J.P. MORGAN CAPITAL HOLDINGS LIMITED
(Registered Number: 03871969)

Consolidated annual report for the year ended 31 December 2016

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J.P. MORGAN CAPITAL HOLDINGS LIMITED
Strategic report

The directors present their Strategic report of J.P. Morgan Capital Holdings Limited (the "Company" or "Parent Company") together with its subsidiaries (the "Group") for the year ended 31 December 2016.

Overview

The Company is incorporated in England and Wales and its primary place of business is Luxembourg. The Company is an indirect subsidiary of JPMorgan Chase Bank, National Association ("JPMorgan Chase Bank, N.A."), a national banking association in the United States of America ("U.S.") and a principal subsidiary of JPMorgan Chase & Co. ("JPMorgan Chase" or the "Firm"). JPMorgan Chase is a financial holding company incorporated under Delaware law in 1968, is a leading global financial services firm and is one of the largest banking institutions in the U.S. with operations worldwide. The Group had $586 billion in assets and $45 billion in total shareholder's equity as of 31 December 2016.

Principal activities

The principal activity of the Company consists of making investments in and lending to JPMorgan Chase entities. The central management and control of the Company and its principal office is in Luxembourg.

The four principal subsidiaries within the Group are all based in the United Kingdom ("UK"), including: J.P. Morgan Securities plc ("JPMS plc"), J.P. Morgan Europe Limited ("JPMEL"), J.P. Morgan International Bank Limited ("JPMIB"), and J.P. Morgan Limited ("JPML") (collectively, "principal subsidiaries"). JPMS plc, JPMEL and JPMIB are credit institutions, and EEA Capital Requirements Directive IV ("CRD") define credit institutions as undertakings whose business is to receive deposits or other repayable funds from the public and to grant credits for their own account. JPMS plc, JPMEL and JPMIB are all authorised by the Prudential Regulation Authority ("PRA") and regulated by the PRA and Financial Conduct Authority ("FCA") in the UK. JPML provides financial and investment services and is regulated by the FCA in the UK.

JPMS plc is a principal subsidiary of the Firm in the UK and the European Economic Area ("EEA"). JPMS plc engages in international investment banking activity, including activity across Markets, Investor Services and Banking lines of business. Within these lines of business, its activities include underwriting bonds, equities and other securities, arranging private placements of debt and convertible securities, trading in debt, equity securities and derivatives, brokerage and clearing services for exchange traded futures and options contracts, prime brokerage, and investment banking advisory services. JPMS plc is a member of over twenty exchanges and various clearing houses.

JPMEL provides marketing, custody and payment services to clients on behalf of affiliated entities and continues its wholesale lending activities as a European passported bank. In addition, the it also benefits from attributions received from other Firm undertakings for whom its employees conduct business.

JPMIB's principal activity includes providing investment management, investment advisory, banking (including deposit taking and loans) and custody services in the Europe, the Middle East and Africa ("EMEA") region to Ultra High Net Worth Individuals and High Net Worth Individuals and structures associated with them such as personal holding companies, trusts and corporations. JPMIB also provides such services to smaller charities, foundations and endowments, JPMIB markets a wide range of products to such clients including deposits, loans, mortgages, derivatives (both over the counter and listed), securities, as well as mutual, hedge and private equity funds. JPMIB also provides banking and custody services and certain booking services and acts as a counterparty to derivatives transactions to Asian private banking clients. All trading activity in JPMIB is performed on a matched principal basis.

JPML supplies a range of institutional and corporate related financial and investment services to its international client base. It is prominent as an arranger of mergers and acquisitions (M&A), syndicated debt and other corporate finance activities. It receives attributions from other JPMorgan Chase undertakings, where its employees conduct business on behalf of other affiliated entities.

The Group operates in a number of other countries in Europe through branch networks of its subsidiaries.

Review of business

The directors are satisfied with the performance of the Group with core businesses performing in line with expectations. Despite mixed market conditions and an increasingly complex global environment, results for the year were strong, with developments in the strength and depth of the Group's client franchises.

Key corporate events of 2016 included:

- On 17 March 2016, JPMEL paid interim dividends of $600 million to its parent, JPMS plc.
- On 14 April 2016, JPMS plc paid interim dividends of $358 million on preference shares and $687 million on ordinary shares to J.P. Morgan Chase International Holdings ("JPMCIH"), a JPMorgan Chase subsidiary undertaking of the Group, and $5 million on preferred ordinary shares to J.P. Morgan Capital Financing Limited, a company affiliated to the Group.
- On 9 May 2016, JPMCIH paid interim dividends of $157 million on preference shares to J.P. Morgan Whitefriars UK, a company affiliated to the Group.
- On 14 December 2016, JPMCIH paid interim dividends of $157 million on preference shares to J.P. Morgan Whitefriars UK.
- On 23 December 2016, the Geneva branch of the Company was closed, with all remaining assets and liabilities transferred to the head office in Luxembourg.
- During the fourth quarter of 2016 J.P. Morgan Securities plc was rated 'A+/A-1 on a standalone basis, with a stable outlook from Standard & Poor's.

Key performance indicators ("KPIs")

The results are monitored against expectations of the business activities. The board of directors monitors progress on the performance of the Group by reference to the following KPIs:

Financial Performance (in USD million's except for capital ratios)	2016	2015
Income statement		
Operating profit	8,006	8,345
Profit on ordinary activities before taxation	3,903	3,654
Profit for the financial year (after tax)	2,937	3,211
Balance sheet		
Total assets	586,360	510,415
Capital and Balance Sheet		
Common Equity Tier 1	42,022	39,362
Return on assets	0.50%	0.63%
Pillar 1 Capital Ratio	20.08%	21.14%
Regulatory minimum total required capital ratio*	8%	8%

* Represents minimum requirements of the European Union's Basel III Capital Requirements Directive and Regulation. The Group's total capital ratio as of 31 December 2016 and 2015 exceeded the minimum requirements, as well as the additional capital requirements in excess of the minimum as specified by the PRA.

Income statement

The consolidated income statement for the year ended 31 December 2016 is set out on page 31. Total operating profit was $8,006 million for 2016 (2015: $8,345 million). The results for the Group show a profit on ordinary activities before taxation of $3,903 million for 2016 (2015: $3,654 million).

Balance sheet

The consolidated balance sheet is set out on page 32. The Group has total assets and total liabilities of $586,360 million (2015: $510,415 million) and $541,082 million (2015: $467,699 million) respectively, as at 31 December 2016.

Capital ratios

The Company continues to maintain strong capital ratios. Refer to applicable Risk management section on page 8 for further details.

A more detailed description of the JPMorgan Chase key performance indicators may be found within the JPMorgan Chase & Co. 2016 Annual Report on Form 10-K.

Business environment, strategy and future outlook

The Group's outlook for the full 2017 year should be viewed against the backdrop of the global economy, financial markets activity, the geopolitical environment, the competitive environment, client activity levels and regulatory and legislative developments in the countries where the Group does business. Each of these inter-related factors will affect the performance of the Group and its lines of business ("LOB's").

On 23 June 2016, the UK voted by referendum to leave the European Union ("Brexit"). On 29 March 2017, the UK government formally invoked Article 50 of the Lisbon Treaty, giving an expected exit date of the end of March 2019. The British Prime Minister has laid out twelve "negotiation objectives" for Brexit, which confirmed the UK will not remain a member of the Single Market, but will pursue a Free Trade Agreement that provides the greatest possible access to the Single Market. Further, the UK government will seek a phased arrangement to ensure the orderly transition of the legal and regulatory framework for financial services and promote stability and market confidence.

Many international banks, including JPMorgan Chase, operate substantial parts of their European Union ("EU") businesses from entities based in the UK. Upon the UK leaving the EU, the regulatory and legal environment that would then exist, and to which the Firm's UK operations would then be subject, will depend on, in certain respects, the nature of the arrangements agreed to with the EU and other trading partners.

These arrangements cannot be predicted, but currently the Firm does not believe any of the likely identified scenarios would threaten the viability of the Firm's business units or the Firm's ability to serve clients across the EU and in the UK. However, it is possible that under some scenarios changes to the Firm's legal entity structure and operations would be required, which might result in a less efficient operating model across the Firm's European legal entities and the Group's European branches. The Firm is in the process of evaluating plans to ensure its continued ability to operate in the UK and the EU beyond the expected exit date.

The impact of Brexit on the Group's business model and risks will continue to be assessed as part of the Firmwide analysis and planning phase in considering a strategic post-Brexit legal entity structure.

During Q2 2017, the Firm simplified the ownership structure within the Group, as set out in the Regulatory developments- 'Recovery and resolution' section below.

Regulatory developments

The regulatory reform agenda has led to significant changes in the way that major financial services institutions are regulated worldwide. This collection of reforms, most notably the Basel III framework, has led to a broad restructuring of the financial services industry to both increase resiliency of financial firms and infrastructure as well as reduce the impact of a failure on the financial system. Recently implemented and new requirements are leading to stricter regulations of financial institutions generally and heightened prudential requirements for systemically important firms in particular. Included in these are reforms of the capital and liquidity framework as well as new rules covering over-the-counter ("OTC") derivatives markets, such as mandated exchange trading, position limits, margin, capital and registration requirements. Many of these reforms have and will continue to influence the Firm and Group.

With the majority of the Group's subsidiaries incorporated in the EU, the regulatory developments within the EU are a key focus. In the EU specifically, the European Systemic Risk Board ("ESRB") has been established to monitor financial stability, together with European Supervisory Agencies which set detailed regulatory rules and encourage supervisory convergence across the 28 Member States. The EU has also created a Single Supervisory Mechanism ("SSM") for the eurozone, under which the European Central Bank ("ECB") has supervisory responsibility, together with a Single Resolution Mechanism ("SRM") and Single Resolution Board ("SRB"), having jurisdiction over bank resolution in the zone.

There is an extensive and complex program of final and proposed regulatory enhancements which reflects, in part, the EU's commitment to the G20 policy framework. As such, the EU is currently considering or executing upon significant revisions to laws covering: bank and investment firm recovery and resolution; bank structure; securities settlement; transparency and disclosure of securities financing transactions; benchmarks; resolution of market infrastructures (Central clearing counterparties ("CCP's")); anti-money laundering controls; data security and privacy; and corporate governance in financial firms, together with new amendments to capital and liquidity standards.

Regulatory developments (continued)

Recovery and resolution

In April 2016, the Board of Governors of the Federal Reserve ("Federal Reserve") and the Federal Deposit Insurance Corporation ("FDIC") (collectively the "agencies") jointly provided firm-specific feedback on the 2015 Resolution Plans of eight systemically important U.S. domestic banking institutions and determined that five of these 2015 Resolution Plans, including that of the Firm, were not credible or would not facilitate an orderly resolution under the U.S. Bankruptcy Code, as provided under the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"). The agencies required that the identified shortcomings be satisfactorily addressed in the Firm's Resolution Plan due on 1 July 2017.

On 1 October 2016, the Firm filed with the agencies its 2016 Resolution Submission, describing how the Firm remediated the deficiencies and providing a status report of its actions to address the feedback received from the agencies.

On 13 December 2016, the agencies advised the Firm of their determinations that the Firm's 2016 Resolution Submission adequately remediated the deficiencies in the Firm's 2015 Resolution Plan identified by the agencies. On 1 July 2017, the Firm filed with the agencies its 2017 Resolution Plan, describing how the Firm remediated the remaining shortcomings identified by the agencies in April 2016.

A subsidiary, J.P. Morgan Securities plc ("JPMS plc"), is considered a material legal entity (as defined in its 2016 Resolution Submission) for the purpose of the Firms' annual Resolution Plan. The Firm has taken several steps to address the feedback including, among others, the objective to comprehensively reassess the resolvability of the UK subsidiaries, including that of JPMS plc, and simplify its financial, operational and structural interconnectedness with JPMorgan Chase affiliates.

The proposed simplification was completed by 1 July 2017 and resulted in the elimination of certain intermediate holding entities between the Company and JPMS plc. In addition, the share ownership structure of JPMS plc was simplified and JPMS plc became wholly owned by the Company.

Capital, Liquidity, Leverage Ratio Requirements

In October 2012, the Basel Committee published final guidelines for calculating incremental capital requirements for domestic systemically important banking institutions ("D-SIBs"). These guidelines are complementary to the framework for global systemically important banks ("G-SIBs"), but are more principles-based to allow for national discretion in their implementation.

The D-SIB guidelines have been implemented in the EU by the European Banking Authority ("EBA") through the systemic risk buffer ("SRB") and the other systemically important institution ("O-SII") buffer in CRD IV. The O-SIIs identification process started in 2015 and takes place on a yearly basis. The EU's implementation of the D-SIB guidelines grants EU member states' relevant authorities significant discretion to identify O-SIIs. The Firm's legal entities in the EU do not fall within the scope of the SRB regulations and therefore the Group will not be subject to a SRB capital buffer. The UK has chosen not to apply a capital buffer to O-SIIs and therefore the Group is not required to maintain an O-SII buffer.

The CRD IV package, as amended by the European Commission Delegated Act ("the Delegated Act"), is the EU's implementation of the Basel III capital framework. Notably, the package introduced a new leverage ratio, which compares CRD IV's definition of Tier 1 capital to a measure of leverage exposure, defined as the sum of assets less Tier 1 capital deductions plus certain off-balance-sheet exposures, including a measure of derivatives exposures, securities financing transactions and commitments. On 23 November 2016, the European Commission ("EC") released its proposal for Capital Requirements Directive V ("CRD V")/ Capital Requirements Regulation 2 ("CRR 2"), which amends CRD IV legislation to accommodate several recently finalised Basel standards, including: Fundamental Review of the Trading Book ("FRTB"), Standardised Approach to Counterparty Credit Risk ("SA-CCR") and Leverage Ratio ("LR") plus a number of other amendments to the prudential framework in the EU (e.g., Large Exposure framework). The amendments to the LR now mandate a binding ratio, set at 3%, with discretion afforded to national authorities to increase this requirement if they deem necessary.

The CRD V package also includes the introduction of an intermediate holding company requirement for foreign banks and the implementation of the standard for Total Loss Absorbing Capacity ("TLAC").

The Basel Committee is considering further changes to the Basel III framework, which includes revisions to the standardised approach to credit risk and operational risk calculation methods. The changes will affect the Group and other of the Firm's EU legal entities once finalised and implemented in the EU through changes to the CRD. Note that no firm plans for implementation of these changes have been set out by the EU legislative bodies and their finalisation also remains incomplete following a delay in January 2017, so the approach and timing remains uncertain.

The Basel Committee's international framework for liquidity risk measurement, standards and monitoring requires banking organisations to measure their liquidity against two specific liquidity tests.

Regulatory developments (continued)

Total Loss Absorbing Capacity

In November 2015, the Financial Stability Board ("FSB") issued a set of final principles, and a corresponding term sheet, on a new minimum standard for TLAC of G-SIBs. TLAC is intended to facilitate the resolution of a financial institution without causing financial instability and without recourse to public funds. The FSB's final standard also requires certain material subsidiaries of a G-SIB organised outside of the G-SIB's home country, such as the Group, to maintain amounts of TLAC to facilitate the transfer of losses from operating subsidiaries to the parent company.

As of January 2016, the Bank Recovery and Resolution Directive ("BRRD") subjects institutions to a minimum requirement for own funds and eligible liabilities ("MREL"). On 8 November, the Bank of England ("BOE") and PRA published respectively their policy statement and accompanying supervisory statement on MREL thresholds and buffers. The BOE statement of policy sets out the end-state MREL levels that will apply to UK institutions by 1 January 2022. Intermediate target levels are set depending on whether the firm is a G-SIB, a D-SIB, or neither. The releases confirm that the BOE will apply a level of MREL and implementation timetable in line with the global TLAC standard. The releases do not cover specifically the levels of MREL the Firm can expect for the Group's UK entities such as JPMS plc. BOE is expected to consult again on internal MREL in 2017 (following an FSB publication on internal TLAC issued in December 2016).

Further, on 23 November 2016, the EC released proposals for amending the BRRD, including a proposal to amend MREL requirements to implement the global TLAC standard in the EU. Under the proposal, TLAC will be implemented as a Pillar 1 MREL requirement in line with the FSB's minimum TLAC standard. The scope is in line with the FSB Term Sheet (i.e. Global Systematically Important Insurers ("G-SIIs") only). Additionally, material subsidiaries of non-EU G-SIIs that are not themselves resolution entities will be subject to an internal TLAC requirement, set at 90% of their individual external TLAC requirement were it required.

The potential impacts of these requirements on the Group are currently being considered. Once communication of the end state requirement has been provided, the Group will establish plans to ensure compliance with the requirements by the conformance date. In the interim period however, the Group considers compliance with current minimum capital requirements to represent compliance with its transitional MREL.

EU Market Reform

The EU has finalised the Markets in Financial Instruments Regulation and a revision of the Markets in Financial Instruments Directive (collectively, "MiFID II"). These include extensive market structure reforms, such as the establishment of a new trading venue category (organised trading facilities), creation of a derivatives trading obligation and enhanced pre- and post-trade transparency covering a wider range of financial instruments. Firms trading commodity derivatives will be required to calculate and report their positions and adhere to specific limits. Other reforms introduce enhanced transaction reporting, rules governing algorithmic and high-frequency trading, the publication of best execution data by investment firms and trading venues, investor protection-related and organisational requirements. Other requirements will affect the way investment managers can pay for the receipt of investment research. On 30 June 2016, legislation was passed to delay MiFID II for one year until January 2018. The Firm has a dedicated MiFID II programme which is focused on business specific requirements, ensuring operational readiness and consistency in implementation across the industry.

The EU and national financial legislators and regulators have proposed or adopted numerous further market reforms that may impact the Group's businesses, including heightened corporate governance standards for financial institutions and rules to govern the way that indices are generated that are used as benchmarks for financial instruments or funds.

The EU has established regulatory requirements for OTC derivatives activities under the European Market Infrastructure Regulation ("EMIR"), including requirements relating to margining, mandatory clearing and reporting, which in general have already started taking effect. A global compliance timetable for margin requirements was established by the BCBS-IOSCO Working Group on Margin Requirements ("WGMR"). The EU finalised its rules for non-centrally cleared OTC derivatives in December 2016 which deviated from this schedule in implementing the first phase imposing initial and variation margin requirements for the largest global dealers. Phase 1 of the initial and variation margin rules began to apply in the EU from 4 February 2017. Implementation of industry wide variation margin rules in the EU aligned with the global schedule was due to start on 1 March 2017. However, due to readiness issues across the broader industry, global regulatory bodies which have adopted the WGMR schedule have acted to provide varying degrees of enforcement relief. On 23 February 2017, the European Supervisory Authorities ("ESAs") released a statement that all in-scope transactions entered into from 1 March 2017 remain subject to the rules and would need to be made compliant, but they expect National Competent Authorities to apply a risk-based approach to day-to-day enforcement of the rules as the market works towards full compliance. The Firm and Group is coordinating with its regulators and continues to work diligently with its clients to reach a state of industry readiness.

In addition, the EU also introduced the Securities Financing Transaction Regulation ("SFTR"), parts of which have begun to apply from 2016. The new measures include rules concerning the re-use of collateral, disclosure and record keeping as well as reporting requirements. Given the broad scope of the regulation, it is expected to affect multiple business areas, in particular the repos business, principal stock borrowed loan, agency lending and prime brokerage.

Regulatory developments (continued)

Volcker Rule

Section 619 of the Dodd-Frank Act (the "Volcker Rule") prohibits banking entities, including the Firm, from engaging in certain "proprietary trading" activities, subject to exceptions for underwriting, market-making, risk-mitigating hedging and certain other activities. In addition, the Volcker Rule limits the sponsorship of, and investment in, "covered funds" (as defined in the rule) and imposes limits on certain transactions between the Firm and its sponsored funds. The Group is subject to these provisions by virtue of being a subsidiary of the Firm.

