directors. Non-Executive Directors do not have any business line responsibility, but have oversight responsibilities consistent with the approach recommended in the Combined Code on Corporate Governance and the PRA and FCA Senior Managers Regime. The Non-Executive Directors chair the board, set the agendas for those Committee meetings and determine any follow up actions. The Non-Executive Directors are also

not limited in their oversight to specific business operations.

The resources used by the Non-Executive Directors in their role of challenging the business include:

- Full and unhindered access to the business, which involves the receipt of detailed presentations given by business or control functions;
- Administrative support in the form of an assistant for the Chairman and office facilities on the executive floor of Citigroup's London offices in Canary Wharf for UK-based Non-Executive Directors; and
- Technical training in the form of Board tutorials. These regular tutorials cover a wide range of subjects including but not limited to capital and liquidity requirements, client assets and client money regulations, anti-money laundering rules, regulation relating to anti-bribery and corruption, and recovery and resolution planning.

Diversity
The Board of Directors of Citigroup Global Markets Limited (Board) is committed to identifying and appointing the best qualified people to serve on the Board and to ensuring that the Board is comprised of individuals whose backgrounds reflect the diversity represented by our employees, customers and stakeholders. Effective December 2017 the CGML Diversity with the Management Body Policy was published and made publicly available through Citi's UK page as follows:

http://www.citigroup.com/citi/about/countrypresence/united-kingdom.html

Non-Executive Directors of CGML

Cyrus Ardalan (Chairman) Number of Directorships Held: 4

Cyrus Ardalan has worked in senior roles and has extensive financial services and regulatory experience extending over 40 years in the industry in both an executive and non-executive capacity.
Cyrus was appointed as Chairman of CGML in 2017. In addition to his role at Citi, Cyrus is a Chairman of the Board for Oaknorth bank from 2015 to present. Cyrus is also a board member for the charity organisation International Finance Facility For Immunisation from 2012 to present and Independent Portfolio Management from 2017to present. Previous board memberships include Dubai International Financial Centre from 2004-2009 where he was member of the board and from 2011 to 2015 Cyrus was Chairman of the Board within the International Capital Markets Association.

Susan Dean. Number of Directorships Held: 3

Susan Dean is the Chair of the CGML audit committee and is a member of CGML's Risk Committee; Remuneration Committee and Nominations Committee. In March 2016 Susan was appointed to the board of Citibank Europe plc (CEP) and also become a member of the CEP Risk Committee and in September 2016 Susan was appointed as Chair of the Board of CEP.
From 2009 - 2011 Susan was Global CFO for Citi's Institutional Client businesses, prior to this, positions held include EMEA CFO for the Citigroup franchise including Consumer, EMEA CFO for Institutional businesses, European CFO and Head of Operations and Technology for European Institutional Businesses.

Diana Taylor. Number of Directorships Held: 6

Diana Taylor has been an independent director of Citigroup Inc. since July 2009. As well as being Vice Chair of Solera Capital LLC, Diana holds directorships at both Brookfield Asset Management and Sotheby's.

From 2007 to 2014 Diana was managing director of Wolfensohn Fund Management L.P. Prior to this 2003 to 2007, she served as Superintendent of Banks of New York State Banking Department, where she also oversaw the regulation of the mortgage industry, and money service businesses. Diana served as Governor Pataki's Deputy Secretary for Finance and Housing between 1996 and 1999. Other previous roles included several years in the energy business, first as Vice President of KeySpan Energy and then as Chief Financial Officer at the Long Island Power Authority. She was a founding partner and president of M.R. Beal & Company.

Diana started her career as an investment banker with Smith Barney, followed by roles with Lehman Brothers and Donaldson Lufkin & Jenrette.

Richard Goulding. Number of Directorships Held: 5

Richard Goulding joined Citi as a non-executive director in 2016.
In addition to his role at Citi Richard holds directorships at RFG Consulting Limited and Park Avenue Freehold Limited.
Richard Goulding was Group Chief Risk Officer and Director at Standard Chartered Bank London and Singapore from 2002-2015.

Executive Directors of CGML

James (Jim) Cowles. Number of Directorships Held: 1

Jim Cowles was named Citi's Chief Executive Officer for Europe, Middle East & Africa (EMEA) in January 2013. Prior to assuming his current position, he was Chief Operating Officer for EMEA and Head of Western Europe at Citi. He has also served as Head of Markets for Citi in EMEA, Global Head of Equities and Global Head of Equity Capital Markets.

Jim joined Smith Barney in 1979. Other previous roles have included: Head of Equities (EMEA), Deputy Head of Investment Banking, Head of Real Estate Investment Banking and Commercial Mortgage Trading, Head of Debt Capital Markets and Head of Direct Investments.

Peter McCarthy. Number of Directorships Held: 4

Peter McCarthy was appointed Citi's Chief Administrative Officer for EMEA in February 2012. He has spent 31 years in various management roles at Citi including CAO of Citi's Markets business in EMEA. Prior to joining Citi, Peter spent 6 years working in the European Financial Control division of Merrill Lynch.

James Bardrick (Director and Chief Executive Officer of CGML).Number of Directorships Held: 4

James Bardrick is Citi's Country Officer for the United Kingdom.
James is a Business Senior Credit Officer and has been with the firm for 31 years. During this time he has developed a broad experience of global client relationship management and coverage as well as providing strategic and transaction advice through many advisory, equity and debt financing transactions. Prior to joining Citi, James worked as an engineer and in marketing for GKN PLC and for Tomkins PLC.

Leo Arduini. Number of Directorships Held: 3

Leo Arduini is EMEA Head of Markets & Securities Services from April 2014. Leo has 25 years' experience in various positions across Citi. Other appointments at Citi include Head of EMEA Global Investor Sales from 2012 to 2014 and Citi Country Officer Italy from 2010 to 2013.

15.2. Appendix 2: 2017 Unencumbered Asset

Template A-Assets		Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of unencumbered assets	Fair value of unencumbered assets
		$m	$m	$m	$m
010	**Assets of the reporting institution**	66,551		295,333	
030	Equity instruments	17,831	17,831	4,733	4,733
040	Debt securities	30,704	30,704	2,345	2,345
120	Other assets	18,016		288,255	

Template B-Collateral received		Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance
		$m	$m
130	**Collateral received by the reporting institution**	218,691	34,156
150	Equity instruments	55,676	4,615
160	Debt securities	161,813	29,268
230	Other collateral received	1,203	273
240	Own debt securities issued other than own covered bonds or ABSs	-	-

Template C-Encumbered assets/collateral received and associated liabilities		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
		$m	$m
010	**Carrying amount of selected financial liabilities**	268,052	157,990

As at 31 December 2017, the carrying value of assets on CGML's consolidated UK GAAP Balance sheet was $361.9bn. This included approximately 9% debt securities, 6% equity instruments, and 85% Other assets. Of the total amount, approximately 18% or $66.5bn is considered to be encumbered. Assets are considered encumbered when they have been pledged or used to secure, collateralise or credit enhance a transaction which impacts their transferability and free use.
Unencumbered other assets primarily relates to derivative instruments which cannot be encumbered under UK GAAP, and receivables related to secured financing assets.

CGML also receives cash and securities collateral from on/off balance sheet secured financing transactions including reverse repos, stock borrows, prime brokerage margin loans, and also derivatives. The fair value of collateral received from these transactions was $252.8bn. This included 75.6% debt securities, 23.8% equity instruments, and 0.6% Other collateral. Of the total amount, approximately 86% or $218bn of total cash and securities collateral received is considered to be encumbered.

Sources of encumbrance for both assets and securities collateral received include secured financing transactions such as repo and stock lending as well as customer and firm short position coverage and derivative margining.

Encumbrance plays an essential role in the funding and liquidity management of CGML through its secured financing, derivative and customer activities, and as such encumbrance levels are monitored and managed appropriately. The level of encumbrance related to transactions with other members within the group is immaterial considering the level of total encumbrance.

CGML primarily uses standard collateral agreements such as Credit Support Annexes ("CSA") and Global Master Repurchase Agreements ("GMRAs") and collateralises at appropriate levels in line with industry standards.

The data provided represents balances at 31 December 2017.

15.3. Appendix 3: 2016 Unencumbered Asset

Template A-Assets

		Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of unencumbered assets	Fair value of unencumbered assets
		$m	$m	$m	$m
010	**Assets of the reporting institution**	59,231		269,353	
030	Equity instruments	13,266	13,266	1,565	1,565
040	Debt securities	19,764	19,764	1,855	1,855
120	Other assets	26,201		265,933	

Template B-Collateral received

		Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance
		$m	$m
130	**Collateral received by the reporting institution**	170,392	18,888
150	Equity instruments	29,766	889
160	Debt securities	136,961	17,343
230	Other collateral received	3,665	656
240	Own debt securities issued other than own covered bonds or ABSs	-	-

Template C-Encumbered assets/collateral received and associated liabilities

		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
		$m	$m
010	**Carrying amount of selected financial liabilities**	235,113	104,545

As at 30 December 2016, the carrying value of assets on CGML's UK GAAP Balance sheet was $328.5bn. This included approximately 7% debt securities, 5% equity instruments, and 89% Other assets. Of the total amount, approximately 18% or $59.2bn is considered to be encumbered. Assets are considered encumbered when they have been pledged or used to secure, collateralise or credit enhance a transaction which impacts their transferability and free use.

CGML also receives cash and securities collateral from on/off balance sheet secured financing transactions including reverse repos, stock borrows, prime brokerage margin loans, and also derivatives. The fair value of collateral received from these transactions was $189bn. This included 82% debt securities, 16% equity instruments, and 2% Other collateral. Of the total amount, approximately 90% or $170bn of total cash and securities collateral received is considered to be encumbered.
Sources of encumbrance for both assets and securities collateral received include secured financing transactions such as repo and stock lending as well as customer and firm short position coverage and derivative margining.
Encumbrance plays an essential role in the funding and liquidity management of CGML through its secured financing, derivative and customer activities, and as such encumbrance levels are monitored and managed appropriately. The level of encumbrance related to transactions with other members within the group is immaterial considering the level of total encumbrance.