The Volcker Rule, which became effective in July 2015, requires banking entities to establish comprehensive compliance programs reasonably designed to help ensure and monitor compliance with the restrictions under the Volcker Rule, including, in order to distinguish permissible from impermissible risk-taking activities, the measurement, record-keeping, monitoring and reporting of certain key metrics. The reporting requirements include calculating daily quantitative metrics on covered trading activities (as defined in the rule) and providing these metrics to regulators on a monthly basis. Given the uncertainty and complexity of the Volcker Rule's framework, the full impact will ultimately depend on its ongoing interpretation by the five regulatory agencies responsible for its oversight.

Of note, the EU Parliament is considering the Bank Structure Regulation, a draft regulation to implement a proprietary trading ban and impose mandatory separation of other trading activities from core banking activity. The proposed regulation is applicable only to certain banks above materiality thresholds. If the EU Parliament can agree a position on this regulation, it will proceed to a 'trialogue' process to agree a common text between the European Commission, European Council of Ministers and the EU Parliament. Various EU Member States have enacted similar structural measures, including the UK (via the Independent Commission on Banking), France and Germany.

Risk Management

Risk is an inherent part of the Group's business activities. The Group's overall objective is to manage its businesses, and the associated risks, in a manner that balances serving the interests of its clients and customers and protects the safety and soundness of the Group.

JPMorgan Chase's and the Group's risk management framework seeks to mitigate risk and loss to the Firm and Group. The Firm has established processes and procedures intended to identify, measure, monitor, report and analyse the types of risk to which the Firm is subject. However, as with any risk management framework, there are inherent limitations to the Firm's risk management strategies because there may exist, or develop in the future, risks that the Firm has not appropriately anticipated or identified.

The Group exercises oversight through the Board of Directors and delegation from the Board to various committees and sub-committees which are aligned to both the Firm risk management framework and regulatory requirements.

All disclosures in the Risk management section (pages 7 - 24) are unaudited unless otherwise stated.

Risk Summary

The following table summaries the risks inherent in the Group's business activities.

Risk	Definition
Economic risks	
Capital risk	The risk that the Group has an insufficient level and composition of capital to support the Group's business activities, and associated risks during normal economic environments and stressed conditions.
Credit risk	The risk of loss arising from the default of a customer, client or counterparty.
Country risk	The risk that a sovereign event or action alters the value or terms of contractual obligations of obligors, counterparties and issuers, or adversely affects markets related to a particular country.
Liquidity risk	The risk that the Group will be unable to meet its contractual and contingent obligations or that it does not have the appropriate amount, composition and tenor of funding and liquidity to support its assets and liabilities.
Market risk	The risk of loss arising from potential adverse changes in the value of the Group's assets or liabilities or future results, resulting from changes in market variables such as interest rates, foreign exchange rates, equity prices, commodity prices, implied volatilities or credit spreads.
Non-U.S. dollar Foreign Exchange ("FX") risk	Non-U.S. dollar FX risk is the risk that changes in foreign exchange rates affect the value of the Group's assets or liabilities or future results.
Structural interest rate risk	The risk resulting from the Group's traditional banking activities (both on- and off-balance sheet positions) arising from the extension of loans and credit facilities, taking deposits and issuing debt (collectively referred to as "non-trading activities").
Other core risks	
Compliance risk	The risk of failure to comply with applicable laws, rules and regulations.
Conduct risk	The risk that an employee's action or inaction causes undue harm to the Group and Firm's clients and customers, damages market integrity, undermines the Group and Firm's reputation, or negatively impacts the Group and Firm's culture.
Legal risk	The risk of loss or imposition of damages, fines, penalties or other liability arising from failure to comply with a contractual obligation or to comply with laws or regulations to which the Group is subject.
Model risk	The risk of the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports.
Operational risk	The risk of loss resulting from inadequate or failed processes or systems, human factors, or due to external events that are neither market nor credit related such as cyber and technology related events.
Reputation risk	The risk that an action, transaction, investment or event will reduce trust in the Group and the Firm's integrity or competence by our various constituents, including clients, counterparties, regulators, employees and the broader public.

Risk Management (continued)

An overview of the key aspects of risk management is provided below. A detailed description of the policies and processes adopted by the Firm may be found within the JPMorgan Chase & Co. 2016 Annual Report on Form 10-K.

Capital risk (Audited)

Capital risk is the risk the Group has an insufficient level and composition of capital to support the Group's business activities and associated risks during both normal economic environments and under stressed conditions.

A strong capital position is essential to the Group's business strategy and competitive position. The Firm's capital management strategy focuses on maintaining long-term stability to enable the Firm to build and invest in market-leading businesses, even in a highly stressed environment. Prior to making any decisions on future business activities, senior management considers the implications on the Firm's capital. Accordingly, its Capital Management Framework is designed to ensure that the Group is adequately capitalised at all times in relation to:

- Minimum risk-based regulatory capital requirements (Pillar 1 capital under CRD IV[a] plus Pillar 2/Individual Capital Guidance ("ICG") set by the PRA and relevant CRD IV buffers);
- Minimum leverage requirements[b] (calculated per the final rules in the Capital Requirements Regulation ("CRR") post the delegated act (October 2014));
- The risks faced by the entities, through regular comparisons of regulatory and internal capital requirements; and
- Senior management's risk appetite expressed, for example, through the application of an internal capital buffer and preferred minimum capital ratios above those prescribed in regulation.

The framework used to manage capital within the Group is based around a regular cycle of point-in-time capital calculations and reporting, supplemented by forward-looking projections and stress testing, with corrective action taken as and when required to maintain an appropriate level of capitalisation. Each part of the process is subject to rigorous control, including capital adequacy reporting with daily, weekly or quarterly frequency to ensure we maintain appropriate oversight in line with the Capital environment. Escalation of issues is driven by a framework of specific triggers, set in terms of capital and leverage ratios, movements in those ratios and other measures.

Through the quarterly Internal Capital Adequacy Assessment Process ("ICAAP"), the Group ensures that it is adequately capitalised in relation to its risk profile and appetite, not only as at the ICAAP date, but through the economic cycle and under a range of severe but plausible stress scenarios. 'Reverse stress testing' is used to identify potential, extreme scenarios which might threaten the viability of the Group's business model so that any required mitigation can be put in place.

The composition of capital of the Group is as follows. All tiers of capital are shown net of applicable deductions.

	2016 $'m	2015 $'m
Common Equity Tier 1 (Equity share capital and reserves)	41,954	39,293
Additional Tier 1 (Preference shares and preferred ordinary shares)	45	48
Tier 2 (Preference shares and subordinated loan)	23	21
Total capital resources	42,022	39,362
Pillar 1 Capital Requirement (unaudited)	16,741	14,894
Excess of total capital resources over Pillar 1 capital requirements (unaudited)	25,281	24,468
Pillar 1 Capital Ratio (unaudited)	20.08%	21.14%

As of 31 December 2016 and 2015, the Group was adequately capitalised and met all external capital requirements. Capital resources utilised to calculate capital ratios are inclusive of audited current year profits, less the foreseeable dividend included in the post balance sheet events note 38. Additionally, the operational risk requirement included within the Pillar 1 Capital Requirement has been recalculated to incorporate current year net income.

Group information is included in the consolidated Pillar 3 disclosures and is made available on the Firm's website in accordance with Part Eight of the European Capital Requirements Regulation. These are published on an annual basis or more frequently where the Firm has assessed a further need to do so under the guidelines (EBA/ GL/2014/14) set out by the European Banking Authority ("EBA"). These disclosures are not subject to external audit.

(a) CRD IV implemented Basel III in the EU and came into force on 1 January 2014.
(b) Disclosure requirement applicable from 1 January 2015 and minimum leverage requirement applicable from 1 January 2018.

Risk Management (continued)

Credit risk (Audited)

Credit risk refers to the risk of loss arising from a borrower, counterparty or obligor failing to meet its contractual obligations. In its wholesale business, the Group is exposed to credit risk through its underwriting, lending, market-making and hedging activities with and for clients and counterparties, as well as through its operating services activities (such as cash management and clearing activities), securities financing activities, investment securities portfolio, and cash placed with banks. A portion of the loans originated or acquired by the Firm's wholesale businesses are generally retained on the balance sheet; the Group's syndicated loan business distributes a significant percentage of originations into the market and is an important component of portfolio management. The Group designates certain wholesale loans at fair value through profit or loss, refer to note 28.

Governance

Credit risk is managed by the Firm on a global as well as at a legal entity level. The Firm has developed policies and practices that the Group is subject to that are designed to preserve the independence and integrity of the approval and decision-making process of extending credit. The policies ensure that credit risks are assessed accurately, approved properly, monitored regularly and managed actively at the transaction, client and portfolio levels. In addition, the principal subsidiaries within the Group have their own credit risk policy, which contains standards pertaining to governance including: management of concentrations, credit risk limits and new business initiative approvals. The credit risk policy of the Group's principal subsidiaries are reviewed by the Board of Directors' Risk Policy Committee ("DRPC") and approved by their respective Boards.

The Group's principal subsidiaries have a designated Chief Risk Officer. Credit Executives within the Firm who approve extensions of credit for the Group's principal subsidiaries report to the Chief Risk Officer. Each Line of Business ("LOB") within the Firm has its own independent credit risk management function, reporting to the Group Chief Risk Officer.

JPMS plc and JPMEL hold wholesale loan portfolios.

Risk identification and measurement

The Credit Risk Management function identifies, measures, limits, manages and monitors credit risk across our businesses. To measure credit risk, the Group employs several methodologies for estimating the likelihood of obligor or counterparty default. Methodologies for measuring credit risk vary depending on several factors, including type of asset, volatility in trading markets, risk measurement parameters and risk assessment processes. Credit risk measurement is based on the probability of default of an obligor or counterparty, the loss severity given a default event and the exposure at default.

Based on these factors and related market-based inputs, the Group estimates credit losses for its exposures. Incurred credit losses inherent in the wholesale loan portfolios, are reflected in the provision for loan losses and credit losses inherent in lending-related commitments are reflected in the provision for lending-related commitments. These losses are estimated using empirical statistical analyses and depend on the characteristics of the credit exposure. In addition, potential and unexpected credit losses are reflected in the allocation of credit risk capital and represent losses exceeding the established allowances for loan losses and lending-related commitments. The analyses for these losses include stress testing (considering alternative economic scenarios) as described in the stress testing section below.

Risk-rated exposure

The Group holds risk-rated portfolios. For the risk-rated portfolio, credit loss estimates are based on estimates of the probability of default ("PD") and loss severity given a default.

The probability of default is the likelihood that a borrower will default on its obligation; the loss given default ("LGD") is the estimated loss on the exposure that would be realised upon the default and takes into consideration collateral and structural support for each credit facility. The estimation process includes assigning risk ratings to each borrower and credit facility to reflect the internal view risk within the portfolio.

These risk ratings are reviewed regularly by Credit Risk Management and revised as needed to reflect the borrower's current financial position, risk profile and related collateral.

The calculations and assumptions are based on historic experience and management judgement, and are reviewed regularly.

Stress testing

Stress testing is important in measuring and managing credit risk in the Group's credit portfolio. The Group uses stress testing to inform decisions on setting risk appetite both at legal entity and LOB level. Stress testing results across a range of scenarios and products are regularly reported to relevant management committees providing additional insight into credit portfolio's sensitivities under stress and measurement against risk appetite. This additional insight supports timely management notification and action, when required.

Risk Management (continued)

Credit risk (Audited) (continued)

Risk monitoring and management

The Group have adopted and applied the policies and practices developed by the Firm. The Firmwide policy framework establishes credit approval authorities, concentration limits, risk rating methodologies, portfolio review parameters and guidelines for management of distressed exposures. In addition, certain models, assumptions and inputs used in evaluating and monitoring credit risk are independently validated by groups that are separate from the LOBs.

Wholesale credit risk is monitored regularly at an aggregate portfolio, industry and individual client and counterparty level with established concentration limits that are reviewed and revised as deemed appropriate by management, typically on an annual basis.

In addition, wrong-way risk - the risk that exposure to a counterparty is positively correlated with the impact of a default by the same counterparty, which could cause exposure to increase at the same time as the counterparty's capacity to meet its obligations is decreasing - is actively monitored as this risk could result in greater exposure at default compared with a transaction with another counterparty that does not have this risk.

Risk monitoring and management (continued)

Management of the Group's wholesale credit risk exposure is accomplished through a number of means, including:

- Loan underwriting and credit approval process
- Loan syndications and participations
- Loan sales and securitisations
- Master netting agreements
- Collateral and other risk-reduction techniques

Risk reporting

To enable monitoring of credit risk and effective decision-making by the Group's subsidiaries, aggregate credit exposure, concentration levels and risk profile changes are reported regularly to senior Credit Risk Management. Detailed portfolio reporting of industry, product and geographic concentrations occurs monthly, and the appropriateness of the allowance for credit losses is reviewed by senior management at least on a quarterly basis. Through the risk reporting and governance structure, credit risk trends and limit exceptions are provided regularly to, and discussed with, senior management and the relevant Board of Directors as appropriate.

Risk Management (continued)

Credit risk exposures (Audited)

The table below presents the Group's total balance sheet exposure and net exposure to financial assets after taking account of certain risk mitigants. Gross balance sheet exposure is reported on a net-by-counterparty basis for derivatives and securities purchased under agreements to resell when the legal right and intention of offset exists under an enforceable netting agreement as required under section 11.38A of FRS102. Net exposure is presented after taking account of assets which are primarily exposed to market risk, enforceable master netting agreements (where the offsetting criteria under section 11.38A is not met) and the value of collateral received in respect of financial assets.

	Gross balance sheet exposure 1)	Assets captured by market risk	Master netting agreements and other	Cash & security collateral 2)	Net balance sheet exposure	Net balance sheet exposure held with: JPMorgan Chase undertaking	Net balance sheet exposure held with: External counter parties
	$'m	$'m	$'m	$'m	$'m	$'m	$'m
31 December 2016							
Financial assets:							
Cash and balances at central banks	20,768	—	—	—	20,768	—	20,768
Cash at bank and in hand	127	—	—	—	127	125	2
Loans and advances to banks	6,567	—	—	—	6,567	4,621	1,946
Loans and advances to customers 3)	8,766	—	—	(5,374)	3,392	—	3,392
Securities purchased under agreements to resell 4)	141,670	—	—	(141,670)	—	—	—
Securities borrowed 4)	25,665	—	—	(25,665)	—	—	—
Financial assets held for trading	324,203	(89,766)	(200,312)	(19,626)	14,499	—	14,499
Financial assets designated at fair value through profit or loss	330	(330)	—	—	—	—	—
Financial assets available-for-sale	107	(107)	—	—	—	—	—
Other assets	57,278	—	—	—	57,278	23,190	34,088
Total 5)	585,481	(90,203)	(200,312)	(192,335)	102,631	27,936	74,695

See page 12 for footnotes.

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Strategic report (continued)

Risk Management (continued)

Credit risk exposures (Audited) (continued)

	Gross balance sheet exposure 1)	Assets captured by market risk	Master netting agreements and other	Cash & security collateral 2)	Net balance sheet exposure	Net balance sheet exposure held with: JPMorgan Chase undertaking	External counter parties
	$'m	$'m	$'m	$'m	$'m	$'m	$'m
31 December 2015							
Financial assets:							
Cash and balances at central banks	269	—	—	—	269	—	269
Cash at bank and in hand	413	—	—	—	413	413	—
Loans and advances to banks	5,184	—	—	—	5,184	2,137	3,047
Loans and advances to customers 3)	10,293	—	—	(7,409)	2,884	—	2,884
Securities purchased under resale agreements 4)	143,117	—	—	(143,117)	—	—	—
Securities borrowed 4)	14,873	—	—	(14,873)	—	—	—
Financial assets held for trading	301,252	(92,118)	(165,935)	(15,595)	27,604	—	27,604
Financial assets designated at fair value through profit or loss	140	(140)	—	—	—	—	—
Financial assets available-for-sale	20	(20)	—	—	—	—	—
Subordinated loans	245	—	—	—	245	245	—
Other assets	33,692	—	—	—	33,692	11,507	22,185
Total 5)	509,498	(92,278)	(165,935)	(180,994)	70,291	14,302	55,989

1) Of the above on-balance sheet assets, $100,491 million (2015: $97,623 million) is held with other JPMorgan Chase undertakings. For further details of these amounts by line item category, refer to the notes to the financial statements.

2) Cash and security collateral received in respect of financial assets held for trading is limited to net balance sheet exposure after taking account of master netting and other arrangements.

3) During 2016, the net balance sheet exposure on loans and advances to customers is presented without taking into account credit risk mitigants such as financial guarantees, prior year amounts have been adjusted to conform with current year presentation.

4) The fair value of the security collateral in respect of securities financing transactions is, in aggregate, greater than the net amounts reported on balance sheet, and therefore, the related amounts included as cash and security collateral have been limited to the inclusion of collateral to the extent of the net amount by counterparty. During 2015, these amounts were limited to the inclusion of collateral to the extent of the net balance sheet amount in aggregate and therefore prior year amounts have been adjusted to conform with current year presentation.

5) Off-balance sheet exposure consists of lending commitments of $19,571 million (2015: $20,474 million). Refer to note 33.

The Group's credit exposures and credit risk mitigants are further described below:

Cash and balances at central banks
Cash and balances with central banks include interest-bearing deposits. These are of investment grade.

Cash at bank and in hand
Cash at bank and in hand are mainly held with JPMorgan Chase undertakings which are of investment grade.

Loans and advances to banks
The Group places substantially all of its deposits with banks, which are of investment grade to mitigate credit risk exposure.

Risk Management (continued)

Credit risk exposures (Audited) (continued)

Loans and advances to customers
The ratings scale below is based on the Firm's internal risk ratings, which generally correspond to the ratings as defined by S&P and Moody's Investors Service. The Group's credit exposure and maturity profile to loans and advances to customers is detailed in note 14.

	2016	2015
	$'m	$'m
Rating profile		
Investment grade (AAA/Aaa to BBB-/Baa3)	6,503	7,108
Sub-investment grade (BB+/Ba1 and below)	2,263	3,185
	8,766	10,293

There were no material past due or impaired loans and advances to customers as at 31 December 2016 (2015: nil).

Analysis of concentration credit risk

Concentrations of credit risk arise when a number of customers are engaged in similar business activities or activities in the same geographic region, or when they have similar economic features that would cause their ability to meet contractual obligations to be similarly affected by changes in economic conditions.

Geographical credit risk concentration	2016	2015
	$'m	$'m
European Union 1)	7,754	8,176
Rest of the world	1,012	2,117
	8,766	10,293

1) Includes balances with JPMorgan Chase undertakings.

Industry credit risk concentration	2016	2015
	$'m	$'m
Commercial and industrial	2,375	1,877
Financial institutions	277	136
Real estate	746	1,094
Other 2)	5,368	7,186
	8,766	10,293

2) Includes balances with individuals

Securities purchased under agreements to resell and securities borrowed
The Group generally bears credit risk related to resale agreements and securities borrowed where cash advanced to the counterparty exceeds the expected value of the collateral received on default. The Group's credit exposure on these transactions is therefore significantly lower than the amounts recorded on the balance sheet, which for the substantial majority represent contractual value before consideration of any collateral received. The Group also has a potential credit exposure on repurchase agreements and securities loaned, which are liabilities on its balance sheet, to the extent that the value of collateral pledged to the counterparty for these transactions exceeds the amount of cash or collateral received.

Risk Management (continued)

Credit risk exposures (Audited) (continued)

Financial assets held for trading
Debt and equity instruments are primarily exposed to market risk and are therefore deducted to determine the net credit risk exposure. Derivatives are reported at fair value on a gross by counterparty basis in the Group's financial statements unless the Group has current legal right of set-off and also intends to settle on a net basis. The majority of the credit risk exposure is mitigated by cash collateral, margin arrangements and enforceable master netting arrangements. The counterparty credit risk on the derivative portfolio is generally mitigated by arrangements provided to the Group by JPMorgan Chase Bank N.A.

Financial assets available for sale
Financial assets available for sale represents listed equity securities and are captured by market risk and therefore are removed to arrive at net credit risk exposure.

Financial assets designated at fair value through profit and loss
Financial assets designated at fair value through profit or loss represent unlisted equity securities and loans. These are both primarily exposed to market risk and are therefore deducted to determine net credit risk exposure.