CGML primarily uses standard collateral agreements such as Credit Support Annexes ("CSA") and Global Master Repurchase Agreements ("GMRAs") and collateralises at appropriate levels in line with industry standards.

The data provided represents balances at 30 December 2016.

15.4. Appendix 4: Scope of consolidation (Entity by entity)

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

		Method of regulatory consolidation				
Name of the entity	Method of accounting consolidation	Full consolidation	Proportional consolidation	Neither consolidated nor deducted	Deducted	Description of the entity
Citigroup Global Markets Limited (CGML)	Full consolidation	X				Investment Firm
Citi Global Wealth Management Societe Anonyme Monegasque (SAM) (Monaco)	Not consolidated				X	Investment Firm
Citigroup Global Markets Luxembourg SARL	Not consolidated				X	Investment Firm
Citigroup Global Markets Funding Luxembourg SCA	Full consolidation	X				Investment Firm
Citigroup Global Markets Funding Luxembourg GP SARL	Not consolidated				X	Investment Firm

15.5. Appendix 5: Capital Instruments main features template

The template is prepared using the format set out in Annex II of the final 'Implementing technical standards with regard to disclosure of own funds requirements for institutions' (Commission implementing regulation- EU 1423/2013).

	Capital Instruments main features template	CET1	AT1	Tier 2	Tier 2	Tier 2
1	Issuer	Citigroup Global Markets Limited	Citigroup Global Markets Limited	Citigroup Global Markets Limited	Citigroup Global Markets Limited	Citigroup Global Markets Limited
2	Unique identifier (e.g. CUSIP, ISIN or Bloomberg identifier for private placement)	Private Placement	Private Placement	Private placement	Private placement	Private placement
3	Governing law(s) of the instrument	English Law	English Law	English Law	English Law	English Law
Regulatory Treatment						
4	Transitional CRR rules	CET1	AT1	T2	T2	T2
5	Post-transitional CRR rules	CET1	AT1	T2	T2	T2
6	Eligible at solo/(sub-)consolidated/ solo & (sub-)consolidated	Solo and consolidated	Solo and consolidated	Solo and consolidated	Solo and consolidated	Solo and consolidated
7	Instrument type (types to be specified by each jurisdiction)	Ordinary shares	Perpetual Notes	Subordinated Loans	Subordinated Loans	Subordinated Loans
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	USD 1,500m	USD 1800	USD 661m	USD 1,201m	USD 2,150m
9	Nominal amount of instrument	USD 1.00	USD 1800	USD661m EUR 550m	USD 1,201m EUR 1,000m	USD 2,150m
9a	Issue Price	USD 1.00	USD 1800	EUR 550m	EUR 1,000m	USD 2,150m
9b	Redemption price	USD 1,500m	USD 1800	EUR 550m	EUR 1,000m	USD 2,150m
10	Accounting classification	Shareholder's equity	Liability - Fair value option	Liability - Fair value option	Liability - Fair value option	Liability - Fair value option
11	Original date of issuance	21/12/1995	20/06/2017	28/10/2016	22/11/2016	22/11/2016
12	Perpetual or dated	Perpetual	Perpetual	Dated	Dated	Dated
13	Original maturity date	no maturity	20/06/2022	22/05/2024	22/05/2024	22/05/2024
14	Issuer call subject to prior supervisory approval	No	No	No	No	No
15	Optional call date, contingent call dates and redemption amount	N/A	N/A	N/A	N/A	N/A
16	Subsequent call dates, if applicable	N/A	N/A	N/A	N/A	N/A
Coupons/dividends						
17	Fixed or floating dividend/coupon	Floating	Floating	Floating	Floating	Floating
18	Coupon rate and related index	Discretionary	7.30%	0.812% 3mth Euribor + Sub fee + Tax Handling	0.69430% 3mth Euribor + Sub fee + Tax Handling	2.325% Fed Funds + WC1 + Sub Fee + Tax handling
19	Existence of a dividend stopper	No	No	No	No	No
20 a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully discretionary	Fully discretionary	Mandatory	Mandatory	Mandatory
20 b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully discretionary	Fully discretionary	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No	No	No
22	Noncumulative or cumulative	Non-cumulative	Non-cumulative	N/A	N/A	N/A
23	Convertible or non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible
24	If Convertible, conversion trigger(s)	N/A	N/A	N/A	N/A	N/A
25	If Convertible, fully or partially	N/A	N/A	N/A	N/A	N/A
26	If Convertible, conversion rate	N/A	N/A	N/A	N/A	N/A
27	If Convertible, mandatory or optional conversion	N/A	N/A	N/A	N/A	N/A
28	If Convertible, specify instrument type convertible into	N/A	N/A	N/A	N/A	N/A
29	If Convertible, specify issuer of instrument it converts into	N/A	N/A	N/A	N/A	N/A
30	Write-down features	No	No	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A	N/A	N/A
32	If write-down full or partial	N/A	N/A	N/A	N/A	N/A
33	If write-down permanent or temporary	N/A	N/A	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation (specify instrument type senior to instrument)	As common equity, immediately subordinate to the instruments in the following three columns.	Notes constitute direct, unsecured and subordinated obligations of the Issuer	Immediately subordinate to senior unsecured obligations of the issuer	Immediately subordinate to senior unsecured obligations of the issuer	Immediately subordinate to senior unsecured obligations of the issuer
36	Non-compliant transitioned features	No	No	No	No	No
37	If yes, specify non-compliant features	N/A	N/A	N/A	N/A	N/A

15.6. CRD IV reference

CRR REF	Summary	Compliance Reference
Article 431: Scope of disclosure requirements		
431 (1)	Requirement to publish Pillar 3 disclosures	CGML publishes Pillar 3 disclosures
431 (2)	Firms with permission to use specific operational risk methodologies must disclose operational risk information.	Section 2.5 describes CGML's operational risk framework and requirements for Pillar 3.
431 (3)	Institutions must adopt a policy for assessing the appropriateness of their disclosures, verification and frequency. Institutions shall also have policies for assessing whether their disclosures convey their risk profile comprehensively to market participants.	CGML has a dedicated Pillar 3 policy
431 (4)	Explanation of ratings decision upon request	Not Applicable
Article 432: Non-material, proprietary or confidential information		
432 (1)	Institutions may omit one or more of the disclosures that is not material if certain conditions are met.	Compliance with this provision is covered by CGML Policy.
432 (2)	Institutions may also omit one or more items of information included in the disclosures if those items include information which is regarded as proprietary or confidential if certain conditions are met.	
432 (3)	Where 432 (1) and (2) apply this must be stated in the disclosures, and more general information must be disclosed.	
432 (4)	Use of 432 (1) or (2) is without prejudice to scope of liability for failure to disclose material information	
Article 433: Frequency of disclosure		
433	Disclosures must be published at least on an annual basis and in conjunction with the date of publication of the financial statements.	CGML publishes Pillar 3 disclosures on a quarterly basis.
Article 434: Means of disclosures		
434 (1)	To provide all disclosures in one medium or location or provide clear cross reference.	The disclosures are published to the CGML Investor Relations website. Signposting within the disclosure directs the reader to other publications as relevant.
434 (2)	Disclosures made under other requirements (e.g. accounting) can be used to satisfy Pillar 3 if appropriate.	Signposting within the financial statements directs the reader to these disclosures.
Article 435: Risk management objectives and policies		
435 (1)	Disclose information on:	
435 (1) (a)	The strategies and processes to manage those risks.	Section 2: Risk Management and governance "2.1.4. Risk Management Model and Policies"
435 (1) (b)	The structure and organisation of the risk management function	Section 2: Risk Management and governance "2.1.5. Risk Management Responsibilities" and "2.1.6. Governance Forums and Committees"
435 (1) (c)	The scope and nature of risk reporting and measurement systems	Section 2: Risk Management and governance "2.2.3. Credit Risk Measurement" "2.3.3. Market Risk Measurement" "2.5.2. Measurement of Operational Risk"
435 (1) (d)	The policies for hedging and mitigating risk.	Section 2: Risk Management and governance "2.3.1. Market Risk Limit Framework"
435 (1) (e)	A declaration approved by the management body on the adequacy of risk management arrangements of the institution providing assurance that the risk management systems put in place are adequate with regard to the institution's profile and strategy	Section 2: Risk Management and governance "2.1.9. Risk Management Infrastructure"
435 (1) (f)	Concise risk statement approved by the management body.	Section 2: Risk Management and governance "2.1.2. Risk Appetite Framework"
435 (2)	Information on governance arrangements, including information on Board composition and recruitment, and risk committees.	
435 (2) (a)	The number of directorships held by members of the management body.	15.1. Appendix 1: UK Senior Management and Board Disclosures - "Board Composition, Role and Effectiveness"
435 (2) (b)	The recruitment policy for the selection of members of the management body and their actual knowledge, skills and expertise.	
435 (2) (c)	The policy on diversity with regard to selection of members of the management body and targets achieved.	15.1. Appendix 1: UK Senior Management and Board Disclosures - "Diversity"
435 (2) (d)	Disclosure whether or not the institution has set up a separate risk committee and the number of times the risk committee has met.	Section 2: Risk Management and governance "2.1.6.1 CGML Risk Committee"
435 (2) (e)	The description of the information flow on risk to the management body	Section 2: Risk Management and governance "Section 2.1.6. Governance Forums and Committees"
Article 436: Scope of application		
436 (a)	Name of institution	Section 1 "1. Introduction to Citigroup Global Markets Limited"