Debtors and other assets
The Group is exposed to credit risk from its debtors through its amounts due from brokers/dealers, customers and JPMorgan Chase undertakings. These primarily comprise receivables related to cash collateral paid to counterparties in respect of derivative financial instruments. In addition, these balances also include receivables related to sales of securities which have traded, but not yet settled. These receivables generally have minimal credit risk due to the low probability of clearing organisation default and failure to deliver, the short-term nature of receivables related to securities settlements which are predominately on a delivery versus payment basis.

Country risk

Country risk is the risk that a sovereign event or action alters the value or terms of contractual obligations of obligors, counterparties or issuers, or adversely affects markets related to a particular country. The Firm has a comprehensive country risk management framework for assessing country risks, determining risk tolerance and measuring and monitoring direct country exposures in the Firm. The Country Risk Management group is responsible for developing guidelines and policies for managing country risk in both emerging and developed countries. The Country Risk Management group actively monitors the various portfolios giving rise to country risk to ensure the Firm and Group's country risk exposures are diversified and that exposure levels are appropriate given the Firm and Group's strategy and risk tolerance relative to a country.

Country risk organisation

The Country Risk Management group, part of the independent risk management function, works in close partnership with other risk functions to assess and monitor country risk within the Firm. The Firmwide Risk Executive for Country Risk reports to the Firm's CRO. Country Risk Management is responsible for the following functions:

- Developing guidelines and policies consistent with a comprehensive country risk framework
- Assigning sovereign ratings and assessing country risks
- Measuring and monitoring country risk exposure and stress across the Firm
- Developing surveillance tools for early identification of potential country risk concerns
- Providing country risk scenario analysis

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Strategic report (continued)

Risk Management (continued)

Country risk (continued)

Country risk identification and measurement

The Firm and Group is exposed to country risk through its lending and deposits, investing and market-making activities, whether cross-border or locally funded. Country exposure includes activity with both government and private-sector entities in a country. Under the Firm's internal country risk management approach, country exposure is reported based on the country where the majority of the assets of the obligor, counterparty, issuer or guarantor are located or where the majority of its revenue is derived, which may be different than the domicile (legal residence) or country of incorporation of the obligor, counterparty, issuer or guarantor. Country exposures are generally measured by considering the Firm and Group's risk to an immediate default of the counterparty or obligor, with zero recovery. Assumptions are sometimes required in determining the measurement and allocation of country exposure, particularly in the case of certain tranched credit derivatives. Different measurement approaches or assumptions would affect the amount of reported country exposure.

Country risk measures are aggregated based on a "Country of Assets" attribute assigned to the client/counterparty/issuer or the risk position by the LOB owner of the risk. Country Risk Management maintains the Firmwide definition for Country of Assets and consults with the business as requested on designations. All risk positions, regardless of type, must have a designated Country of Assets.

Under the Firm's internal country risk measurement framework used by the Group:

- Lending exposures are measured at the total committed amount (funded and unfunded), net of the allowance for credit losses and cash and marketable securities collateral received
- Deposits are measured as the cash balances placed with central and commercial banks
- Securities financing exposures are measured at their receivable balance, net of collateral received
- Debt and equity securities are measured at the fair value of all positions, including both long and short positions
- Counterparty exposure on derivative receivables is measured at the derivative's fair value, net of the fair value of the related collateral. Counterparty exposure on derivatives can change significantly because of market movements
- Credit derivatives protection purchased and sold is reported based on the underlying reference entity and is measured at the notional amount of protection purchased or sold, net of the fair value of the recognised derivative receivable or payable. Credit derivatives protection purchased and sold in the Firm's market making activities is measured on a net basis, as such activities often result in selling and purchasing protection related to the same underlying reference entity; this reflects the manner in which the Firm manages these exposures.

The Firm and Group offers a wide variety of products and services, and some activities may create contingent or indirect exposure related to a country (for example, providing clearing services or secondary exposure to collateral on securities financing receivables). These exposures are managed in the normal course of business through the Firm and Group's credit, market and operational risk governance, rather than through Country Risk Management.

Country risk stress testing

The country risk stress framework aims to estimate losses arising from a country crisis by capturing the impact of large asset price movements in a country based on market shocks combined with counterparty specific assumptions. Country Risk Management periodically defines and runs ad hoc stress scenarios for individual countries in response to specific market events and sector performance concerns.

Country risk reporting

The Group's top three country exposures as of 31 December 2016 are the UK, France and Germany. The selection of countries is based solely on the Group's largest total exposures by country, based on the Firm's internal country risk management approach, and does not represent the Firm's view of any actual or potentially adverse credit conditions. Country exposures may fluctuate from period to period due to client activity and market flows.

Risk Management (continued)

Liquidity risk (Audited)

Liquidity risk is the risk that the Group will be unable to meet its contractual and contingent obligations or that it does not have the appropriate amount, composition and tenor of funding and liquidity to support its assets and liabilities.

Liquidity risk oversight

The Firm has a liquidity risk oversight function whose primary objective is to provide assessment, measurement, monitoring and control of liquidity risk across the Firm. Liquidity risk oversight is managed through a dedicated Firmwide Liquidity Risk Oversight group. The Chief Investment Office ("CIO"), Treasury, and Corporate Chief Risk Officer ("CTC CRO"), as part of the independent risk management function, have responsibility for Firmwide Liquidity Risk Oversight. Liquidity Risk Oversight's responsibilities include but are not limited to:

- Establishing and monitoring limits and indicators, including liquidity risk appetite;
- Defining, monitoring and reporting internal Firmwide and legal entity stress tests and monitoring and reporting regulatory defined stress testing;
- Approving or escalating for review new or updated liquidity stress assumptions;
- Defining, monitoring and reporting liquidity risk metrics that provide insight and control into liquidity risk activities;
- Monitoring and reporting liquidity positions, balance sheet variances and funding activities;
- Conducting ad hoc analysis to identify potential emerging liquidity risks.

Risk governance and measurement

Specific committees responsible for liquidity governance include the Firmwide Asset Liability Committee ("ALCO"), LOB and regional ALCOs, CTC Risk Committee and EMEA Risk Committee. The Risk Policy Committee of the Board of Directors ("DRPC"), are additionally responsible for the subsidiaries, JPMS plc and JPMEL.

Internal stress testing

JPMS plc, JPMEL and JPMIB are subject to legal entity liquidity stress tests.

These liquidity stress tests are intended to ensure sufficient liquidity under a variety of adverse scenarios, including scenarios analysed as part of the Firm's resolution and recovery planning. Stress scenarios are produced for these legal entities on a regular basis and ad hoc stress tests are performed, as needed, in response to specific market events or concerns. Liquidity stress tests assume all of the legal entities' contractual obligations are met and take into consideration varying levels of access to unsecured and secured funding markets, estimated non-contractual and contingent outflows and potential impediments to the availability and transferability of liquidity between jurisdictions and material legal entities such as regulatory, legal or other restrictions. Liquidity outflow assumptions are modelled across a range of time horizons and contemplate both market and idiosyncratic stress. Results of stress tests are considered in the formulation of the legal entity's funding plan and assessment of its liquidity position.

Liquidity risk stress testing is established at the Firm and material legal entity ("LE") level. JPMS plc, JPMEL and JPMIB's liquidity stress testing is incorporated within the JPMorgan Chase legal entity liquidity risk framework and follows Firmwide liquidity assumptions, with additional considerations for intercompany positions and the definition of local liquid asset buffer ("Local LAB").

Liquidity management

The Group's Treasury and CIO is responsible for liquidity management. The primary objectives of effective liquidity management are to ensure that the Firm's core businesses and material legal entities are able to operate in support of client needs, meet contractual and contingent obligations through normal economic cycles as well as during stress events, and to manage both optimal funding mix and availability of liquidity sources. The Firm manages liquidity and funding using a centralised, global approach across its entities, taking into consideration both their current liquidity profile and any potential changes over time, in order to optimise liquidity sources and uses. In the context of the Firm's liquidity management, the Group's Treasury and CIO is responsible for:

- Analysing and understanding the liquidity characteristics of the Firm, lines of business and legal entities' assets and liabilities, taking into account legal, regulatory and operational restrictions;
- Defining and monitoring Firmwide and legal entity specific liquidity strategies, policies, guidelines and contingency funding plans;
- Managing liquidity within approved liquidity risk appetite tolerances and limits;
- Setting transfer pricing in accordance with underlying liquidity characteristics of balance sheet assets and liabilities as well as certain off-balance sheet items.

Risk Management (continued)

Liquidity risk (Audited) (continued)

Liquidity management (continued)

The Group's subsidiaries, JPMS plc, JPMEL and JPMIB are regulated by the PRA and, from 1 October 2015, were expected to comply with the liquidity coverage ratio ("LCR") guidance set out in the Delegated Act (Commission delegated regulation (EU) 2015/61). The LCR is intended to measure the amount of "high quality liquid assets" ("HQLA") held by the Group in relation to estimated net liquidity outflows within a 30-day calendar day stress period. The LCR was required to be 80% at 1 October 2015, rising to 90% on 1 January 2017 until reaching the 100% minimum by 1 January 2018. At 31 December 2016, the Group was compliant with the fully phased-in LCR.

The Basel Committee final standard for net stable funding ratio ("Basel NSFR") is intended to measure the "available" and "required" amounts of stable funding over a one year horizon. On 23 November 2016, the European Commission introduced its legislative proposal for the NSFR ("EU NSFR"), amending Regulation (EU) No 575/2013. The proposal is subject to approval from the European Parliament and Council of the EU.

A regular internal assessment of the liquidity risk management framework is performed on JPMS plc, JPMEL and JPMIB, which informs the directors of the liquidity risks resulting from business activities in addition to the current and future funding needs of these subsidiaries.

Contingency funding plan

JPMS plc, JPMEL and JPMIB maintain a contingency funding plan ("CFP"), together with the addendum to the CFP. These are reviewed by the Firmwide ALCO, and the addendum is approved by the Boards of each legal entity. The CFP and addendum is a compilation of procedures and action plans for managing liquidity through stress events. The CFP and addendum incorporate the limits and indicators set by the Liquidity Risk Oversight group. These limits and indicators are reviewed regularly to identify the emergence of risks or vulnerabilities in the liquidity position of those subsidiaries. The CFP identifies the alternative contingent liquidity resources available to those subsidiaries in a stress event.

Funding

The Group's sources of short-term secured funding primarily consist of open maturity customer deposits and securities loaned or sold under agreements to repurchase. Securities loaned or sold under agreements to repurchase are secured predominantly by high-quality securities collateral, including government-issued debt, agency debt and agency mortgage-backed securities ("MBS"), and constitute a significant portion of the federal funds purchased and securities loaned or sold under repurchase agreements. The directors believe that the Group's unsecured and secured funding capacity is sufficient to meet its on and off-balance sheet obligations.

The following table provides details on the maturity of all financial liabilities:

	Less than 1 year	More than 1 year	Total	Less than 1 year	More than 1 year	Total
	2016	**2016**	**2016**	**2015**	**2015**	**2015**
	$'m	**$'m**	**$'m**	**$'m**	**$'m**	**$'m**
Deposits by banks	142	—	142	114	—	114
Customer accounts	23,504	—	23,504	23,874	—	23,874
Securities sold under repurchase agreements	61,128	529	61,657	58,610	327	58,937
Securities loaned	20,048	—	20,048	11,030	—	11,030
Financial liabilities held for trading	294,647	139	294,786	264,081	125	264,206
Other liabilities	98,884	39,698	138,582	107,642	381	108,023
Accruals and deferred income	1,638	—	1,638	1,000	—	1,000
Subordinated liabilities	—	4	4	—	5	5
	499,991	40,370	540,361	466,351	838	467,189

Risk Management (continued)

Liquidity risk (Audited) (continued)

Funding (continued)

The majority of short-term funding transactions by way of repurchase agreements and stock lending have short-dated maturities, typically less than one month. JPMS plc has relassified repurchase agreements of $327 million relating to prior year as 'more than 1 year'. Trade creditors predominantly include unsettled trades and other liabilities include cash collateral received; both have short-dated maturities. Financial liabilities held for trading primarily include derivatives and short positions and are ordinarily classified as liabilities falling due within one year for the purpose of disclosure under Section 34.28 of FRS102.

Until September 2016, JPMS plc had entered into revolving committed liquidity facilities with other JPMorgan Chase undertakings to help manage liquidity risk. The facilities were terminated in September 2016 and replaced with the issuance of notes amounting to $39,494 million as at 31 December 2016.

Market risk (Audited)

Market risk is the exposure to an adverse change in the market value of financial instruments caused by a change in market parameters. The primary categories of market parameters are:

- Interest Rates - Interest rate risk primarily results from exposure to changes in the level, slope and curvature of the yield curve, and the volatility of interest rates and mortgage pre-payment rates;
- Foreign Exchange Rates - Foreign exchange rate risk results from exposure to changes in prices and volatility of currency rates;
- Equity Prices - Equity price risk arises from exposure to changes in prices and volatility of individual equities, equity baskets and equity indices;
- Credit Spreads - Credit spreads are the difference between yields on corporate debt (subject to default risk) and government bonds; and
- Commodity Prices - Commodity price risk results from exposures to changes in prices and volatility of commodities, such as natural gas, crude oil, petroleum products, precious and base metals and electricity.

Market risk management

The Firmwide Risk Executive of Market Risk and LOB Chief Risk Officers are responsible for managing Firmwide market risk. The LOB Market Risk functions are responsible for establishing methodologies and procedures to identify, measure, monitor and control market risk, using information provided by the Firm's risk infrastructure. The market risk of the Group is primarily driven by JPMS plc. JPMS plc's Market Risk Officer and Chief Risk Officer are responsible for application of these processes to the legal entity. JPMS plc's Market Risk Officer is supported by the UK Regulated Legal Entities Market Risk team, which is part of the Firm's Market Risk function, in the application of these processes to the Group, on a day-to-day basis.

Market Risk Management, as part of the independent risk management function, is responsible for identifying and monitoring market risks throughout the Firm and defines market risk policies and procedures. The Market Risk function reports to the Firm's Chief Risk Officer. Market Risk seeks to control risk, facilitates efficient risk/return decisions, reduces volatility in operating performance and provides transparency into the Firm and the Group's market risk profile for senior management, the Board of Directors and regulators. Market Risk is responsible for the following functions:

- Establishment of a market risk policy framework
- Independent measurement, monitoring and control of LOB market risk
- Definition, approval and monitoring of limits
- Performance of stress testing and qualitative risk assessments

Risk identification and classification

Each LOB is responsible for the management of the market risks within its units. The independent risk management group is responsible for overseeing each LOB and is charged with ensuring that all material market risks are appropriately identified, measured, monitored and managed in accordance with the risk policy framework set out by Market Risk.

Risk Management (continued)

Market risk (Audited) (continued)

Risk measurement

As no single measure can reflect all aspects of market risk, the Group uses various metrics including, but not limited to, Value-at-risk ("VaR"), Stress testing, Non-statistical risk measures, Risk Identification For Large Exposures ("RIFLEs")[a], Profit & Loss ("P&L") Drawdowns and Single Name Position Risk ("SNPR"). The appropriate set of risk measurements for a given business activity depends on business mandate, risk horizon, materiality, market volatility and other factors.

VaR

VaR is a statistical risk measure that gauges the potential loss from adverse market moves in a normal market environment. VaR is computed using historical simulation covering the most recent twelve month period, and accounts for diversification by maintaining a cross-business risk profile.

The Firm has an overarching VaR model framework which is used for risk management and disclosure purposes Firmwide and utilises historical simulation based on data for the previous twelve months. Risk Management VaR is calculated assuming a one-day holding period and an expected tail-loss methodology which approximates a 95% confidence level. Within the Group JPMS plc, JPMEL and JPMIB utilise VaR as a risk measure.

Stress testing

Stress testing captures exposure to unlikely but plausible events in abnormal markets pertinent to the Group's risks. This measure is designed to create simple or complex scenarios specifying detailed shocks of up to six magnitudes (small, large, severe; positive and negative). The Group runs weekly stress tests on market-related risks across the lines of business using multiple scenarios that assume significant changes in risk factors such as credit spreads, equity prices, interest rates, currency rates or commodity prices. Stress test results, trends and explanations based on current market risk positions are reported to the Group's senior management and to the lines of business to allow them to better understand the sensitivity of positions to certain defined events and to enable them to manage their risks with more transparency.

Non-statistical risk measures

Business risk measures within specific market context (including net open positions, basis point values, option sensitivities, market values, position concentrations and position turnover), aggregated by business unit and risk type.

RIFLEs[a]

RIFLEs are the identification of potential losses arising from low-probability, but plausible and material, idiosyncratic risks not well captured by other risk measures, such as VaR and stress testing. Responsibility for identifying and maintaining RIFLEs rests with the LOB.

P&L Drawdowns

P&L Drawdowns, whether Maximum Drawdown or Current Drawdown, and Loss Advisories are metrics to advise senior management of potential out-sized losses and to initiate discussion of remedies (e.g. reduction of exposure).

SNPR

SNPR captures the market risk impact of the exposure to credit families and entities within credit families, such as the Firm and its subsidiaries or standalone issuers/issuer families not part of credit families, assuming default of the issuer with zero recovery.

[a] In March 2017 RIFLEs was subsumed in the Risk Identification Framework and no longer exist as an independent risk measure.

Risk Management (continued)

Market risk (Audited) (continued)

Risk monitoring and control

Market risk limits are employed as the primary second line of defence control for ensuring that the Group's market risk activities are aligned with certain quantitative parameters with the Group's Risk Appetite framework. JPMS plc's and JPMEL's Chief Risk Officer and Market Risk Officer establish the legal entity level limits. Business heads and Market Risk are signatories to the limits. Limit utilisations and valid breaches are reported daily.

The table below shows the result of the Group's risk management VaR measures using a 95% confidence level.

	At 31 December	
	2016	2015
	$'m	$'m
95 % VaR	18	15

The market risk of the Group is primarily driven by JPMS plc. JPMS plc's market risk profile is net long risk across fixed income assets, commodities and local currency/short U.S. dollar foreign exchange markets, with short risk positions within equity markets. Fixed income positions drive the risk and these are generally held in cash securities across developed, emerging and securitised products markets. Out of the eleven macro stress scenarios that JPMS plc is subject to, the worst case stress loss during 2016 was primarily driven by the Credit Crisis scenario which models the extent and severity across a broad range of asset classes observed in the 2008 financial crisis.

Non-U.S. dollar foreign exchange ("FX") risk

Non-U.S. dollar FX risk is the risk that changes in foreign exchange rates affect the value of the Group's assets or liabilities or future results.

The Group does not have material risks associated with foreign investments in subsidiaries. The Group does have mismatches between the currency in which Risk Weighted Assets ("RWAs") are denominated and the functional currency (U.S. dollar). This means that changes in FX rates can impact the capital ratios of the Group. The Non-U.S. dollar FX risk is managed through the stress testing program which is an important component in managing structural FX risk, testing the Group and Firm's financial resilience in a range of severe economic and market conditions.

Structural interest rate risk

Structural interest rate risk is the Interest Rate Risk in the Banking Book ("IRRBB") and is defined as Interest Rate Risk ("IRR") resulting from the Group's traditional banking activities (accrual accounted on and off-balance sheet positions) which includes extension of loans and credit facilities, taking deposits and issuing debt (collectively referred to as 'non-trading' activities). IRR from non-trading activities can occur due to a variety of factors, including but not limited to:

- Difference in the timing among the maturity or re-pricing of assets, liabilities and off-balance sheet instruments;
- Differences in the balances of assets, liabilities and off-balance sheet instruments that re-price at the same time;
- Differences in the amounts by which short-term and long-term market interest rates change; and
- Impact of changes in the maturity of various assets, liabilities or off-balance sheet instruments as interest rates change.

Risk Management (continued)

Structural interest rate risk (continued)

Governance and oversight

Governance for Firmwide IRR is defined in the IRR Management Policy which is approved by the DRPC. The CIO, Treasury and Other Corporate Risk Committee ("CTC RC") is the governing committee with respect to IRRBB, whose function includes:

- Reviewing the IRR Management policy;
- Reviewing the IRR profile of the Firm and compliance with IRR limits; and
- Reviewing significant changes to IRR models and/or model assumptions.