436 (b)	Difference in the basis of consolidation for accounting and prudential purposes, with a brief description of the entities, explaining whether:	Section 1 - 1. Introduction to Citigroup Global Markets Limited "Figure 1: Extract from UK Organisation Chart as at 31 December 2017" "Figure 2: Subsidiaries of CGML as at 31 December 2017"
436 (b) (i)	Fully consolidated.	15.4. Appendix 4: Scope of consolidation (Entity by entity) "LI3: Outline of the differences in the scopes of consolidation (entity by entity)"
436 (b) (ii)	Proportionally consolidated.	
436 (b) (iii)	Deducted from Own Funds.	
436 (b) (iv)	Neither consolidated nor deducted.	
436 (c)	Impediments to transfer of own funds or repayment of liabilities between parent and subsidiaries.	Section 1.1. Overview of Pillar 3 Disclosures
436 (d)	The aggregate amount of capital shortfalls in all subsidiaries not included in the consolidation, and the name or names of such subsidiaries	Not Applicable
436 (e)	If applicable, the circumstance of making use of the provisions laid down in Articles 7 and 9	Not Applicable
Article 437: Own funds		
437 (1)	Disclose the following information regarding their own funds:	
437 (1) (a)	Disclosure requirements regarding capital resources table	Section 4 "Own Funds" 15.5. Appendix 5 "Capital Instruments main features template"
437 (1) (b)		
437 (1) (c)		
437 (1) (d)		
437 (1) (d) (i)		
437 (1) (d) (ii)		
437 (1) (d) (iii)		
437 (1) (e)	A description of all restrictions applied to the calculation of own funds.	Not Applicable
437 (1) (f)	Where institutions disclose capital ratios calculated using elements of own funds determined on a different basis.	
437 (2)	EBA to publish implementing technical standards to specify uniform templates for disclosure above	Barclays follows the implementation standards.
Article 438: Capital requirements		
438 (a)	Summary of the institution's approach to assessing the adequacy of its internal capital to support current and future activities.	Section 5: Capital Requirements and Buffers.
438 (b)	The result of the institution's internal capital adequacy assessment process (ICAAP) upon demand from the relevant competent authority.	CGML has not received any demand.
438 (c)	Capital requirements for Credit risk for each standardised approach exposure class.	Section 7: Credit Risk and General Information on CRM Section 8: Credit Risk and CRM in the Standard Approach
438 (d)	Capital requirement amounts for credit risk for each Internal Ratings Based Approach exposure class.	Not Applicable
438 (d) (i)		
438 (d) (ii)		
438 (d) (iii)		
438 (d) (iv)		
438 (e)	Capital requirements for market risk, large exposures where they exceed limits, to the extent an institution is permitted to exceed those limits and settlement risk for each standardised approach exposure class.	Section 10: Market Risk Table 6: OV1 - Overview of RWAs In addition, these risks are discussed in Section 2: 2. Risk Management and Governance.
438 (f)	Capital requirement amounts for Operational Risk, disclosed separately for the Basic Indicator Approach, Standardised Approach and Advanced Measurement Approach, as applicable.	Section 2.5: Operational Risk Management Table 6: OV1 - Overview of RWAs
438	Requirement to disclose specialised lending exposures and equity exposures in the banking book, falling under the simple risk weight approach.	Not Applicable

Article 439: Exposure to counterparty credit risk		
439 (a)	Discussion of the methodology used to assign internal capital and credit limits for counterparty credit exposures.	Section 2.2: Credit Risk Management
439 (b)	Discussion of policies for securing collateral and establishing credit reserves.	Section 2.2.5: Collateral Management
439 (c)	Discussion of policies with respect to wrong-way risk exposures.	Section 2.2.6: Wrong Way Risk
439 (d)	Discussion of the impact of the amount of collateral the institution would have to provide given a downgrade in its credit rating.	Section 2.2.7: Credit Rating Downgrade
439 (e)	Derivation of net derivative credit exposure.	Section 9. Counterparty Credit Risk Table 32: CCR5-A - Impact of netting and collateral held on exposure values
439 (f)	Exposure values for mark-to-market, standardised and internal model methods, whichever method is applicable.	Section 9. Counterparty Credit Risk Table 27: CCR1: Analysis of CCR exposure by approach
439 (g)	Notional value of credit derivative hedges, and the distribution of current credit exposure by types of credit exposure.	Section 9. Counterparty Credit Risk Table 34: CCR6: Credit derivatives exposures
439 (h)	Notional amounts of credit derivative transactions, segregated between own credit portfolio, intermediation activities, including the distribution of the credit derivatives products used by protection bought and sold within each product group.	
439 (i)	Estimate of Alpha (α) if applicable.	The alpha used by CGML is 1.4. Section 9. Counterparty Credit Risk Table 27: CCR1: Analysis of CCR exposure by approach
Article 440: Capital buffers		
440 (1) (a)	Geographical distribution of its credit exposures relevant for the calculation of countercyclical capital buffer.	Section 5.1: Capital Buffers Table 7: Geographical distribution of countercyclical capital buffer
440 (1) (b)	Amount of institution specific countercyclical capital buffer.	
Article 441: Indicators of global systemic importance		
441 (1)	Disclosure of the indicators of global systemic importance	Not Applicable
441 (2)	EBA will issue implementing technical standards to specify the uniform formats for the purposes of the disclosure of 441 (1).	
Article 442: Credit risk adjustments		
442 (a)	Definitions for accounting purposes of 'past due' and 'impaired'.	Section 7: Credit Risk and General Information on CRM
442 (b)	Description of the approaches and methods adopted for determining specific and general credit risk adjustments.	
442 (c)	Disclosure of total amount of exposures pre credit risk mitigation, and the average amount of the exposures over the period broken down by different types of exposure classes.	Section 7: Credit Risk and General Information on CRM Table 11: CRB-B - Total and average net amount of exposures Table 15: CR1-A - Credit quality of exposures by exposure class and instrument
442 (d)	Geographic distribution of the exposures, broken down in significant areas by material exposure classes.	Section 7: Credit Risk and General Information on CRM Table 12: CRB-C - Geographical breakdown of exposures
442 (e)	Distribution of the exposures by industry or counterparty type, broken down by exposure classes, including specifying exposure to SMEs.	Section 7: Credit Risk and General Information on CRM Table 13: CRB-D - Concentration of exposures by industry
442 (f)	Residual maturity breakdown of all the exposures, broken down by exposure classes.	Section 7: Credit Risk and General Information on CRM Table 14: CRB-E: Maturity of exposures
442 (g) 442 (g) (i) 442 (g) (ii) 442 (g) (iii)	Breakdown of impaired, past due, specific and general credit adjustments, and impairment charges for the period, by significant industry or counterparty type.	Not Applicable
442 (h)	Amount of the impaired exposures and past due exposures, provided separately, broken down by significant geographical areas including, if practical, the amounts of specific and general credit risk adjustments related to each geographical area.	Section 7: Credit Risk and General Information on CRM Table 16: CR1-B: Credit quality of exposures by industry or counterparty types
442 (i) 442 (i) (i) 442 (i) (ii) 442 (i) (iii) 442 (i) (iv) 442 (i) (v)	Reconciliation of changes in the specific and general credit risk adjustments for impaired exposures, shown separately	Not Applicable
442 (end note)	Specific credit risk adjustments and recoveries recorded directly to the income statement shall be disclosed separately	Not Applicable