In addition to CTC RC, IRR exposures and significant model and/or model assumptions changes are reviewed by the ALCO. The ALCO provides a framework for overseeing the IRR of LOBs, foreign jurisdictions and key legal entities to appropriate LOB ALCOs, Country ALCOs and other local governance bodies.

The CTC RC also governs the IRR Management Group; an independent dedicated risk group within CTC and reports into the CTC Chief Risk Officer. IRR Management is responsible for, but not limited to, the following:

- Creating governance over IRR assumptions and parameter selection/calibration; and
- Identifying and monitoring IRR and establishing limits as appropriate.

Risk Identification and Measurement

CIO manages IRRBB exposure on behalf of the Firm and Group by identifying, measuring, modelling and monitoring IRR across the Firm's balance sheet. CIO identifies and understands material balance sheet impacts of new initiatives and products and executes market transactions to manage IRR through CIO investment portfolio's positions. Execution by CIO will be based on parameters established by senior management, per the CIO Investment Policy. In certain legal entities, such as those that form part of the Group, Treasury manages IRR in partnership with CIO. Lines of businesses are responsible for developing and reviewing specific LOB IRR modelling assumptions.

Measures to manage IRR include:

- Earnings-at-risk: primary measure used to gauge the Firm's shorter term IRR exposure which measures the sensitivity of pre-tax income to changes in interest rates over a rolling 12 months compared to base scenario (Level 1 Market Risk limit applied); and
- Economic Value Sensitivity ("EVS"): an additional Firmwide metric utilised to determine changes in asset/liability values due to changes in interest rates.

Compliance risk

Compliance risk is the risk of failure to comply with applicable laws, rules and regulations.

The Corporate and Investment Bank ("CIB"), of which the Group is part of, is accountable for managing its compliance risk. The Firm's Compliance Organisation ("Compliance"), works closely with senior management to provide independent review, monitoring and oversight of business operations with a focus on compliance with the legal and regulatory obligations applicable to the offering of the Firm's products and services to clients and customers.

These compliance risks relate to a wide variety of legal and regulatory obligations, depending on the LOB and the jurisdiction and include those related to products and services, relationships and interactions with clients and customers, and employee activities. For example, compliance risks include those associated with anti-money laundering compliance, trading activities, market conduct and complying with the rules and regulations related to the offering of products and services across jurisdictional borders, among others.

Other functions such as Finance (including Tax), Technology and Human Resources provide oversight of significant regulatory obligations that are specific to their respective areas of responsibility.

Compliance implements various practices designed to identify and mitigate compliance risk by establishing policies, testing, monitoring, training and providing guidance. In recent years, the Firm has experienced heightened scrutiny by its regulators of its compliance with regulations, and with respect to its controls and operational processes. The Firm expects that such regulatory scrutiny will continue.

Risk Management (continued)

Compliance risk (continued)

Governance and oversight

Compliance is led by the Firms' Chief Compliance Officer ("CCO") who reports, effective September 2016, to the Firm's CRO. The regional CCOs, including the EMEA CCO, are part of this structure. The Firm maintains oversight and coordination of its Compliance Risk Management practices through the Firm's CCO, lines of business CCOs and regional CCOs who implement the Compliance program globally across the lines of business and regions. For JPMS plc and JPMEL, in the UK the regional CCO is a member of the UK Management Committee and the UK Audit & Compliance Committee.

The Firm has in place a Code of Conduct (the "Code") which applies to the Group. Each employee is given annual training in respect of the Code and is required annually to affirm his or her compliance with the Code. The Code sets forth the Firm's core principles and fundamental values, including that no employee should ever sacrifice integrity or give the impression that he or she has. The Code requires prompt reporting of any known or suspected violation of the Code, any internal Firm policy, or any law or regulation applicable to the Firm's business. It also requires the reporting of any illegal conduct, or conduct that violates the underlying principles of the Code, by any of the Firm's employees, customers, suppliers, contract workers, business partners or agents. Specified employees are specially trained and designated as "Code specialists" who act as a resource to employees on Code matters. In addition, concerns may be reported anonymously and the Firm prohibits retaliation against employees for the good faith reporting of any actual or suspected violations of the Code. The Code and the associated employee compliance program are focused on the regular assessment of certain key aspects of the Firm's culture and conduct initiatives.

Conduct risk

Conduct risk is the risk that an employee's action or inaction causes undue harm to the Group and Firm's clients and customers, damages market integrity, undermines the Group and Firm's reputation, or negatively impacts the Group and Firm's culture.

Overview

The Group is accountable for identifying and managing its conduct risk to provide appropriate engagement, ownership and sustainability of a culture consistent with the Firm's How We Do Business Principles ("Principles"). The Principles serve as a guide for how employees are expected to conduct themselves. With the Principles serving as a guide, the Firm's Code sets out the Firm's expectations for each employee and provides certain information and the resources to help employees conduct business ethically and in compliance with the law everywhere the Firm operates. For further discussion of the Code, see Compliance risk.

Governance and oversight

The Compensation & Management Development Committee ("CMDC") is the primary Board-level Committee that oversees the Firm's culture and conduct programs. The Firms Audit Committee has responsibility to review the program established by management that monitors compliance with the Code. Additionally, the DRPC reviews, at least annually, the Firm's qualitative factors included in the Risk Appetite Framework, including conduct risk. The DRPC also meets annually with the CMDC to review and discuss aspects of the Firm's compensation practices.

Governance and oversight (continued)

Conduct risk appetite is expressed through qualitative factors in the Firmwide Risk Appetite framework. Management does not tolerate individual employee misconduct. In managing conduct risk, the Firm acknowledges that there may be some incidents of misconduct given its global business model and distributed workforce. The Firm employs appropriate governance processes, including a Conduct Risk Framework to identify, monitor, report, escalate and manage conduct risk overall.

The Group's approach mirrors the Firmwide approach. The Group receives regular progress reporting on culture and conduct for its respective businesses. The Group continues to identify enhancements that can be made to provide additional oversight and tone from the top on this agenda.

Risk Management (continued)

Conduct risk (continued)

Risk management

Conduct risk management is incorporated into various aspects of people management practices throughout the employee life cycle, including recruiting, onboarding, training and development, performance management, promotion and compensation processes. The Firm's Conduct Risk framework, which has been reviewed by the Firmwide Risk Committee ("FRC") and the DRPC, provides for on-going monitoring and oversight of conduct risks. Businesses undertake annual Risk and Control Self-Assessment ("RCSA") and, as part of these RCSA reviews, they identify their respective key inherent operational risks (including conduct risks), evaluate the design and effectiveness of their controls, identify control gaps and develop associated action plans.

The Firm's Know Your Employee framework generally addresses how the Firm manages, oversees and responds to workforce conduct related matters that may otherwise expose the Firm to financial, reputational, compliance and other operating risks. The Firm also has a Human Resource Control Forum, the primary purpose of which is to discuss conduct and accountability for more significant risk and control issues and review, when appropriate, employee actions including, but not limited to, promotion and compensation actions.

The Group's approach mirrors the Firmwide approach.

Legal risk

Legal risk is the risk of loss or imposition of damages, fines, penalties or other liability arising from the failure to comply with a contractual obligation or to comply with laws, rules or regulations to which the Group is subject.

Overview

In addition to providing legal services and advice to the Firm and Group, and communicating and helping the lines of business adjust to the legal and regulatory changes they face, including the heightened scrutiny and expectations of the Group and Firm's regulators, the global Legal function is responsible for working with the businesses and corporate functions to fully understand and assess their adherence to laws, rules and regulations. In particular, Legal assists Oversight & Control, Risk, Finance, Compliance and Internal Audit in their efforts to ensure compliance with all applicable laws and regulations and the Firm's corporate standards for doing business. The Firm's lawyers also advise the Firm and Group on potential legal exposures on key litigation and transactional matters, and perform a significant defence and advocacy role by defending the Firm and Group against claims and potential claims and, when needed, pursuing claims against others. In addition, they advise the Firm's Conflicts Office which reviews wholesale transactions that may have the potential to create conflicts of interest.

Governance and oversight

The Firm's General Counsel reports to the JPMorgan Chase Chief Executive Officer ("CEO") and is a member of the Operating Committee, the Firmwide Risk Committee and the Firmwide Control Committee. The General Counsel's leadership team includes a General Counsel for each of the Firm's LOBs, the heads of the Litigation and Corporate & Regulatory practices, as well as the Firm's Corporate Secretary. Each region (e.g., Latin America, Asia Pacific) has a General Counsel who is responsible for managing legal risk across all lines of business and functions in the region.

Legal works with various committees (including new business initiative and reputation risk committees) and the Firm and Group's businesses to protect the Firm and Group's reputation beyond any particular legal requirements.

Model risk

Model risk is the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports.

The Group and Firm uses models across various businesses and functions. The models are of varying levels of sophistication and are used for many purposes including, for example, the valuation of positions and the measurement of risk, such as assessing adequacy of regulatory capital, conducting stress testing and making business decisions.

Risk management

The Model Risk function reviews and approves a wide range of models, including risk management, valuation, and regulatory capital models used by the Firm. The Model Risk function is independent of model users and developers. The Firmwide Model Risk Executive reports to the Firm's CRO.

Risk Management (continued)

Operational risk

Operational risk is the risk of loss resulting from inadequate or failed processes or systems, human factors or due to external events that are neither market nor credit-related.

Operational risk is inherent in the Group's activities and can manifest itself in various ways, including fraudulent acts, business interruptions, inappropriate employee behaviour, failure to comply with applicable laws and regulations or failure of vendors to perform in accordance with their arrangements. These events could result in financial losses, litigation and regulatory fines, as well as other damages to the Group. The goal is to keep operational risk at appropriate levels in light of the Group's financial strength, the characteristics of its businesses, and the markets and regulatory environments in which it operates.

Risk management

To monitor and control operational risk, the Firm has an Operational Risk Management Framework ("ORMF") which is designed to enable the Firm to maintain a sound and well-controlled operational environment. The ORMF is comprised of four main components: Governance, Risk Assessment, Measurement and Monitoring and Reporting.

Operational risk can manifest itself in various ways. Risks such as Compliance risk, Conduct risk, Legal risk and Model risk as well as other operational risks, can lead to losses which are captured through the Firm's operational risk measurement processes. More information on these risk categories can be found in the respective risk management sections. Details on cybersecurity risk is provided below.

Cybersecurity risk

The Firm devotes significant resources to protect the security of the Firm and Group's computer systems, software, networks and other technology assets. These security efforts are intended to protect against cybersecurity attacks by unauthorized parties to obtain access to confidential information, destroy data, disrupt or degrade service, sabotage systems or cause other damage. The Firm continues to make significant investments in enhancing its cyber defence capabilities and to strengthen its partnerships with the appropriate government and law enforcement agencies and other businesses in order to understand the full spectrum of cybersecurity risks in the environment, enhance defences and improve resiliency against cybersecurity threats.

Third parties with which the Group does business or that facilitate the Group's business activities (e.g. vendors, exchanges, clearing houses, central depositories and financial intermediaries) could also be sources of cybersecurity risk to the Group. Third party cybersecurity incidents such as system breakdowns or failures, misconduct by the employees of such parties, or cyberattacks could affect their ability to deliver a product or service to the Group or result in lost or compromised information of the Group or its clients. Clients can also be sources of cybersecurity risk to the Group, particularly when their activities and systems are beyond the Group's own security and control systems. However, where cybersecurity incidents are due to client failure to maintain the security of their own systems and processes, clients will generally be responsible for losses incurred.

To protect the confidentiality, integrity and availability of the Firm and Group's infrastructure, resources and information, the Firm leverages the ORMF to ensure risks are identified and managed within defined corporate tolerances. The Firm's Board of Directors and the Audit Committee are regularly briefed on the Firm's cybersecurity policies and practices as well as its efforts regarding significant cybersecurity events.

Reputation risk

Reputation risk is the risk that an action, transaction, investment or event will reduce trust in the Group's integrity or competence by our various constituents, including clients, counterparties, regulators, employees and the broader public.

Risk management

Maintaining the Group's reputation is the responsibility of each individual employee. The Firm's Reputation Risk Governance policy explicitly vests each employee with the responsibility to consider the reputation of the Firm when engaging in any activity. Since the types of events that could harm the Firm's reputation are so varied across the Firm's LOBs, each LOB has a separate reputation risk governance infrastructure in place, which consists of three key elements: clear, documented escalation criteria appropriate to the business; a designated primary discussion forum - in most cases, one or more dedicated reputation risk committees; and a list of designated contacts, to whom questions relating to reputation risk should be referred. LOB reputation risk governance is overseen by a Firmwide Reputation Risk Governance function, which provides oversight of the governance infrastructure and process to support the consistent identification, escalation, management and monitoring of reputation risk issues Firmwide.

Critical accounting estimates

The Group's accounting policies and use of estimates are integral to understanding its reported results. The Group's most complex accounting estimates require management's judgement to ascertain the appropriate carrying value of assets and liabilities. The Firm and the Group has established policies and control procedures intended to ensure that estimation methods, including any judgements made as part of such methods, are well-controlled, independently reviewed and applied consistently from period to period. The methods used and judgements made reflect, among other factors, the nature of the assets or liabilities and the related business and risk management strategies, which may vary across the Group's businesses and portfolios. In addition, the policies and procedures are intended to ensure that the process for changing methodologies occurs in an appropriate manner. The Group believes its estimates for determining the carrying value of its assets and liabilities are appropriate. A description of the Group's critical accounting estimates involving significant judgements is set out in note to the financial statements.

Corporate employee policy

It is the policy of the Company and the Group to ensure equal opportunity for all persons without discrimination on the basis of race, colour, religion, sex, national origin, age, handicap, veteran status, marital status or sexual orientation. This policy of equal opportunity applies to all employment practices including, but not limited to, recruiting, hiring, promotion, training and compensation.

Where existing employees become disabled, it is the Company and Group policy wherever practicable to provide continuing employment under normal terms and conditions and to provide training and career development and promotion wherever appropriate.

With the aim of ensuring that views are taken into account when decisions are made employee consultation has continued at all levels where it is likely to affect their interests. All employees are aware of the financial and economic performance of their business units and of the Group as a whole. Communication with all employees continues through the intranet and other forums.

JP Morgan Chase Bank, N.A. operates an employee share scheme for all employees of JPMorgan Chase & Co. and its subsidiaries, to acquire a proprietary and vested interest in the growth and performance of the Firm..

By order of the Board

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J. P. Griffin

Director

....

E. J. Kemp

Director

25 September 2017

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Directors' report

The directors present their report and audited financial statements of J.P. Morgan Capital Holdings Limited (the "Company" or "Parent Company") together with its subsidiaries ("the Group") for the year ended 31 December 2016. The registered number of the Company is 03871969.

Results and dividends

The results for the year are set out on page 31 and shows the Group's profit for the year after taxation is $2,937 million (2015: $3,211 million).

J.P. Morgan Securities Plc ("JPMS plc") paid ordinary dividends of $5 million (2015: $5 million) to a non-controlling interest entity, J.P. Morgan Capital Financing Limited.

J.P. Morgan Chase International Holdings ("JPMCIH") paid preference dividends of $314 million (2015: $nil) to a non-controlling interest entity, J.P. Morgan Whitefriars (UK).

No final dividend was paid or proposed by the Company for 2016 (2015: $nil).

Post balance sheet events

As mentioned in the Regulatory developments section of the Strategic report on page 3, during 2017 management took steps to simplify the UK legal entity structure of the Group, resulting in two subsidiaries within the Group, namely J.P. Morgan Chase (UK) Holdings Limited ("JPMCUKHL") and JPMCIH being placed into members' voluntary liquidation.

On 20 April 2017, JPMS plc paid interim dividends of $359 million on preference shares, and $7 million on preferred ordinary shares.

During the first quarter of 2017, the JPMS plc further obtained standalone credit ratings of 'A1/P-1' and 'AA-/F1+' with stable outlooks from Moody's Investors Service and Fitch Ratings, respectively.

Financial risk management

Refer to the Strategic Report for details on financial risk management.

Directors

The directors of the Company who served during the year and up to the date of signing the financial statements were as follows:

A. J. Cameron	(Resigned 31 January 2017)
J. P. Griffin	
E. J. Kemp	
J. J. Lava	(Appointed 26 February 2016)
F.M.P. Mouchel	(Appointed 30 June 2017)
D. A. Toennies	(Appointed 26 February 2016)

Directors' interests

None of the directors has any beneficial interest in the Company. The Company is a subsidiary of a company incorporated in the United States. The ultimate holding company is a body corporate incorporated outside England and Wales. The directors are not required to notify the Company of any interests in shares of that or any other body incorporated outside England and Wales.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Directors' report (continued)

Statement of directors' responsibilities

The directors are responsible for preparing the Strategic Report, Directors' Report and financial statements in accordance with applicable law and regulations.

Company Law requires the directors to prepare financial statements for each financial year. Under that law the directors have prepared the Group and Parent Company financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice), including Financial Reporting Standard 102 'The Financial Reporting Standard applicable in the United Kingdom and the Republic of Ireland' ("FRS 102"). Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Company and the Group and of the profit or loss of the Group for the period.

In preparing these financial statements, the directors are required to:

- select suitable accounting polices and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable Accounting Standards comprising FRS 102 have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company and the Group will continue in business.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and the Group and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Company and the Group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Disclosure of information to auditors

Each person who is a director of the Company at the date of approval of this report confirms that:

- so far as the director is aware, there is no relevant audit information of which the Company's auditors are unaware; and
- each director has taken all the steps that he or she ought to have taken as a director to make himself or herself aware of any relevant audit information and to establish that the Company's auditors are aware of that information.

Qualifying third party indemnity provision

An indemnity is provided to the directors of the Company under the By-laws of JPMorgan Chase against liabilities and associated costs which they could incur in the course of their duties to the Company. The indemnity was in force during the financial year and also at the date of approval of these financial statements and a copy of the By-laws of JPMorgan Chase & Co is kept at the registered office of the Company.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Directors' report (continued)

Company secretary

The joint secretaries of the Company who served during the year were as follows:

P. Steenfeldt-Kristensen

J.P. Morgan Secretaries (UK) Limited

Registered address

25 Bank Street
Canary Wharf
London
E14 5JP
England

Independent auditors

Resolutions to reappoint PricewaterhouseCoopers LLP as auditors of the Company and to autorise the directors to set the auditors' remuneration will be proposed at the annual general meeting.

By order of the Board

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J. P. Griffin

Director

....

E. J. Kemp

Director

25 September 2017

Independent auditors' report to the members of J.P. Morgan Capital Holdings Limited

Report on the financial statements

Our opinion

In our opinion, J.P. Morgan Capital Holdings Limited's Group financial statements and Parent Company's financial statements (the "financial statements"):

- give a true and fair view of the state of the Group's and of the Parent Company's affairs as at 31 December 2016 and of the Group's profit and cash flows for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

What we have audited

The financial statements, included within the Consolidated annual report ("Annual Report"), comprise:

- the Consolidated and Parent Company balance sheets as at 31 December 2016;
- the Consolidated income statement and Consolidated statement of comprehensive income for the year then ended;
- the Consolidated statement of cash flows for the year then ended;
- the Consolidated and Parent Company statements of changes in equity for the year then ended; and
- the notes to the financial statements, which include a summary of significant accounting policies and other explanatory information.

Certain required disclosures have been presented elsewhere in the Annual Report, rather than in the notes to the financial statements. These are cross-referenced from the financial statements and are identified as audited

The financial reporting framework that has been applied in the preparation of the financial statements is United Kingdom Accounting Standards, comprising FRS 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland', and applicable law (United Kingdom Generally Accepted Accounting Practice).

In applying the financial reporting framework, the directors have made a number of subjective judgements, for example in respect of significant accounting estimates. In making such estimates, they have made assumptions and considered future events.

Opinion on other matter prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Strategic report and the Directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Strategic report and the Directors' report have been prepared in accordance with applicable legal requirements.

In addition, in light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we are required to report if we have identified any material misstatements in the Strategic report and the Directors' report. We have nothing to report in this respect.