Article 443: Unencumbered assets		
443	Disclosures on unencumbered assets	Section 15.2: Appendix 2: 2017 Unencumbered Asset
Article 444: Use of ECAIs		
444 (a)	Names of the nominated ECAIs and ECAs and the reasons for any changes.	Section 8.1: Use of external credit ratings under the standardised approach for credit risk Table 23: Credit quality assessment scale Table 24: Simplified summary of risk weightings by Credit Quality Step
444 (b)	Exposure classes for which each ECAI or ECA is used.	
444 (c)	Description of the process used to transfer the issuer and issue credit assessments onto items not included in the trading book.	
444 (d)	Mapping of external rating to credit quality steps	
444 (e)	Exposure values and the exposure values post credit risk mitigation associated with each credit quality step as well as those deducted from own funds.	Section 8.1: Use of external credit ratings under the standardised approach for credit risk Table 26: CR5 - Standardised approach - Risk Weighted
Article 445: Exposure to market risk		
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	Section 10: Market Risk
Article 446: Operational risk		
446	Disclosure of the scope of approaches used to calculate operational risk, discussion of advanced methodology and external factors considered.	Section 2.5: Operational Risk Management
Article 447: Exposures in equities not included in the trading book		
447 (a)	Differentiation between exposures based on their objectives.	Section 14.2: Non-Trading Book Equity Exposures
447 (b)	Balance sheet value, the fair value and, for those exchange-traded, a comparison to the market price where it is materially different from the fair value.	
447 (c)	Types, nature and amounts of exchange-traded exposures, private equity exposures in sufficiently diversified portfolios, and other exposures.	
447 (d)	Cumulative realised gains or losses arising from sales and liquidations in the period.	
447 (e)	Total unrealised gains or losses, the total latent revaluation gains or losses, and any of these amounts included in the original or additional own funds.	Not Applicable
Article 448: Exposure to interest rate risk on positions not included in the trading book		
448 (a)	Nature of the interest rate risk and the key assumptions and frequency of measurement of the interest rate risk.	Section 14.3: Interest Rate Risk in the Non-Trading Book
448 (b)	Variation in earnings, economic value or other relevant measure used by the management for upward and downward rate shocks by interest rate risk and currency.	Not Applicable
Article 449: Exposure to securitisation positions		
449 (a)	Institution's objectives in relation to securitisation activity.	Section12: Securitisation Activity
449 (b)	Nature of other risks including liquidity risk inherent in securitised assets	Section12: Securitisation Activity
449 (c)	Type of risks in terms of seniority of underlying securitisation positions and in terms of assets underlying those latter securitisation positions assumed and retained with re- securitisation activity.	Section12: Securitisation Activity
449 (d)	Different roles played by the institution in the securitisation process	Section12: Securitisation Activity
449 (e)	Indication of the extent of the institution's involvement in each of the roles referred to in point (d)	Section12: Securitisation Activity
449 (f)	Description of the processes in place to monitor changes in the credit and market risk of securitisation exposures including, how the behaviour of the underlying assets impacts securitisation exposures and a description of how those processes differ for re-securitisation exposures.	Section12: Securitisation Activity
449 (g)	Description of the policy governing the use of hedging and unfunded protection to mitigate the risks of retained securitisation and re-securitisation exposures, by type of risk exposure.	Section12: Securitisation Activity
449 (h)	Approaches to calculating risk weighted exposure amounts that the institution follows for its securitisation activities including the types of securitisation exposures to which each approach applies.	Section12: Securitisation Activity
449 (i)	Types of SSPE used to securitise third-party exposures as well as a list of the SSPEs.	Not Applicable