Other matters on which we are required to report by exception

Adequacy of accounting records and information and explanations received

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the Parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Company financial statements are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Independent auditors' report to the members of J.P. Morgan Capital Holdings Limited (continued)

Directors' remuneration

Under the Companies Act 2006 we are required to report to you if, in our opinion, certain disclosures of directors' remuneration specified by law are not made. We have no exceptions to report arising from this responsibility.

Responsibilities for the financial statements and the audit

Our responsibilities and those of the directors

As explained more fully in the Statement of directors' responsibilities set out on page 27, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland) ("ISAs (UK & Ireland)"). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

This report, including the opinions, has been prepared for and only for the Parent Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

What an audit of financial statements involves

We conducted our audit in accordance with ISAs (UK & Ireland). An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of:

- whether the accounting policies are appropriate to the group's and the Parent Company's circumstances and have been consistently applied and adequately disclosed;
- the reasonableness of significant accounting estimates made by the directors; and
- the overall presentation of the financial statements.

We primarily focus our work in these areas by assessing the directors' judgements against available evidence, forming our own judgements, and evaluating the disclosures in the financial statements.

We test and examine information, using sampling and other auditing techniques, to the extent we consider necessary to provide a reasonable basis for us to draw conclusions. We obtain audit evidence through testing the effectiveness of controls, substantive procedures or a combination of both.

In addition, we read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

With respect to the Strategic report and Directors' report, we consider whether those reports include the disclosures required by applicable legal requirements.

Paolo Taurae

Paolo Taurae (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountant and Statutory Auditors
London 25 September 2017

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Consolidated income statement

Year ended 31 December	Note	2016 $'m	2015 $'m
Interest and similar income		2,075	2,066
Interest expense and similar charges		(1,336)	(1,250)
Net interest income	8	**739**	**816**
Fees and commissions income		4,192	4,591
Fees and commissions expense	9	(1,209)	(932)
Trading profits		4,261	3,821
Other operating income		23	49
Operating profit		**8,006**	**8,345**
Administrative expenses		(4,070)	(4,661)
Depreciation and amortisation		(33)	(30)
Profit on ordinary activities before taxation	11	**3,903**	**3,654**
Tax on profit on ordinary activities	12	(966)	(443)
Profit for the financial year		**2,937**	**3,211**
Profit attributable to:			
- Owners of the parent		2,937	3,211
- Non-controlling interests		—	—
		2,937	**3,211**

The profit for the financial year resulted from continuing operations.

Consolidated statement of comprehensive income

Year ended 31 December	Note	2016 $'m	2015 $'m
Profit for the financial year		**2,937**	**3,211**
Other comprehensive income: items that will not be reclassified to profit or loss			
Movements in financial assets available-for-sale reserve	18	1	2
Foreign currency translation adjustment		(1)	(34)
Actuarial (loss)/gain on pension schemes		(75)	20
Tax effect of movement in pension reserves		19	—
Total comprehensive income for the year		**2,881**	**3,199**
Total comprehensive income attributable to:			
- Owners of the parent		2,881	3,199
- Non-controlling interests		—	—
		2,881	**3,199**

The notes on pages 37 - 78 form an integral part of these financial statements.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Consolidated balance sheet

31 December	Note	2016 $'m	2015 $'m
Assets			
Cash and balances at central banks		20,768	269
Cash at bank and in hand		127	413
Loans and advances to banks	13	6,567	5,184
Loans and advances to customers	14	8,766	10,293
Securities purchased under resale agreements	15	141,670	143,117
Securities borrowed	15	25,665	14,873
Financial assets held for trading	16	324,203	301,252
Financial assets designated at fair value through profit or loss	17	330	140
Financial assets available-for-sale	18	107	20
Subordinated loans	19	—	245
Other assets	20	57,466	33,894
Prepayments and accrued income		553	558
Goodwill	21	101	128
Intangible assets		16	9
Investments in JPMorgan Chase undertakings	22	12	14
Tangible fixed assets		9	6
Total assets		**586,360**	**510,415**
Liabilities			
Deposits by banks	23	142	114
Customer accounts	24	23,504	23,874
Securities sold under repurchase agreements	15	61,657	58,937
Securities loaned	15	20,048	11,030
Financial liabilities held for trading	25	294,786	264,206
Other liabilities	26	139,303	108,533
Accruals and deferred income		1,638	1,000
Subordinated liabilities	27	4	5
Total liabilities		**541,082**	**467,699**
Equity			
Non-controlling interest	30	2,064	2,064
Called-up share capital	31	4,069	4,069
Share premium account		4,012	4,012
Capital contribution reserve		7,020	7,020
Pension reserve		(99)	(43)
Other reserves		578	584
Retained earnings		27,634	25,010
Total non-controlling interest and equity funds		**45,278**	**42,716**
Total liabilities and equity funds		**586,360**	**510,415**
Analysis of non-controlling interest and equity funds			
Equity funds		43,214	40,652
Non-controlling interest	30	2,064	2,064
		45,278	42,716
Memorandum items			
Commitments	33	19,571	20,474

Approved and authorised for issue by the Board of Directors on 22 September 2017 and signed on its behalf on 25 September by:

J. P. Griffin (Director)

E. J. Kemp (Director)

The notes on pages 37 - 78 form an integral part of these financial statements.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Company balance sheet

31 December	Note	2016 $'m	2015 $'m
Assets			
Cash at bank and in hand		2,759	1,805
Loans to Group undertakings		94	98
Subordinated loans	19	12,283	12,528
Prepayments and accrued income		8	3
Investments in Group undertakings	22	14,772	14,772
Total assets		**29,916**	**29,206**
Liabilities			
Other liabilities	26	5	4
Total liabilities		**5**	**4**
Equity			
Called-up share capital	31	4,069	4,069
Share premium account		4,012	4,012
Capital contribution reserve		7,020	7,020
Other reserve		407	413
Retained earnings		14,403	13,688
Total equity funds		**29,911**	**29,202**
Total liabilities and equity funds		**29,916**	**29,206**

Approved and authorised for issue by the Board of Directors on 22 September 2017 and signed on its behalf on 25 September 2017 by:

J. P. Griffin (Director)

E. J. Kemp (Director)

The notes on pages 37 - 78 form an integral part of these financial statements.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Consolidated statement of changes in equity

	Note	Called-up share capital	Share premium account	Capital contribution reserve	Pension reserve	Other reserves	Retained earnings	Total equity attributable to owners of the parent	Non-controlling interest	Total equity
		$'m	$'m	$'m	$'m	$'m	$'m	$'m	$'m	$'m
Balance as at 1 January 2015		**4,069**	**4,012**	**4,525**	**(63)**	**616**	**21,804**	**34,963**	**2,064**	**37,027**
Profit for the financial year		—	—	—	—	—	3,211	3,211	—	3,211
Other comprehensive income for the year:										
Movements in financial assets available-for-sale reserve	18	—	—	—	—	2	—	2	—	2
Foreign currency translation adjustment		—	—	—	—	(34)	—	(34)	—	(34)
Actuarial gain on pension schemes		—	—	—	20	—	—	20	—	20
Tax effect on movement in pension reserve		—	—	—	—	—	—	—	—	—
Total comprehensive income for the year		—	—	—	20	(32)	3,211	3,199	—	3,199
Capital Contribution	22	—	—	2,495	—	—	—	2,495	—	2,495
Dividends paid		—	—	—	—	—	(5)	(5)	—	(5)
Balance as at 31 December 2015		**4,069**	**4,012**	**7,020**	**(43)**	**584**	**25,010**	**40,652**	**2,064**	**42,716**
Profit for the financial year		—	—	—	—	—	2,937	2,937	—	2,937
Other comprehensive income for the year:										
Movements in financial assets available-for-sale reserve	18	—	—	—	—	1	—	1	—	1
Foreign currency translation adjustment		—	—	—	—	(1)	—	(1)	—	(1)
Movement in net wealth tax reserve		—	—	—	—	(6)	6	—	—	—
Actuarial loss on pension schemes		—	—	—	(75)	—	—	(75)	—	(75)
Tax effect on movement in pension reserve		—	—	—	19	—	—	19	—	19
Total comprehensive income for the year		—	—	—	(56)	(6)	2,943	2,881	—	2,881
Dividends paid		—	—	—	—	—	(319)	(319)	—	(319)
Balance as at 31 December 2016		**4,069**	**4,012**	**7,020**	**(99)**	**578**	**27,634**	**43,214**	**2,064**	**45,278**

The notes on pages 37 - 78 form an integral part of these financial statements.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Company statement of changes in equity

	Note	Called-up share capital	Share premium account	Capital contribution reserve	Other reserves	Retained earnings	Total shareholders' funds
		$'m	$'m	$'m	$'m	$'m	$'m
Balance as at 1 January 2015		**4,069**	**4,012**	**4,525**	**413**	**12,974**	**25,993**
Profit for the financial year		—	—	—	—	714	714
Capital contribution	22	—	—	2,495	—	—	2,495
Balance as at 31 December 2015		**4,069**	**4,012**	**7,020**	**413**	**13,688**	**29,202**
Profit for the financial year		—	—	—	—	709	709
Release of net wealth reserve		—	—	—	(6)	6	—
Balance as at 31 December 2016		**4,069**	**4,012**	**7,020**	**407**	**14,403**	**29,911**

Under Luxembourg law, the Company is required to maintain a minimum legal reserve of 5% of its annual net income, after deduction of any losses brought forward, until this reserve equals 10% of the subscribed capital. This reserve may not be distributed in the form of dividends, or otherwise, during the life of the Company. The appropriation to legal reserve is done after approval at the general meeting of shareholders. The Company's and Group's Legal reserve, which is recognised within Other reserves, was $407 million as at 31 December 2016 (2015: $407 million).

Since 1 January 2002, the Company has decreased its Net Wealth Tax charge according to the Luxembourg tax law. In order to comply with the tax law, the Company has decided to credit to a non-distributable reserve an amount equal to five times the reduction of the Net Wealth Tax, which was $6 million. This reserve is non-distributable for a period of five years from the year following the one during which the Net Wealth Tax was reduced. On 21 June 2016, the shareholders acknowledged the release of the Net Wealth Tax Reserve over 5 years old, amounting to $6 million and its transfer to the retained earnings.

The notes on pages 37 - 78 form an integral part of these financial statements.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Consolidated statement of cash flows

Year ended 31 December	Note	**2016** $'m	**2015** $'m
Cash flows from operating activities			
Cash generated from/(used in) operations	32	**18,569**	**(1,883)**
Income taxes paid		(341)	(183)
Net cash generated from/(used in) operating activities		**18,228**	**(2,066)**
Cash flow from investing activities			
Additions to intangible assets		(10)	(6)
Additions to tangible fixed assets		(6)	(1)
Net cash used in investing activities		**(16)**	**(7)**
Cash flow from financing activities			
Capital contribution	22	—	2,495
Dividends paid		(319)	(5)
Repayment of subordinated loans	19	245	2
Net cash (used in)/generated from financing activities		**(74)**	**2,492**
Net increase in cash and cash equivalents		18,138	419
Cash and cash equivalents at the beginning of the year		5,799	5,380
Cash and cash equivalents at the end of the year		**23,937**	**5,799**
Cash and cash equivalents consist of:			
Cash and balances at central banks		20,768	269
Cash at bank and in hand		127	413
Loans and advances to banks, due within three months or less		3,042	5,117
Cash and cash equivalents		**23,937**	**5,799**

The notes on pages 37 - 78 form an integral part of these financial statements.

1. General information

The Company is incorporated in England and Wales and its primary place of business is Luxembourg. The address of its registered office is 25 Bank Street, Canary Wharf, London, E14 5JP. The Company's immediate parent undertaking is J.P. Morgan International Finance Limited, which is incorporated in the state of Delaware in the United States of America. The Company's ultimate parent undertaking is JPMorgan Chase & Co., which is the ultimate controlling parent and is also incorporated in the state of Delaware in the United States of America.

The Groups' consolidated financial statements are available to the public and can be obtained from the Company's registered office.

2. Basis of preparation

The consolidated financial statements have been prepared in accordance with Financial Reporting Standard 102, 'The Financial Reporting Standard applicable in the UK and Republic of Ireland' ("FRS 102"). The financial statements have been prepared on a going concern basis under the historical cost convention as modified by the revaluation of certain financial assets and financial liabilities measured at fair value through profit or loss, and in accordance with the Companies Act 2006. Reclassification of and adjustments to prior year amounts have been made to conform with current year presentations and to provide additional transparency and information on the nature of the balances in these financial statements.

The following exemptions have been applied in the preparation of these financial statements, in accordance with FRS 102:

- Statement of cash flows of the Company, on the basis that it is a qualifying entity and the consolidated statement of cash flows included in these financial statements includes the Company's cash flows;
- The Company key management personnel compensation as required by FRS 102 paragraph 33.7.

The directors have taken advantage of the exemption available under section 408 of the Companies Act 2006, and not presented a stand alone income statement for the Company. The Company made a profit of $709 million (2015: $714 million) during the year.

3. Basis of consolidation

The Group consolidated financial statements include the financial statements of the Company and all of its subsidiary undertakings together with the Group's share of the results of associates for the year ended 31 December 2016.

The results of special purpose entities ("SPEs"), which meet the definition of a subsidiary undertaking are included within the consolidated financial statements.

A subsidiary is an entity controlled by the Group. Control is defined as the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities.

Where a subsidiary has different accounting policies to the Group, adjustments are made to those subsidiary financial statements to apply the Group's accounting policies when preparing the consolidated financial statements.

An associate is an entity, being neither a subsidiary nor a joint venture, in which the Group holds a long-term interest and where the Group has significant influence. The Group considers that it has significant influence where it has the power to participate in the financial and operating decisions of the associate. The results of associates are accounted for using the equity method of accounting.

Any subsidiary undertakings or associates sold or acquired during the year are included up to, or from, the dates of change of control or change of significant influence respectively.

Where control of a subsidiary is lost, the gain or loss is recognised in the consolidated income statement. The cumulative amounts of any exchange differences on translation, recognised in equity, are not included in the gain or loss on disposal and are transferred to retained earnings. The gain or loss also includes amounts included in other comprehensive income that are required to be reclassified to profit or loss but excludes those amounts that are not required to be reclassified.

Where control of a subsidiary is achieved in stages, the initial acquisition that gave the Group control is accounted for as a business combination. Thereafter where the Group increases its controlling interest in the subsidiary the transaction is treated as a transaction between equity holders. Any difference between the fair value of the consideration paid and the carrying amount of the non-controlling interest acquired is recognised directly in equity, No changes are made to the carrying value of assets, liabilities or provisions for contingent liabilities.

All intra-Group transactions, balances, income and expenses are eliminated on consolidation. Adjustments are made to eliminate the profit or loss arising on transactions with associates to the extent of the Group's interest in the entity.

4. Accounting and reporting developments

New standards, amendments and interpretations not yet adopted

IFRS 9 'Financial instruments' ("IFRS 9") was issued by the International Accounting Standards Board ("IASB") in July 2014. The standard includes a new model for classification and measurement of financial assets and a single, forward-looking 'expected loss' impairment model. The standard replaces the existing guidance in IAS 39 'Financial Instruments: Recognition and Measurement' ("IAS 39") and carries forward the guidance on recognition and derecognition of financial instruments from IAS 39. IFRS 9 is applicable retrospectively, except where otherwise prescribed by transitional provisions of the standard, and is effective for annual periods beginning on or after 1 January 2018. The Company is currently assessing and quantifying the impact of IFRS 9 on the financial statements.

IFRS 15 'Revenue from Contracts with Customers' ("IFRS 15") was issued by the IASB in May 2014 for retrospective application in annual periods beginning on or after 1 January 2018. IFRS 15 establishes a framework for determining whether, how much and when revenue from contracts with customers is recognised. It replaces existing revenue recognition guidance, including IAS 18 'Revenue'. The Company is currently assessing and quantifying the impact of IFRS 15 on the financial statements.

5. Critical accounting estimates and judgements

The preparation of financial statements requires management to make judgements, estimates and assumptions that affect the amounts recognised in the financial statements. The nature of estimation means that actual outcomes could differ from those estimates. The following judgements have had the most significant effect on amounts recognised in the consolidated financial statements:

Fair value measurement

The Group carries a significant portion of its assets and liabilities at fair value on a recurring basis. Estimating fair value often requires the application of judgement. The type and level of judgement required is largely dependent on the amount of observable market information available to the Group. For instruments valued using internally developed models that use significant unobservable inputs and are therefore classified within level 3 of the valuation hierarchy, judgements used to estimate fair value are more significant than those required when estimating the fair value of instruments classified within levels 1 and 2.

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate model to use. Second, the lack of observability of certain significant inputs requires management to assess all relevant empirical data in deriving valuation inputs - including, for example, transaction details, yield curves, interest rates, prepayment rates, default rates, volatilities, correlations, equity or debt prices, valuations of comparable instruments, foreign exchange rates and credit curves. For further discussion of the valuation of level 3 instruments, including unobservable inputs used, see note 28.

For instruments classified in levels 2 and 3, management judgement must be applied to assess the appropriate level of valuation adjustments, the Group's credit-worthiness, market funding rates, liquidity considerations, unobservable parameters, and for portfolios that meet specified criteria, the size of the net open risk position. The judgements made are typically affected by the type of product and its specific contractual terms, and the level of liquidity for the product or within the market as a whole. For further discussion of valuation adjustments applied by the Group see note 28.

The use of methodologies or assumptions different than those used by the Group could result in a different estimate of fair value at the reporting date. For a detailed discussion of the Group's valuation process and hierarchy, its determination of fair value for individual financial instruments, and the potential impact of using reasonable possible alternative assumptions for the valuations, see note 28.

Defined benefit plans

The present value of the defined benefit obligation depends on various factors that are determined on an actuarial basis using a number of assumptions. This involves making assumptions about discount rates, future salary increases, price inflation and future pension increases. Substantial changes in these assumptions affect the amount of the recognised defined benefit obligation. For further details, see note 34.

J.P. MORGAN CAPITAL HOLDINGS LIMITED
Notes to the financial statements (continued)

6. Significant accounting policies

The following are principal accounting policies applied in the preparation of these financial statements. These policies have been applied consistently to all the years presented, unless otherwise stated.

6.1 Foreign currency translation

Monetary assets and liabilities in foreign currencies are translated into United States ("U.S.") dollars at rates of exchange ruling on the balance sheet date. Income and expense items denominated in foreign currencies are translated into U.S. dollars at exchange rates prevailing at the date of the transactions. Any gains or losses arising on translation are taken directly to the consolidated income statement.

Non-monetary items denominated in foreign currencies that are stated at historical cost are translated into U.S. dollars at the date of the transaction.

Non-monetary items denominated in foreign currencies that are stated at fair value are translated into U.S. dollars at foreign exchange rates ruling at the dates when the fair values were determined. Translation differences arising on non-monetary items measured at fair value are recognised in the consolidated income statement except for differences arising on non-monetary financial assets available-for-sale, which are included in financial assets available-for-sale reserve.

The assets, including related goodwill where applicable, and liabilities of foreign operations whose functional currency is not U.S. dollars, are translated into the Group's presentation currency at the rate of exchange ruling at the balance sheet date. The results of foreign operations whose functional currency is not U.S. dollars are translated into U.S. dollars at the average rates of exchange for the reporting period.

Exchange differences arising from the re-translation of opening foreign currency net investments, and exchange differences arising from re-translation of the results for the reporting period from the average rate to the exchange rate prevailing at the period end, are recognised through the consolidated statement of comprehensive income. On disposal of a foreign operation, exchange differences relating thereto and previously recognised in reserves are recognised in the consolidated income statement. The consolidated financial statements have been presented in U.S. dollars as the directors are of the opinion that this is the functional currency of the Group.

6.2 Functional and presentation currency

Items included in the financial statements of the Company are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). Taking into account the cash flows, the financing structure, including U.S. dollar equity and inter-entity financing arrangements with JPMorgan Chase Bank, N.A., U.S. dollar is considered as the functional and presentation currency of the Company.

6.3 Income and expense recognition

Interest income and expense are recognised on an effective interest rate basis. Effective interest rate is the rate that exactly discounts estimated future cash flows to the instrument's initial carrying amount. Calculation of the effective interest rate takes into account fees receivable, that are an integral part of the instrument's yield, premiums or discounts on acquisition or issue, early redemption fees and transaction costs. All contractual terms of a financial instrument are considered when estimating future cash flows.