449 (j)	Summary of the institution's accounting policies for securitisation activities, including;	
449 (j) (i)	Whether the transactions are treated as sales or financings	
449 (j) (ii)	Recognition of gains on sales	
449 (j) (iii)	Methods, key assumptions, inputs and changes from the previous period for valuing securitisation positions.	
449 (j) (iv)	Treatment of synthetic securitisations if not covered by other accounting policies.	
449 (j) (v)	How assets awaiting securitisation are valued and whether they are recorded in the institution's non- trading book or the trading book.	
449 (j) (vi)	Policies for recognising liabilities on the balance sheet for arrangements that could require the institution to provide financial support for securitised assets.	12.3 Accounting Policies for Securitisation Activity in the Trading Book (IFRS)
449 (k)	Names of the ECAIs used for securitisations and the types of exposure for which each agency is used.	
449 (l)	Full description of Internal Assessment Approach.	
449 (m)	Explanation of changes in quantitative disclosures.	Not Applicable
449 (n) (i)	Amount of outstanding exposures securitised;	Not Applicable
449 (n) (ii)	On balance sheet securitisation retained or purchased; and off-balance sheet exposures;	Table 42: Capital Treatment applied to book securitisation positions
449 (n) (iii)	Amount of assets awaiting securitisation;	
449 (n) (iv)	Early amortisation treatment; aggregate drawn exposures, capital requirements	Not Applicable
449 (n) (v)	Amount of securitisation positions that are deducted from own funds or risk-weighted at 1 250 %;	Table 4 : Own funds disclosure template
449 (n) (vi)	Summary of the securitisation activity of the current period, including the amount of exposures securitised and recognised gain or loss on sale.	
449 (o) (i)	Aggregate amount of securitisation positions retained or purchased and the associated capital requirements by securitisation and re-securitisation exposures and by risk-weight or capital requirement bands, for each capital requirements approach used.	Table 42: Capital Treatment applied to book securitisation positions
449 (o) (ii)	Aggregate amount of re-securitisation exposures retained or purchased by exposure before and after hedging/insurance and the exposure to financial guarantors, broken down according to guarantor credit worthiness categories or guarantor name.	Not Applicable
449 (p)	Amount of impaired/past due assets securitised and the losses recognised broken down by exposure type for the non-trading book.	Not Applicable
449 (q)	Total outstanding exposures securitised by the institution and subject to a capital requirement for market risk, broken down into traditional/ synthetic and by exposure type for the trading book.	Not Applicable
449 (r)	Whether the institution has provided financial support to securitisation vehicles.	Not Applicable
Article 450: Remuneration policy		
450	Disclosure on remuneration.	Section 13: 2017 Remuneration Statement
Article 451 Leverage		
451 (1) (a)	Leverage ratio calculation.	Section 6: Leverage Table 9: Leverage ratio common disclosure Table 8 - Summary reconciliation of accounting assets and leverage ratio exposures
451 (1) (b)	Breakdown of the total exposure measure as well as a reconciliation of the total exposure measure with the relevant information disclosed in published financial statements.	
451 (1) (c)	Amount of derecognised fiduciary items where applicable.	Not Applicable
451 (1) (d)	Description of the processes used to manage the risk of excessive leverage	Section 6.1: Management of Leverage Risk
451 (1) (e)	Description of the factors that had an impact on the leverage ratio during the period to which the disclosed leverage ratio refers.	Table 9: Leverage ratio common disclosure
451 (2)	EBA to publish implementing technical standards to determine the uniform disclosure template for the disclosure referred to in paragraph 1 and the instructions on how to use such template.	CGML follows the implementation standards

Article 452: Use of the IRB Approach to credit risk		
452	Permission for use of the IRB approach from authority	Not Applicable
Article 453: Use of credit risk mitigation techniques		
453 (a)	Policies and processes for the extent to which the entity makes use of, on- and off- balance sheet netting;	
453 (b)	Policies and processes for collateral valuation and management;	
453 (c)	Description of the main types of collateral taken by the institution;	7.2: Credit Risk Mitigation
453 (d)	Main types of guarantor and credit derivative counterparty and their creditworthiness;	Not Applicable
453 (e)	Information about market or credit risk concentrations within the credit mitigation taken;	7.2: Credit Risk Mitigation
453 (f)	For exposures under either the Standardised or Foundation IRB approach, disclose the exposure value covered by eligible collateral	Not Applicable
453 (g)	Exposures covered by guarantees or credit derivatives	Table 22: CR3 - CRM techniques – Overview
Article 454: Use of the Advanced Measurement Approaches to operational risk		
454	Description of the use of insurance or other risk transfer mechanisms to mitigate operational risk for institutions using the Advanced Measurement Approaches.	Section 2.5.2: Measurement of Operational Risk
Article 455: Use of Internal Market Risk Models		
455 (a)	Disclosure of the characteristics of the market risk models.	
455 (a) (i)	Characteristics of the models used	
455 (a) (ii)	Disclosure of the methodologies used to measure incremental default and migration risk.	
455 (a) (iii)	Description of stress testing applied to the sub-portfolio	
455 (a) (iv)	Description of the approaches used for back-testing and validating the accuracy and consistency of the internal models and modelling processes;	
455 (b)	Scope of permission by the competent authority.	
455 (c)	Description of the extent and methodologies for compliance with exposures included in the trading book and requirements for prudent valuation.	Section 10: Market Risk
455 (d)		
455 (d) (i)		
455 (d) (ii)		
455 (d) (iii)	High/Low/Mean values over the year of VaR, SVaR, all-price risk measure and incremental risk charge.	Section 10: Market Risk Table 38: MR3 - IMA values for trading portfolios
455 (e)	The elements of the own fund calculation.	Section 10: Market Risk Table 36: MR2-A - Market risk under the IMA
455 (f)	Weighted average liquidity horizon for each sub-portfolio covered by the models for incremental default and migration risk and for correlation trading.	10.3. Incremental Risk Charge
455 (g)	Comparison of the daily end-of-day VaR measures to the one-day changes of the portfolio's value by the end of the subsequent business day together with an analysis of any important overshooting during the reporting period	Table 39: MR4 - Comparison of VaR estimates with gains/losses