Fees and commissions are recognised when the underlying contract becomes legally binding or at the agreed due date if later. Investment banking fees (including advisory and underwriting fees) are recognised on an accrual basis and recorded in the income statement in the period earned provided they are receivable under the terms of the contract and collectability is reasonably assured.

Profits and losses resulting from the purchase and sale of securities and the revaluation of financial instruments are recognised as trading gains or losses on a trade-date basis, excluding the associated interest.Interest receivable and payable are recognised on an effective interest rate basis. Effective interest rate is the rate that exactly discounts estimated future cash flows to the instrument's initial carrying amount. Calculation of the effective interest rate takes into account fees receivable (that are an integral part of the instrument's yield), premiums or discounts on acquisition or issue, early redemption fees and transaction costs. All contractual terms of a financial instrument are considered when estimating future cash flows.

6. Significant accounting policies (continued)

6.4 Dividend recognition

Dividend income is recognised when the right to receive payment is established. Dividends of assets or shares in subsidiaries are recognised at the fair value of the consideration received by the transferee and at book value by the transferor. Where the consideration received is an investment in share capital of an entity, the fair value is determined by the market value of the underlying net assets and businesses of the investee.

Dividends in kind undertaken to put the transferring entity into liquidation will be recognised at book value by both the transferee and transferor.

Where shares received are illiquid or unlisted and are not readily convertible to cash, the dividends are recognised in other comprehensive income.

Dividend distributions are recognised in the period in which they are declared and approved.

6.5 Tangible fixed assets

Tangible fixed assets are stated at cost less accumulated depreciation. Tangible fixed assets are depreciated on a straight-line basis over their useful economic lives at the annual rates detailed below.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognised. All other repairs and maintenance are charged to the income statement during the financial period in which they are incurred.

Furniture and fittings	10%
Computers and similar office equipment	33%
Leasehold improvements	10% or life of the lease if under 10 years
Leasehold property	999 years

The cost of land and buildings is the value of consideration paid to acquire the land and any directly attributable costs of bringing the asset to working condition for its intended use. All expenditure incurred that are directly attributable to the construction of the building is capitalised as a fixed asset on an accruals basis.

The Group selects its depreciation rates and reviews them annually to take account of any changes in circumstances. When setting useful economic lives, the principal factors the Group takes into account are the expected rate of technological developments, expected market requirements for the equipment and the intensity at which the assets are expected to be used.

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in the income statement.

6.6 Intangible assets

Intangible assets are recorded at cost less accumulated amortisation and any provision for impairment.

Internally generated intangible assets, such as software, are recognised only if an asset is created that can be identified; management intends to complete the software and use it; it is probable that the asset created will generate future economic benefits; adequate technical, financial and other resources to complete the development and to use the software are available and that the development cost of the asset can be measured reliably. Where no internally generated intangible asset can be recognised, development expenditure is recorded as an expense in the period in which it is incurred.

Intangible assets are internally generated and costs include salaries and payroll-related expenses for employees directly associated to the project and consultants' fees.

Amortisation is calculated on a straight-line basis over three years and starts as soon as the project is moved to production.

6. Significant accounting policies (continued)

6.7 Business combinations and goodwill

i. Combination of businesses

Business combinations are accounted for by applying the acquisition method of accounting.

The cost of a business combination is the fair value of the consideration given, liabilities incurred or assumed and of equity instruments issued plus the costs directly attributable to the business combination. Where control is achieved in stages, the cost is the consideration at the date of each transaction.

On acquisition of a business, fair values are attributed to the identifiable assets, liabilities and contingent liabilities unless the fair value cannot be measured reliably, in which case the value is incorporated in goodwill. Where the fair value of contingent liabilities cannot be reliably measured they are disclosed on the same basis as other contingent liabilities.

Goodwill recognised represents the excess of the fair value and the directly attributable costs of the purchase consideration over the fair values to the Firm's interest in the identifiable net assets, liabilities and contingent liabilities acquired. Goodwill is amortised on a straight line basis over its expected useful life.

ii. Combination of businesses under common control

Predecessor accounting is applied to transfers of businesses between entities under common control, where all combining entities are controlled by the same entity before and after the business acquisition. Assets and liabilities are recognised at their predecessor carrying amounts (i.e. the carrying amounts of assets and liabilities in the books and records of the transferor prior to the transfer) with no fair value adjustments. Any difference between the cost of acquisition and aggregate book value of the assets and liabilities on the date of transfer of the acquired entity is recognised as an adjustment to equity. As a result, no goodwill is recognised by the business combination.

6.8 Investments in JPMorgan Chase undertakings

Investments JPMorgan Chase undertakings are stated at cost less provision for any impairment. Where the investments in the share capital of Group undertakings are acquired by way of a dividend in kind, these are recognised at fair value.

Investments in associate are accounted for under the equity method.

6.9 Financial assets and financial liabilities

In respect of financial instruments, the Group has chosen to adopt the recognition and measurement provisions of IAS 39 'Financial Instruments: Recognition and Measurement ("IAS 39") and the disclosure and presentation requirements of Sections 11 and 12 of FRS 102 'Financial Instruments' ("Section 11" and "Section 12").

The Group classifies its financial assets and financial liabilities in the following categories: financial assets and financial liabilities held for trading; financial assets and financial liabilities designated at fair value through profit or loss, financial assets available-for-sale and loans and receivables and financial liabilities held at amortised cost. The directors determine the classification of its investments at initial recognition.

The Group recognises a financial asset or a financial liability on its balance sheet when it becomes party to the contractual provisions of the instrument, i.e., on trade date. Regular way purchases and sales of financial assets are also recognised on the trade date, the date on which the Group commits to purchase or sell the asset.

i. Financial assets and financial liabilities held for trading

The Group considers a financial asset or financial liability as held for trading if it is acquired or incurred principally for the purpose of selling or repurchasing it in the near term, or forms part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking; or it is a derivative.

Financial assets and financial liabilities held for trading comprise both debt and equity securities and derivatives. These instruments are either held for trading purposes or used for hedging certain assets, liabilities, positions, cash flows or anticipated transactions. Included in financial assets held for trading are the reported receivables (unrealised gains) and in financial liabilities held for trading the reported payables (unrealised losses) related to derivatives. The instruments are initially recognised at fair value in the balance sheet with transaction costs being recorded in profit or loss and any gains or losses are taken directly to the consolidated income statement. Subsequently, they are measured at fair value with movement included in trading profit and loss.

Since both the debt and equity securities and the derivatives are managed on a unified basis as part of the trading strategy, which includes economic hedging relationships between cash securities and derivatives, it is not meaningful to show the gains and losses on the cash instruments separately from the gains and losses on the derivatives; the net gain or loss is reported as trading profits.

6. Significant accounting policies (continued)

6.9 Financial assets and financial liabilities (continued)

ii. Financial assets and financial liabilities designated at fair value through profit or loss

Financial assets and financial liabilities that the Group designates on initial recognition as being at fair value through profit or loss are recognised at fair value, with transaction costs being recognised in profit or loss and are subsequently measured at fair value. Gains and losses on financial assets and financial liabilities that are designated at fair value through profit or loss are recognised in the consolidated income statement as they arise. A financial instrument may only be designated at inception as held at fair value through profit or loss and cannot subsequently be changed.

Financial assets or financial liabilities are designated as at fair value through profit or loss only if such designation (a) eliminates or significantly reduces a measurement or recognition inconsistency; or (b) applies to a group of financial assets, financial liabilities or both that the Group manages and evaluates on a fair value basis; or (c) relates to an instrument which contains an embedded derivative unless the embedded derivative does not significantly modify the cash flows required by the contract or when a similar hybrid instrument is considered that separation of the embedded derivative is prohibited.

The Group has designated certain equity securities and wholesale loans at fair value through profit or loss on the basis that they are managed and their performance evaluated on a fair value basis.

iii. Financial assets available-for-sale

Non-derivative financial assets intended to be held for an indefinite period of time, which may be sold in response to needs for liquidity or changes in interest rates, exchange rates, or equity prices are included within the financial assets available-for-sale category. These are initially recognised at fair value plus directly related transaction costs and subsequently measured at fair value. Any changes in fair values of such assets subsequent to initial recognition are reported as movements in financial assets available-for-sale reserve until the investment is sold, collected or otherwise disposed of, or the financial assets are considered impaired, at which time the cumulative gain or loss previously reported in the consolidated statement of total comprehensive income is included in the consolidated income statement.

iv. Loans and receivables and financial liabilities at amortised cost

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market except those that are classified as held for trading or designated fair value through profit or loss.

Loans and receivables are initially recognised at fair value including directly related incremental transaction costs. They are subsequently measured at amortised cost, using the effective interest method less any impairment losses. Interest is recognised in the income statement as 'Interest and similar income' using the effective interest rate method (see below).

Financial liabilities include trade creditors and borrowings and are recognised initially at fair value including directly related incremental transaction costs and subsequently measured at amortised cost using the effective interest method (see below).

The effective interest rate is a method of calculating the amortised cost of a financial asset or financial liability (or a group of financial assets or financial liabilities) and of allocating the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial asset or financial liability or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability. The effective interest rate is established on initial recognition of the financial asset or financial liability. The calculation of the effective interest rate includes all fees and commissions paid or received, transaction costs, and discounts or premiums that are an integral part of the effective interest rate. Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or financial liability.

6.10 Trade creditors and borrowings

Other financial liabilities are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method.

6.11 Cash and cash equivalents

Cash and cash equivalents includes cash and balances at central banks, cash at bank and in hand, loans and advances to banks with maturities of three months or less, and deposits by banks (shown within liabilities), with maturities of three months or less

6. Significant accounting policies (continued)

6.12 Derecognition of financial assets and financial liabilities

Financial assets are derecognised when the contractual right to receive cash flows from the assets has expired, or has been transferred with either of the following conditions met:

- the Group has transferred substantially all the risks and rewards of ownership of the asset; or
- the Group has neither retained nor transferred substantially all of the risks and rewards; but has relinquished control of the asset.

Financial liabilities are derecognised when they are extinguished, that is when the obligation is discharged, cancelled or expires.

The Group also from time to time enters into certain 'pass-through' arrangements whereby contractual cash flows on a financial asset are passed to a third party. Such financial assets are derecognised from the balance sheet if the terms of the arrangement oblige the Group to only pass on contractual cash flows to the third party that are actually received without material delay, and where the terms of the arrangement also prohibit the Group from selling or pledging the underlying financial asset.

6.13 Fair value

Financial instruments are recognised at fair value on the date of initial recognition and subsequently remeasured at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Fair values are determined by reference to observable market prices where available and reliable. Fair values of financial assets and financial liabilities are based on quoted market prices or dealer price quotations for financial instruments traded in active markets. Where market prices are unavailable, fair value is based on valuation models that consider relevant transaction characteristics (such as maturity) and use as inputs observable or unobservable market parameters, including but not limited to yield curves, interest rates, volatilities, equity or debt prices, foreign exchange rates and credit curves. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value.

For financial assets and liabilities held at fair value, most market parameters in the valuation model are either directly observable or are implied from instrument prices. When input values do not directly correspond to the most actively traded market parameters the model may perform numerical procedures in the pricing such as interpolation when input values do not directly correspond to the most actively traded market trade parameters.

The Group classifies its assets and liabilities according to the FRS 102 fair value hierarchy. The fair value hierarchy is based on the transparency of inputs to the valuation of an asset or liability as of the measurement date. The fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (level 1) and the lowest priority to unobservable inputs (level 3 inputs).

A financial instrument's categorisation within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement.

6.14 Recognition of deferred day one profit and loss

The Group has entered into transactions where fair value is determined using valuation models for which not all inputs are market observable prices or rates. Such a financial instrument is initially recognised at the transaction price, although the value obtained from the relevant valuation model may differ. The difference between the transaction price and the model value, commonly referred to as 'day one profit and loss', is not recognised immediately in the income statement when based on unobservable inputs.

The timing of recognition of deferred day one profit and loss is determined for each class of financial asset and liability. It is either amortised over the life of the transaction, deferred until the instrument's fair value can be determined using market observable inputs, or realised through settlement. The financial instrument is subsequently measured at fair value, adjusted for the deferred day one profit and loss.

6. Significant accounting policies (continued)

6.15 Impairment

Intangible assets, tangible fixed assets and investments in Group undertakings

At each balance sheet date fixed assets are assessed to determine whether there is an indication that the asset may be impaired. If there is such an indication the recoverable amount of the asset is compared to the carrying amount.

The recoverable amount is the higher of the fair value less costs to sell and value in use. Value in use is defined as the present value of the future cash flows before interest and tax obtainable as a result of the asset's continued use. These cash flows are discounted using a pre-tax discount rate that represents the current market risk-free rate and the risks inherent in the asset.

If the recoverable amount is estimated to be lower than the carrying amount, the carrying amount is reduced to its recoverable amount. An impairment loss is recognised in the consolidated income statement, unless the asset has been revalued when the amount is recognised in other comprehensive income to the extent of any previously recognised revaluation. Thereafter any excess loss is recognised in the consolidated income statement.

If an impairment loss is subsequently reversed, the carrying amount of the asset is increased to the revised estimate of its recoverable amount, but only to the extent that the revised carrying amount does not exceed the carrying amount that would have been determined (net of depreciation or amortisation) had no impairment loss been recognised in prior periods. A reversal of an impairment loss is recognised in the consolidated income statement.

Goodwill is allocated on acquisition to the cash generating unit expected to benefit from the synergies of the combination, it is included in the carrying value of cash generating units for impairment testing.

Financial assets

The Group assesses at each balance sheet date whether there is any objective evidence that a financial asset or group of financial assets are impaired. A financial asset or portfolio of financial assets is deemed to be impaired if, and only if, there is an objective evidence of impairment as a result of one or more events that has occurred after the initial recognition of the asset and that the loss event has an adverse impact on the estimated future cash flows of the financial asset or group of financial assets that can be reliably estimated.

When a decline in the fair value of a financial asset available-for-sale has been recognised through the consolidated statement of comprehensive income and there is objective evidence that the asset is impaired, the cumulative loss that had been recognised through the consolidated statement of comprehensive income is removed from reserves and recognised in the consolidated income statement.

The amount of the cumulative loss that is removed from reserves and recognised in the income statement is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in the consolidated income statement.

Impairment losses recognised in profit or loss for an investment in an equity instrument classified as available-for-sale are not reversed through the consolidated income statement.

Impairment losses on loans and receivables are measured as the difference between the financial asset's carrying amount and the present value of the estimated future cash flows discounted at the financial asset's effective interest rate. The loss is recognised in the income statement against the carrying amount of the impaired asset on the balance sheet. Interest continues to be accrued on the reduced carrying amount based on the original effective interest rate of the financial asset.

Specific provisions are raised against specific loans and advances to customers when the Group considers that the credit-worthiness of the borrower has deteriorated such that the recovery of the whole or part of an outstanding advance is in serious doubt.

Impairment provisions are also raised to cover losses which, although not specifically identified, are known from experience to have occurred in the portfolio of loans and advances to customers at the balance sheet date. These provisions are adjusted on a monthly basis by an appropriate charge or reversal of the provision following an assessment of the loan portfolio.

Impairment provisions are determined by modelling the current exposure, taking into account such factors as duration and probabilities of default.

If, in a subsequent period, the amount of the impairment loss, for debt instruments, decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the reversal of the previously recognised impairment loss is recognised in the consolidated income statement.

6. Significant accounting policies (continued)

6.16 Securities purchased under agreement to resell and securities sold under agreement to repurchase

Securities purchased under agreements to resell the securities to the counterparty, and securities sold under agreements to repurchase are treated as collateralised lending and borrowing transactions respectively. The collateral can be in the form of cash or securities. If the collateral is given in cash the transaction is recorded on the balance sheet within securities purchased/sold under agreement to resell/repurchase. If the collateral is received or given in the form of securities the transaction is recorded off balance sheet. The difference between sales and repurchase price is treated as interest and accrued over the life of the agreements using the effective interest rate method.

6.17 Securities borrowed and securities loaned transactions

Securities borrowed and securities loaned are recorded at the amount of cash collateral advanced or received. Securities borrowed and securities loaned transactions require the borrower to deposit cash, letters of credit or other collateral with the lender. If the collateral is received or given in the form of securities the transaction is recorded off balance sheet. Fees received or paid in connection with securities borrowed and loaned are treated as interest income or interest expense and accrued over the life of the transaction using the effective interest rate method.

6.18 Offsetting financial assets and liabilities

Financial assets and financial liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or to realise the asset and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

6.19 Current and deferred income tax

Current tax

Income tax payable on taxable profits (current tax) is recognised as an expense in the period in which the profits arise. Income tax recoverable on tax allowable losses is recognised as a current tax asset only to the extent that it is regarded as recoverable by offset against taxable profits arising in the current or prior period. Current tax is measured using tax rates and tax laws that have been enacted or substantively enacted at the balance sheet date.

Deferred tax

Deferred tax is provided in full, using the liability method, on temporary differences arising from the differences between the tax bases of assets and liabilities and their carrying amounts in the financial statements. Deferred tax is determined using tax rates and legislation enacted or substantively enacted by the balance sheet date, which are expected to apply when the deferred tax asset is realised or the deferred tax liability is settled. Deferred tax assets and liabilities are only offset when there is both a legal right and an intention to settle on a net basis. Current tax and deferred tax is recognised directly in equity if the tax relates to items that are recognised in the same or a different period in equity.

6.20 Provisions for liabilities and charges

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate of the amount of the obligation can be made.

6.21 Pensions and other post-retirement benefits

The Group participates in a defined contribution scheme to which most of its employees belong and in a scheme with a defined benefit and defined contribution section. The defined benefit section is now closed to new members, however a small number of the Group's employees continue to accrue benefits under it.

The Group also participated in one defined contribution scheme, two defined benefit schemes and three defined contribution schemes with minimum interest guarantees ('MIGs') in the European branches of its subsidiaries, JPMS plc and JPMIB.

6. Significant accounting policies (continued)

6.21 Pensions and other post-retirement benefits (continued)

The Group accounts for these in accordance with Section 28 of FRS 102 'Employee benefits' ("Section 28"), as follows:

Defined contribution scheme and sections

A defined contribution plan is a pension plan under which fixed contributions are paid into a separate entity. There is no legal or constructive obligation to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. Obligations for contributions to defined contribution pension plans are recognised as an expense and charged to the consolidated income statement on an accrual basis.

Defined benefit scheme and sections

For the defined benefit scheme operated through JPMS plc, the service cost of providing retirement benefits to employees during the year is charged to the consolidated income statement in accordance with section 28.23 of FRS 102. The pension costs are assessed based on the advice of qualified actuaries so as to recognise the full cost of provision of contracted pension benefits over the period of employees' service lives.

The defined benefit schemes' liabilities are measured on an actuarial basis and scheme assets measured at their fair values separately for each plan. Any surplus or deficit of scheme assets over liabilities is recognised on the balance sheet as an asset (surplus) or liability (deficit). The current service cost and any past service costs together with the expected return on scheme assets less the unwinding of discount on the scheme liabilities is charged to the income statement. Actuarial gains and losses are recognised in full in the period in which they occur in other comprehensive income and presented as equity in the period in which they occur.

The other defined benefit schemes share risks between entities under common control where there is no contractual agreement or stated policy for charging the net defined benefit cost amongst the participating entities and where the Group is not deemed to be the sponsoring employer is not recognised on balance sheet, in accordance with Section 28.40A of FRS 102. Obligations for contributions to defined benefit pension plans are recognised as an expense and charged to the consolidated income statement on an accrual basis.

6.22 Share-based awards

Share-based awards may be made to employees of the Group under the Firm's incentive awards schemes. The fair value of any such shares, rights to shares or share options is measured when the conditional award is made. This value is recognised as the compensation expense to the Group over the period to which the performance criteria relate together with employer's social security expenses or other payroll taxes. All of the awards granted are equity settled. The Group estimates the level of forfeitures and applies this forfeiture rate at the grant date.

Additionally, the conditions that must be satisfied before an employee becomes entitled to equity instruments under the Firm's incentive programs is taken into consideration. The Firm's Retirement Eligibility rules for restricted stock awarded as part of incentive programs require the acceleration of the amortisation of the award such that the award is fully expensed at the time the retirement eligibility comes into force.

7. Segmental reporting

The Group is not in scope of IFRS 8 'Operating segments' and therefore has not provided any segmental analysis as permitted by Section 1.5 of FRS 102 'Basis of preparation'. The Group has one class of business, the provision of international Corporate and Investment Banking services within Europe, the Middle East and Africa ("EMEA"). The Group operates via branches in twelve locations outside of the UK, but these do not generate material revenues.

8. Net interest income/(expense)

	2016	2015
	$'m	$'m
Financial assets and liabilities held for trading	474	516
Securities purchased under agreements to resell and securities sold under agreements to repurchase	431	302
Securities borrowed and securities loaned	(276)	(181)
Other interest income and expense*	110	179
Net interest income	739	816

* Other interest includes interest income on loans and advances to customers and interest expense on borrowings from JPMorgan Chase undertakings.

Net interest income for the year includes $89 million with JPMorgan Chase undertakings (2015: $6 million).

$400 million of intercompany recharges included in other operating income in 2015 has been reclassified to fees and commissions receivable. $11 million of intercompany revenue attributions included in fees and commissions receivable in 2015 has been reclassified to trading profit. These amounts have been reclassified to conform with current year presentation and to better reflect the substance of the balance.

9. Fee and commission expense

Fee and commission expense contains expenses recharged through Firm attribution agreements from JPMorgan Chase undertakings for whom the employees of the Group conduct business. $736 million of intercompany recharges included in trading profit in 2015 has been reclassified to fee and commission expense to correctly reflect the substance of the balance and to conform with current year presentation.

10. Staff costs and directors' emoluments

	2016	2015
The monthly average number of staff working on behalf of the Group during the year was:	4,171	3,812

	2016	2015
	$'m	$'m
The staff costs for the year were:		
Wages and salaries	1,259	1,248
Social security costs	206	207
Other pension costs	107	97
Share based awards	356	352
	1,928	1,904

The directors are employees of other JPMorgan Chase & Co. undertakings and all expenses, including remuneration, are paid by those companies and not recharged. The directors do not consider that a significant element of their remuneration relates to the Company for the current financial year.

11. Profit on ordinary activities before taxation

	2016	2015
	$'m	$'m
Profit on ordinary activities before taxation is stated after charging:		
The audit of the Group pursuant to legislation	4	4

The combined auditors' remuneration of $4,156,167 (2015: $4,039,450) relates to the audit of the Company and the consolidated financial statements and fees payable to the Company's auditors for the audit of the Company. Audit fees for the Company's subsidiaries pursuant to legislation is met by other JPMorgan Chase undertakings and not recharged.

12. Tax on profit on ordinary activities

(a) Analysis of tax charge for the year

	2016	2015
	$'m	$'m
Current taxation		
UK Corporation tax on profit for the year	878	486
Overseas taxation	190	249
Less: Double tax relief	(183)	(173)
Adjustment in respect of previous years	48	(18)
Interest on overdue tax	—	3
Current tax expense for the year	933	547
Deferred tax:		
Origination and reversal of temporary differences	47	(75)
Adjustments in respect of previous periods	(12)	—
Effect of rate change on opening balance	(2)	(29)
Total tax expense for the year	966	443

(b) Factors affecting the current tax charge for the year

Changes to the UK corporation tax rates were substantively enacted as part of Finance Bill 2015 on 26 October 2015. These include reductions to the main rate to reduce the rate to 19% from 1 April 2017 and to 18% from 1 April 2020. In addition, effective 1 Jan 2016, a bank surcharge was introduced at 8%. Deferred taxes at the balance sheet date have been measured using these enacted tax rates and reflected in these financial statements.

The tax charge for the year differs from the standard rate of corporation tax in the UK (20%), reduced from 21% effective from 1 April 2015. The differences are explained below:

	2016	2015
	$'m	$'m
Profit on ordinary activities before taxation	3,903	3,654
Less: Profits subject to tax in overseas jurisdictions	(748)	(737)
	3,155	2,917
Profit on ordinary activities before taxation multiplied by standard rate of corporation tax in UK, which is 20% (2015: 21.25%)	630	590
Surcharge on banking profits 8%	303	—
Effects of:		
Non-deductible expenses/(non-taxable income)	29	(20)
Adjustments in respect of prior years		
- allocation of trading debits from a group company	—	(60)
- share-based awards	—	(23)
- other	36	66
Allocation of trading debits from a group company		
- current year	—	(29)
- future years	—	(80)
Impact of change in rate on deferred tax	(2)	(29)
Foreign tax suffered	9	76
Group relief claimed for nil consideration	(29)	(28)
Other	(10)	(20)
Total tax charge for the year	966	443

12. Tax on profit on ordinary activities (continued)

(c) Deferred taxation

i) Analysis of deferred tax asset and deferred tax liabilities

	2016	2015
	$'m	$'m
Deferred tax assets:		
Deferred tax assets to be recovered after more than 12 months	105	132
Deferred tax asset to be recovered within 12 months	92	80
	197	212
Deferred tax liabilities:		
Deferred tax liability to be reversed after more than 12 months	(8)	(9)
Deferred tax liability to be reversed within 12 months	(1)	(1)
Deferred tax asset (net)	188	202

ii) The gross movement on the deferred tax account is as follows:

	2016	2015
	$'m	$'m
As at 1 January	202	97
Depreciation short/(in excess) of capital allowances	—	1
Deferral of share-based payments	48	7
Allocation of trading debits from JPMorgan Chase entity within the Group	(39)	80
Other adjustment	(23)	17
As at 31 December	188	202

iii) The movement in deferred tax assets and liabilities during the year, without taking into consideration the offsetting of balances within the same jurisdiction, is as follows:

Deferred tax asset	Accelerated capital allowances	Share-based payments	Other	Total
	$'m	$'m	$'m	$'m
At 1 January 2015	3	99	(5)	97
Credited to the income statement	1	7	97	105
At 31 December 2015	4	106	92	202
Credited/ (charged) to the income statement	—	48	(62)	(14)
At 31 December 2016	4	154	30	188

The deferred taxation asset is included in other assets, note 20.

13. Loans and advances to banks

	2016	2015
	$'m	$'m
Loans and advances to banks	6,567	5,184

Included in the above are the following amounts due from JPMorgan Chase undertakings:

	2016	2015
	$'m	$'m
Loans and advances to banks	4,621	2,137

The Group maintains certain client money balances which principally arise where it acts on behalf of its clients as a clearing member for derivatives that are cleared through central counterparties. The Group has considered its rights and obligations relating to funds belonging to clients that are held subject to client money protection under the Client Assets Sourcebook, with banks, exchanges and clearing houses, and concluded that such amounts should not be recognised on balance sheet. Therefore, client money assets amounting to $12.5 billion (2015: $12.3 billion) (including Loans and advances to banks of $4.5 billion and Debtors of $8.0 billion) and related liabilities are not included in the Group's balance sheet.

14. Loans and advances to customers

	2016	2015
	$'m	$'m
Remaining maturity:		
Greater than five years	115	148
Greater than a year but less than five years	3,650	3,201
Greater than 3 months but less than a year	563	543
3 months or less	1,893	3,382
Repayable on demand	2,553	3,024
Provision for impairment	(8)	(5)
	8,766	10,293

There were no material past due or impaired loans and advances to customers as at 31 December 2016 (2015: nil).

The credit quality of loans and advances to customers is managed within the Firm's Credit Risk Management function, refer to the Strategic report.

15. Securities financing activities

The Group enters into resale agreements, repurchase agreements, securities borrowed transactions and securities loaned transactions (collectively, "securities financing agreements") primarily to finance the Group's inventory positions, acquire securities to cover short positions, accommodate customers' financing needs, and settle other securities obligations.

Securities purchased and securities sold under agreements to resell/repurchase and securities borrowed and securities loaned transactions are generally carried at the amount of cash collateral advanced or received.

Secured financing transactions expose the Group to credit and liquidity risk. To manage these risks, the Group monitors the value of the underlying securities (predominantly high-quality securities collateral, including government-issued debt and agency mortgage-backed securities) that it has received from or provided to its counterparties compared to the value of cash proceeds and exchanged collateral, and either requests additional collateral or returns securities or collateral when appropriate. Margin levels are initially established based upon the counterparty, the type of underlying securities, and the permissible collateral, and are monitored on an ongoing basis.

15. Securities financing activities (continued)

In resale agreements and securities borrowed transactions, the Group is exposed to credit risk to the extent that the value of the securities received is less than initial cash principal advanced and any collateral amounts exchanged. In repurchase agreements and securities loaned transactions, credit risk exposure arises to the extent that the value of underlying securities exceeds the value of the initial cash principal advanced, and any collateral amounts exchanged.

Additionally, the Group typically enter into master netting agreements and other similar arrangements with its counterparties, which provide for the right to liquidate the underlying securities and any collateral amounts exchanged in the event of a counterparty default. It is also the Group's policy to take possession, where possible, of the securities underlying resale agreements and securities borrowed transactions.

Refer to note 29 for additional information on netting arrangements.

	2016	2015
	$'m	$'m
Securities purchased under resale agreements	141,670	143,117
Securities borrowed	25,665	14,873
	167,335	157,990
Securities sold under repurchase agreements	61,657	58,937
Securities loaned	20,048	11,030
	81,705	69,967

Securities financing transactions include the following amounts held with other JPMorgan Chase undertakings:

	2016	2015
	$'m	$'m
Securities purchased under resale agreements	52,271	73,182
Securities borrowed	20,284	10,139
	72,555	83,321
Securities sold under repurchase agreements	12,366	20,995
Securities loaned	18,120	8,584
	30,486	29,579

16. Financial assets held for trading

	2016	2015
	$'m	$'m
At 1 January	301,252	305,388
Movements during the year	22,951	(4,136)
At 31 December	324,203	301,252

Included within financial assets held for trading, are the following balances with JPMorgan Chase undertakings:

	2016	2015
	$'m	$'m
Financial assets held for trading	125,191	126,064

17. Financial assets designated at fair value through profit or loss

	2016	2015
	$'m	$'m
At 1 January	140	85
Movements during the year	190	55
At 31 December	330	140
Unlisted	330	140

18. Financial assets available-for-sale

	2016	2015
	$'m	$'m
At 1 January	20	1,468
Acquisitions	86	—
Disposals	—	(1,450)
Movements in financial assets available-for-sale reserve	1	2
At 31 December	107	20
Listed	99	11
Unlisted	8	9
	107	20

There were no amounts within financial assets available-for-sale that were past due or impaired as at 31 December 2016 (2015: $nil).

19. Subordinated loans

The Company no longer holds a subordinated loan with J.P. Morgan Luxembourg International S.à.r.l (2015: $245 million) but continues to hold several subordinated loans with Group companies.

Borrower	Dated	Interest rate	Company 2016	Company 2015
		%	$'m	$'m
J.P. Morgan Chase International Holdings	2017	7.01	959	959
J.P. Morgan Chase International Holdings	2017	6.17	750	750
J.P. Morgan Chase International Holdings	2017	5.92	200	200
J.P. Morgan Chase International Holdings	2017	5.67	510	510
J.P. Morgan Chase International Holdings	2017	4.97	302	302
J.P. Morgan Chase International Holdings	2018	5.87	3,000	3,000
J.P. Morgan Chase International Holdings	2017	5.54	500	500
J.P. Morgan Chase International Holdings	2017	5.88	713	713
J.P. Morgan Chase International Holdings	2017	5.88	2,087	2,087
J.P. Morgan Chase International Holdings	2020	4.98	482	482
J.P. Morgan Chase International Holdings	2021	5.72	2,000	2,000
J.P. Morgan Chase International Holdings	2025	3.99	450	450
J.P. Morgan Chase International Holdings	2026	3.94	150	150
J.P. Morgan Securities plc	2017	Floating	180	180
J.P. Morgan Luxembourg International S.à.r.l.	2021	Floating	—	245
			12,283	12,528
Comprised of:				
Subordinated loans to Group companies			12,283	12,283
Subordinated loans to non Group companies			—	245
			12,283	12,528

20. Other assets

	Note	2016	2015
		$'m	$'m
Trade debtors		13,748	11,132
Amounts owed by JPMorgan Chase undertakings		23,190	11,507
Deferred taxation	12	188	202
Other debtors		20,329	11,041
Other assets		11	12
		57,466	33,894

No amounts within accounts receivable are past due or impaired.

Trade debtors mainly consist of unsettled trades. Other debtors includes $14.1 billion of cash collateral provided on derivatives (2015: $4.6 billion).

A review of the Group's debtors and trade creditors (note 26) identified that offsetting control accounts were incorrectly presented as gross on the balance sheet in 2015. Accordingly, $4.8 billion has now been netted.

An amount owed by JPMorgan Chase undertakings of $207 million was presented on the balance sheet in 2015. In 2016, $191 million of this balance has been presented in debtors and $16 million in prepayments to conform with current year presentation.

21. Goodwill

	2016	2015
	$'m	$'m
Cost:		
At 1 January	385	386
Write-off	—	(1)
At 31 December	385	385
Accumulated amortisation:		
At 1 January	(257)	(230)
Charge for the year	(27)	(27)
At 31 December	(284)	(257)
Net book value at 31 December	101	128

In 2005, the Group recognised goodwill as a result of the acquisition of JPMorgan Cazenove Holdings through a subsidiary, J.P. Morgan Chase Finance Limited. The subsidiary J.P. Morgan Chase Finance Limited, acquired JPMorgan Cazenove Holdings at a cost of $282 million, satisfied by the transfer of 22,719,809 J shares and 10 J preference shares. Acquisition accounting was applied with goodwill recognised equal to the difference between the fair value of consideration paid and the fair value of assets and liabilities recognised on the balance sheet. Goodwill is being amortised on a straight-line basis over the period that the directors estimate that the value of the underlying business acquired is expected to exceed the value of the underlying assets. This period is deemed to be 20 years.

In 2008, the Group recognised goodwill as a result of the acquisition of the Nordic institutional global custody business of Nordea Bank Denmark A/A, Nordea Bank Finland plc and Nordea Bank Norge ASA ("Nordea"). The full purchase consideration of $125 million, was in the form of cash and relates entirely to purchased goodwill. This represents the intrinsic value of the business transferred, based upon the estimated levels of future profits to be generated by the business. Goodwill arising on the acquisition is being amortised on a straight-line basis over the period that the directors estimate that the value of the underlying business acquired is expected to exceed the value of the underlying assets. This period is deemed to be 10 years.

22. Investments in JPMorgan Chase undertakings

	2016	2015
Group investment in associate	$'m	$'m
At 1 January	14	38
Share of dividends paid	—	(21)
Share of loss of associate	(2)	(3)
At 31 December	12	14

The Group holds a 21% investment in Crosby Sterling (Holdings) Limited. The investment is accounted for using the equity method.

	2016	2015
Company investment in subsidiaries	$'m	$'m
At 1 January	14,772	12,272
Additions	—	2,500
At 31 December	14,772	14,772

22. Investments in JPMorgan Chase undertakings (continued)

In the third quarter of 2015, as part of an internal reorganisation, the Company received a $2,495 million capital contribution from its parent, J.P. Morgan International Finance Limited, and entered into certain transactions with other Group undertakings:

- The Company acquired 100% share capital of Bank One Europe Limited, all of the membership interest in CP Group Holding Cooperatief U.A., and a 99.99999% limited partnership interest in Asselijn Finance CV., fair-valued respectively at $193 million, $1,073 million, and $1,229 million, against issuance of shares to its parent, J.P. Morgan Chase International Holdings. The fair value of these entities was primarily driven by the cash held.

- Immediately on receipt, the Company contributed all of these ownership interests, along with an additional $5 million in cash, into its subsidiary, J.P. Morgan Chase (UK) Holdings Limited. These ownership interests and cash were contributed down the chain of the wholly owned companies within the Group, until they were acquired by JPMS plc. These transactions resulted in an increase in the capital of JPMS plc and the Group by $2,500 million and $2,495 million respectively.

The subsidiaries of the Group are as follows:

Name	Country of incorporation	Principal activity	Holding	Shares held %
J.P. Morgan Chase (UK) Holdings Limited	United Kingdom	Investment holding company	Direct	100
J.P. Morgan Limited	United Kingdom	Investment banking and advisory	Indirect	100
J.P. Morgan Chase International Holdings	United Kingdom	Investment holding company	Indirect	100
J.P. Morgan EU Holdings Limited	United Kingdom	Investment holding company	Indirect	100
J.P. Morgan Securities plc	United Kingdom	Investment banking and advisory	Indirect	99.36
J.P. Morgan Courtage SAS	France	Investment company	Indirect	100
J.P. Morgan International Bank Limited	United Kingdom	Private banking	Indirect	100
Greenwood Nominees Limited	United Kingdom	Nominee company	Indirect	99.36
J.P. Morgan Europe Limited	United Kingdom	Banking	Indirect	99.36
Cazenove Group Limited	United Kingdom	Holding company	Indirect	99.36
J.P. Morgan Prime Nominees Ltd	United Kingdom	Nominee company	Indirect	99.36
J.P. Morgan Services LLP	United Kingdom	Dormant company	Indirect	100
J.P. Morgan Chase Finance Limited	United Kingdom	Holding company	Indirect	100
J.P. Morgan Equities South Africa Proprietary Ltd	South Africa	Securities trading & brokerage	Indirect	100
J.P. Morgan (SC) Limited	United Kingdom	Investment holding company	Indirect	100
Chase Securities International Limited	United Kingdom	Investment company	Indirect	99.36
Chase International Securities (C.I.) Limited	Jersey	Investment company	Indirect	99.36
Chemical Nominees Limited	United Kingdom	Investment company	Indirect	99.36
Cazenove Holdings Limited	Jersey	Holding company	Indirect	99.36
Cazenove IP Limited	United Kingdom	Investment company	Indirect	99.36
JPMorgan Cazenove Holdings	United Kingdom	Holding company	Indirect	99.36
J.P. Morgan Cazenove Limited	United Kingdom	Investment company	Indirect	99.36
JPMorgan Cazenove Service Company	United Kingdom	Service company	Indirect	99.36
J.P. Morgan Trustee and Depositary Company	United Kingdom	Trustee and Depositary	Indirect	100
J.P. Morgan Partners Europe Limited	United Kingdom	Management of liquid investments	Indirect	100
Cheyne Capital Guaranteed S.A. Series 2007-1*	Luxembourg	Notes issuer	Indirect	99.36

* These entities are special purpose vehicles which meet the definition (per section 1162 of the Companies Act 2006) of a subsidiary undertaking.

All shares held in the above subsidiaries are ordinary shares.

Cazenove US Holdings Limited was an indirect subsidiary of the Group, and was dissolved on 29 February 2016.

On 8 January 2016 all underlying loans within "Octopus Mortagages 1 Limited"*, "Octopus Mortgages 2 Limited"*, "Octopus Mortgages 3 Limited"* and "Octopus Mortgages 4 Limited"* were paid down and no ownership interest is held.

All the Group subsidiaries have been included in the consolidated financial statements.

The above investments are shown at cost less any provision for impairment. In the opinion of the directors, the value of the Group's investment in each subsidiary undertaking is not less than the amount at which it is stated in the balance sheet.

23. Deposits by banks

	2016	2015
	$'m	$'m
Remaining maturity:		
Repayable on demand	142	114

Included in the above are the following amounts due from JPMorgan Chase undertakings:

	2016	2015
	$'m	$'m
JPMorgan Chase undertakings	141	110

24. Customer accounts

	2016	2015
	$'m	$'m
Remaining maturity:		
Greater than 3 months but less than a year	50	169
3 months or less	2,151	1,624
Repayable on demand	21,303	22,081
	23,504	23,874

25. Financial liabilities held for trading

	2016	2015
	$'m	$'m
At 1 January	264,206	267,167
Movements during the year	30,580	(2,961)
At 31 December	294,786	264,206

Included within financial liabilities held for trading, are the following balances with JPMorgan Chase undertakings:

	2016	2015
	$'m	$'m
Financial liabilities held for trading	152,399	151,175

26. Other liabilities

	Group 2016 $'m	Company 2016 $'m	Group 2015 $'m	Company 2015 $'m
Trade creditors	30,082	—	22,212	—
Tax creditors	721	5	510	4
Amounts due to JPMorgan Chase undertakings	84,285	—	67,826	—
Other liabilities	24,215	—	17,985	—
	139,303	5	108,533	4

Trade creditors predominantly consist of unsettled trades, brokerage fees payable and liabilities in respect of assets transferred but not derecognised (note 36). Other liabilities includes $23,734 million of cash collateral received related to over-the-counter ("OTC") derivatives (2015: $17,171 million).