16. Glossary

ABS	Asset Backed Securities
ALCO	Asset and Liability Committee
AMA	Advanced Measurement Approach
BPC	Business Practices Committee
BRCC	Business Risk and Control Committee
BSST	Business Specific Stress Test
CAP	Capital Accumulation Programme
CAT	Capital Action Trigger
CCP	Central Counterparty Clearing House
CCyB	Countercyclical buffer
CDS	Credit Default Swap
CEM	Current Exposure Method
CEO	Chief Executive Officer
CEP	Citigroup Europe PLC
CET 1	Common Equity Tier 1
CFO	Chief Finance Officer
CFP	Contingency Funding Plan
CGML	Citigroup Global Markets Limited
CIC	Cyber Intelligence Centre
CMO	Capital Markets Origination
CORA	Credit and Operational Risk Analytics
CRD	Capital Requirements Directive
CRE	Commercial Real Estate
CRMR	Citi Risk Market Risk
CRO	Chief Risk Officer
CSA	Credit Support Annex
CVA	Credit Valuation Adjustment
DIRAP	Discretionary Incentive and Retention Award Plan
DPAC	Distribution Product Approval Committee
EAD	Exposure at Default
EBA	European Banking Authority
ECAI	External Credit Assessment Institution
EEA	European Economic Area
EMEA	Europe, Middle East and Africa
EPE	Expected Positive Exposure
ETDs	Exchange Traded Derivatives
EU	European Union
EUSTA	EU Short-Term Award
FCA	Financial Conduct Authority

FLP	Funding and Liquidity Plan
FRR	Facility Risk Rating
FVA	Funding Valuation Adjustments
FX	Foreign Exchange
G10	Group of Ten (refers to the countries that have agreed to participate in the General Arrangements to Borrow (GAB))
GAAP	Generally Accepted Accounting Principles
GCB	Global Consumer Banking
GIS	Global Information Security
GSM	Global Securitised Markets
GSP	Global Securitised Products
GSST	Global Systemic Stress Test
IAS	International Accounting Standard
ICAAP	Internal Capital Adequacy Assessment Process
ICG	Institutional Clients Group
IFRS	International Financial Reporting Standards
ILG	Individual Liquidity Guidance
IM	Initial Margin
IMA	Internal Model Approach
IMM	Internal Models Method
IPB	International Personal Bank
IPR	Investments Products Risk
IRC	Incremental Risk Charge
IRE	Interest Rate Exposure
ISDA	International Swaps and Derivatives Association
KBRCC	UK Business Risk and Control Committee
KEPSP	Key Employee Profit Sharing Plan
KOR	Key Operational Risks
KRI	Key Risk Indicators
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LIBOR	London Interbank Offered Rate
MCA	Manager’s Control Assessment
MLE	Material Legal Entity
MPAC	Manufacturing Product Approval Committee
MRT	Material Risk Takers
NIR	Net Interest Revenue
NPAC	New Product Approval Committee
NRI	Non-Resident Indian
NSFR	Net Stable Funding Ratio
OCI	Other Comprehensive Income

OIS	Overnight Indexed Swap
ORM	Operational Risk Management
ORR	Obligor Risk Rating
OTC	Over The Counter
P&C	Personnel and Compensation
PBV	Performance Based Vesting
PD	Probability of Default
PRA	Prudential Regulation Authority
PRR	Position Risk Requirement
PSE	Pre-Settlement Exposures
PSU	Performance Share Units
RBA	Role-Based Allowances
RemCo	Remuneration Committee
RLAP	Resolution Liquidity Adequacy Positioning
RMBS	Residential Mortgage Backed Securities
RWA	Risk Weighted Assets
SFT	Securities Financing Transaction
SVaR	Stressed Value at Risk
TFA	Total Facilities Amount
TTS	Treasury and Trade Solutions
VaR	Value at Risk
VM	Variation Margin
WWR	Wrong Way Risk