Amounts owed to JPMorgan Chase undertakings presented on the balance sheet now represents financing and collateral arrangements with other JPMorgan Chase undertakings. Non-financing amounts owed to JPMorgan Chase undertakings of $1.8 billion in 2015 has now been presented in trade creditors to conform with current year presentation.

27. Subordinated liabilities

The following loan capital is unsecured and is subordinated in right of payment to the ordinary creditors, including depositors, as follows:

Lender	Dated	Interest	2016 $'m	2015 $'m
J.P. Morgan International Finance Limited	2037	0.125% above 6 month LIBOR	4	5

There are no provisions, whereby the subordinated liability may be converted into capital.

28. Assets and liabilities measured at fair value

Fair value

Valuation process

The Group carries a portion of its assets and liabilities at fair value on a recurring basis.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is based on quoted market prices or inputs, where available. If listed prices or quotes are not available, fair value is based on models that consider relevant transaction characteristics (such as maturity) and use as inputs observable or unobservable market parameters, including but not limited to yield curves, interest rates, volatilities, equity or debt prices, foreign exchange rates, and credit curves.

The level of precision in estimating unobservable market inputs or other factors can affect the amount of gain or loss recorded for a particular position. Furthermore, while the Group believes its valuation methods are appropriate and consistent with those of other market participants, the methods and assumptions used reflect management judgement and may vary across the Group's businesses and portfolios. The use of different methodologies or assumptions to those used by the Group could result in a different estimate of fair value at the reporting date.

Risk-taking functions are responsible for providing fair value estimates for assets and liabilities carried on the balance sheet at fair value. The Firm's valuation control function, which is part of the Firm's Finance function and independent of the risk-taking functions, is responsible for verifying these estimates and determining any fair value adjustments that may be required to ensure that the Group's positions are recorded at fair value. The valuation control function verifies fair value estimates provided by the risk-taking functions by leveraging independently derived prices, valuation inputs and other market data, where available.

In determining the fair value of a derivative portfolio, valuation adjustments may be appropriate to reflect the credit quality of the counterparty, the credit quality of the Group, and the funding risk inherent in certain derivatives. The credit and funding risks of the derivative portfolio are generally mitigated by arrangements provided to the Group by JPMorgan Chase Bank, N.A. and therefore the Group takes account of these arrangements in estimating the fair value of its derivative portfolio.

28. Assets and liabilities measured at fair value

Valuation model review and approval

If prices or quotes are not available for an instrument or a similar instrument, fair value is generally determined using valuation models that consider relevant transaction data such as maturity and use as inputs market-based or independently sourced parameters. The Model Risk function is independent of the model owners and reviews and approves valuation models used by the Group.

Fair value hierarchy

The Group classifies its assets and liabilities according to a valuation hierarchy that reflects the observability of significant market inputs. The three levels are defined as follows:

Level 1 - inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 - inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

Level 3 - one or more inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorisation within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement.

Valuation methodologies

The following table describes the valuation methodologies used by the Group to measure its more significant products/ instruments at fair value, including the general classification of such instruments pursuant to the valuation hierarchy:

Product/instrument	Valuation methodology, inputs and assumptions	Classifications in the valuation hierarchy
Equity, debt and other securities	Quoted market prices are used where available. In the absence of quoted market prices, securities are valued based on: • Observable market prices for similar securities • Relevant broker quotes • Discounted cash flows In addition, the following inputs to discounted cash flows are used for the following products: *Mortgage and asset-backed securities specific inputs*: • Collateral characteristics • Deal-specific payment and loss allocations • Current market assumptions related to yield, prepayment speed, conditional default rates and loss severity	Level 1 Level 2 or 3

28. Assets and liabilities measured at fair value (continued)

Valuation methodologies (continued)

Product/instrument	Valuation methodology, inputs and assumptions	Classifications in the valuation hierarchy
Derivatives	Exchange-traded derivatives that are actively traded and valued using the exchange price.	Level 1
	Derivatives that are valued using models such as the Black-Scholes option pricing model, simulation models, or a combination of models, that use observable or unobservable valuation inputs (e.g., plain vanilla options and interest rate and credit default swaps). Inputs include: • Contractual terms including the period to maturity • Readily observable parameters including interest rates and volatility • Credit quality of the counterparty and of the Group's subsidiaries • Market funding levels • Correlation levels In addition, the following specific inputs are used for the following derivatives that are valued based on models with significant unobservable inputs: *Structured credit derivatives specific inputs include*: • Credit default swaps ("CDS") spreads and recovery rates • Credit correlation between the underlying debt instruments • Actual transactions, where available, are used to regularly recalibrate unobservable parameters *Certain interest rate and foreign exchange ("FX") exotic options specific inputs include:* • Interest rate correlation • Interest rate spread volatility • Foreign exchange correlation • Correlation between interest rates and foreign exchange rates • Parameters describing the evolution of underlying interest rates *Certain commodity derivatives specific inputs include:* • Commodity volatility • Forward commodity price	Level 2 or 3
Financial instruments held for trading - loans	Where observable market data is available, valuations are based on: • Observed market prices (circumstances are infrequent) • Relevant broker quotes • Observed market prices for similar instruments Where observable market data is unavailable or limited, valuations are based on discounted cash flows, which consider the following: • Credit spreads derived from the cost of CDS; or benchmark credit curves developed by the Firm, by industry and credit rating • Prepayment speed	Level 2 or 3
Loans and advances to customers and lending-related commitments	Valuations are based on discounted cash flows, which consider: • Credit spreads, derived from the cost of CDS; or benchmark credit curves developed by the Firm, by industry and credit rating • Prepayment speed Lending-related commitments are valued similar to loans and reflect the portion of an unused commitment expected, based on the Group's average portfolio historical experience, to become funded prior to an obligor default	Predominantly level 3
• Securities purchased under agreements to resell; • Securities borrowed; • Securities sold under agreements to repurchase; • Securities loaned	Valuations are based on discounted cash flows, which consider: • Derivative features. For further information refer to the discussion of derivatives below • Market rates for the respective maturity • Collateral	Level 2

28. Assets and liabilities measured at fair value (continued)

Assets and liabilities measured at fair value on a recurring basis

The following table presents the asset and liabilities reported at fair value as of 31 December 2016 and 2015, by major product category and fair value hierarchy.

	Level 1	Level 2	Level 3	Total
	$'m	$'m	$'m	$'m
At 31 December 2016				
Financial assets held for trading:				
Debt and equity instruments	49,404	39,544	818	89,766
Derivative receivables	77	227,852	6,508	234,437
Financial assets designated at fair value through profit or loss:				
Debt and equity instruments	—	—	330	330
Financial assets available for sale	99	8	—	107
Total financial assets	49,580	267,404	7,656	324,640
Financial liabilities held for trading:				
Debt and equity instruments	31,267	11,214	—	42,481
Derivative payables	76	230,971	5,461	236,508
Other financial liabilities	276	11,558	3,963	15,797
Total financial liabilities	31,619	253,743	9,424	294,786

	Level 1	Level 2	Level 3	Total
	$'m	$'m	$'m	$'m
At 31 December 2015				
Financial assets held for trading:				
Debt and equity instruments	49,374	41,413	1,331	92,118
Derivative receivables	51	203,908	5,175	209,134
Financial assets designated at fair value through profit or loss:				
Debt and equity instruments	—	—	140	140
Financial assets available for sale	12	8	—	20
Total assets at fair value	49,437	245,329	6,646	301,412
Financial liabilities held for trading:				
Debt and equity instruments	20,476	12,396	5	32,877
Derivative payables	51	209,948	4,906	214,905
Other financial liabilities	297	12,990	3,137	16,424
Total liabilities at fair value	20,824	235,334	8,048	264,206

28. Assets and liabilities measured at fair value (continued)

Level 3 valuations

The Firm has established well-documented processes for determining fair value, including for instruments where fair value is estimated using significant unobservable inputs (level 3).

Estimating fair value requires the application of judgement. The type and level of judgement required is largely dependent on the amount of observable market information available to the Group. For instruments valued using internally developed models that use significant unobservable inputs and are therefore classified within level 3 of the fair value hierarchy, judgements used to estimate fair value are more significant than those required when estimating the fair value of instruments classified within levels 1 and 2.

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate model to use. Second, due to the lack of observability of significant inputs, management must assess all relevant empirical data in deriving valuation inputs including, but not limited to, transaction details, yield curves, interest rates, prepayment speed, default rates, volatilities, correlations, equity or debt prices, valuations of comparable instruments, foreign exchange rates and credit curves.

The following table presents the Group's primary level 3 financial instruments, the valuation techniques used to measure the fair value of those financial instruments, the significant unobservable inputs, the range of values for those inputs and, for certain instruments, the weighted averages of such inputs. While the determination to classify an instrument within level 3 is based on the significance of the unobservable inputs to the overall fair value measurement, level 3 financial instruments typically include observable components (that is, components that are actively quoted and can be validated to external sources) in addition to the unobservable components.

The range of values presented in the table is representative of the highest and lowest level input used to value the significant groups of instruments within a product/instrument classification. Where provided, the weighted averages of the input values presented in the table are calculated based on the fair value of the instruments that the input is being used to value.

In the Group's view, the input range and the weighted average value reflect the characteristics of the various instruments held by the Group and the relative distribution of instruments within the range of characteristics. For example, two option contracts may have similar levels of market risk exposure and valuation uncertainty, but may have significantly different implied volatility levels because the option contracts have different underlying's, tenors, or strike prices.

The input range and weighted average values will therefore vary from period-to-period and parameter-to-parameter based on the characteristics of the instruments held by the Group at each balance sheet date.

28. Assets and liabilities measured at fair value (continued)

Level 3 valuations (continued)

Product/instrument	Asset	Liability	Net fair value	Principal valuation technique	Unobservable input	Range of input values	Weighted average
At 31 December 2016	$'m	$'m	$'m				
Debt and equity instruments	1,148	—	1,148				
Corporate debt securities and other				Discounted cash flows	Credit spread	40bps – 375bps	96bps
					Yield	1% - 17%	9%
				Market comparables	Price	$0 - $121	$91
Residential mortgage-backed securities and loans				Discounted cash flows	Yield	4% - 18%	5%
					Prepayment speed	0% - 20%	8%
					Conditional default rate	0% - 34%	15%
					Loss severity	0% - 90%	37%
Commercial mortgage-backed securities and loans				Discounted cash flows	Yield	1% - 32%	8%
					Conditional default rate	0% - 100%	69%
					Loss severity	40%	40%
Derivatives	6,508	(5,461)	1,047				
Net interest rate derivatives				Option pricing	Interest rate correlation	(30)% – 100%	
					Interest rate spread volatility	3% – 38%	
Net credit derivatives				Discounted cash flows	Credit correlation	30 % – 85%	
Net foreign exchange derivatives				Option pricing	Foreign exchange correlation	(30) % – 65%	
Net equity derivatives				Option pricing	Equity volatility	20 % – 60%	
Net commodity derivatives				Discounted cash flows	Forward commodity price	$46 – $59 per barrel	
Other financial liabilities	—	(3,963)	(3,963)	Option pricing	Interest rate correlation	(30)% – 100%	
					Interest rate spread volatility	3% – 38%	
					Foreign exchange correlation	(30) % – 65%	
					Equity correlation	(50)% – 80%	
				Discounted cash flows	Credit correlation	30 % – 85%	
Total assets and liabilities	7,656	(9,424)	(1,768)				

28. Assets and liabilities measured at fair value (continued)

Level 3 valuations (continued)

Product/instrument	Asset	Liability	Net fair value	Principal valuation technique	Unobservable input	Range of input values	Weighted average
At 31 December 2015	**$'m**	**$'m**	**$'m**				
Debt and equity instruments	1,471	(5)	1,466				
Corporate debt securities and other				Discounted cash flows	Credit spread	40bps – 375bps	96bps
				Market comparables	Yield	1% - 17%	9%
					Price	$0 - $121	$91
Residential mortgage-backed securities and loans				Discounted cash flows	Yield	4% - 18%	5%
					Prepayment speed	0% - 20%	8%
					Conditional default rate	0% - 34%	15%
					Loss severity	0% - 90%	37%
Commercial mortgage-backed securities and loans				Discounted cash flows	Yield	1% - 32%	8%
					Conditional default rate	0% - 100%	69%
					Loss severity	40%	40%
Derivatives	5,175	(4,906)	269				
Net interest rate derivatives				Option pricing	Interest rate correlation	(30)% – 100%	
					Interest rate spread volatility	3% – 38%	
Net credit derivatives				Discounted cash flows	Credit correlation	30 % – 85%	
Net foreign exchange derivatives				Option pricing	Foreign exchange correlation	(30) % – 65%	
Net equity derivatives				Option pricing	Equity volatility	20 % – 60%	
Net commodity derivatives				Discounted cash flows	Forward commodity price	$46 – $59 per barrel	
Other financial liabilities	—	(3,137)	(3,137)		Interest rate correlation	(30)% – 100%	
					Interest rate spread volatility	3% – 38%	
					Foreign exchange correlation	(30) % – 65%	
				Option pricing	Equity correlation	(50)% – 80%	
				Discounted cash flows	Credit correlation	30 % – 85%	
Total assets and liabilities	6,646	(8,048)	(1,402)				

The categories presented in the table have been aggregated based upon the product type, which may differ from their classification on the balance sheet and fair values are shown net.

Changes in and ranges of unobservable inputs

The following discussion provides a description of the impact on a fair value measurement of a change in each unobservable input in isolation, and the interrelationship between unobservable inputs, where relevant and significant. The impact of changes in inputs may not be independent as a change in one unobservable input may give rise to a change in another unobservable input; where relationships exist between two unobservable inputs, those relationships are discussed below. Relationships may also exist between observable and unobservable inputs (for example, as observable interest rates rise, unobservable prepayment rates decline); such relationships have not been included in the discussion below. In addition, for each of the individual relationships described below, the inverse relationship would also generally apply.

28. Assets and liabilities measured at fair value (continued)

Changes in and ranges of unobservable inputs (continued)

Yield - The yield of an asset is the interest rate used to discount future cash flows in a discounted cash flow calculation. An increase in the yield, in isolation, would result in a decrease in a fair value measurement.

Credit spread - The credit spread is the amount of additional annualised return over the market interest rate that a market participant would demand for taking exposure to the credit risk of an instrument. The credit spread for an instrument forms part of the discount rate used in a discounted cash flow calculation. Generally, an increase in the credit spread would result in a decrease in a fair value measurement.

Prepayment speed - The prepayment speed is a measure of the voluntary unscheduled principal repayments of a prepayable obligation in a collateralised pool. Prepayment speeds generally decline as borrower delinquencies rise. An increase in prepayment speeds, in isolation, would result in a decrease in a fair value measurement of assets valued at a premium to par and an increase in a fair value measurement of assets valued at a discount to par.

Conditional default rate - The conditional default rate is a measure of the reduction in the outstanding collateral balance underlying a collateralised obligation as a result of defaults. An increase in conditional default rates would generally be accompanied by an increase in loss severity and an increase in credit spreads. An increase in the conditional default rate, in isolation, would result in a decrease in a fair value measurement.

Loss severity - The loss severity (the inverse concept is the recovery rate) is the expected amount of future realised losses resulting from the ultimate liquidation of a particular loan, expressed as the net amount of loss relative to the outstanding loan balance. An increase in loss severity is generally accompanied by an increase in conditional default rates. An increase in the loss severity, in isolation, would result in a decrease in a fair value measurement.

Correlation - Correlation is a measure of the relationship between the movements of two variables (e.g., how the change in one variable influences the change in the other). Correlation is a pricing input for a derivative product where the payoff is driven by one or more underlying risks.

Correlation inputs are related to the type of derivative (e.g., interest rate, credit, equity and foreign exchange) due to the nature of the underlying risks. When parameters are positively correlated, an increase in one parameter will result in an increase in the other parameter. When parameters are negatively correlated, an increase in one parameter will result in a decrease in the other parameter.

An increase in correlation can result in an increase or a decrease in a fair value measurement. Given a short correlation position, an increase in correlation, in isolation, would generally result in a decrease in a fair value measurement.

Volatility - Volatility is a measure of the variability in possible returns for an instrument, parameter or market index given how much the particular instrument, parameter or index changes in value over time. Volatility is a pricing input for options, including equity options, commodity options, and interest rate options. Generally, the higher the volatility of the underlying, the riskier the instrument. Given a long position in an option, an increase in volatility, in isolation, would generally result in an increase in a fair value measurement.

28. Assets and liabilities measured at fair value (continued)

Changes in level 3 recurring fair value measurements

The following tables include a rollforward of the balance sheets amounts (including changes in fair value) for financial instruments classified by the Group within level 3 of the fair value hierarchy.

Movement in assets and liabilities in Level 3 during year ended 31 December 2016

	Debt and equity instruments	Derivative receivables	Total financial assets
	$'m	$'m	$'m
Financial Assets			
At 1 January 2016	1,471	5,175	6,646
Purchases	1,577	(185)	1,392
Sales	(1,304)	514	(790)
Issuances	15	—	15
Settlements	(107)	(219)	(326)
Transfers into level 3	148	263	411
Transfers out of level 3	(564)	(240)	(804)
Total (loss)/gain recognised in the profit or loss	(88)	1,200	1,112
At 31 December 2016	1,148	6,508	7,656

	Debt and equity instruments	Derivative payables	Other financial liabilities	Total financial assets
	$'m	$'m	$'m	$'m
Financial Liabilities				
At 1 January 2016	5	4,906	3,137	8,048
Purchases	(2)	20	(1)	17
Sales	21	720	—	741
Issuances	—	1	2,303	2,304
Settlements	(32)	(938)	(1,656)	(2,626)
Transfers into Level 3	1	244	56	301
Transfers out of Level 3	(1)	(288)	(54)	(343)
Total (gain/) loss recognised in the profit or loss	8	796	178	982
At 31 December 2016	—	5,461	3,963	9,424

28. Assets and liabilities measured at fair value (continued)

Changes in level 3 recurring fair value measurements (continued)

Movement in assets and liabilities in Level 3 during year ended 31 December 2015

	Debt and equity instruments	Derivative receivables	Total financial assets
	$'m	$'m	$'m
Financial Assets			
At 1 January 2015	5,765	6,543	12,308
Purchases	4,567	943	5,510
Sales	(3,693)	(258)	(3,951)
Issuances	7	18	25
Settlements	(1,746)	(1,670)	(3,416)
Transfers into level 3	484	257	741
Transfers out of level 3	(3,534)	(1,641)	(5,175)
Total (gain)/loss recognised in the profit or loss	(379)	983	604
At 31 December 2015	1,471	5,175	6,646

	Debt and equity instruments	Derivative payables	Other financial liabilities	Total financial assets
	$'m	$'m	$'m	$'m
Financial Liabilities				
At 1 January 2015	2	5,515	3,628	9,145
Purchases	(127)	(1,262)	—	(1,389)
Sales	130	2,255	—	2,385
Issuances	—	53	3,279	3,332
Settlements	(1)	(2,142)	(2,991)	(5,134)
Transfers into level 3	5	211	247	463
Transfers out of level 3	(3)	(1,050)	(1,409)	(2,462)
Total (loss)/gain recognised in the profit or loss	(1)	1,326	383	1,708
At 31 December 2015	5	4,906	3,137	8,048

Realised and unrealised gains/(losses) are reported in trading profits in the income statement.

28. Assets and liabilities measured at fair value (continued)

Transfers between levels for instruments carried at fair value on a recurring basis

For the years ended 31 December 2016 and 2015, there were no significant transfers between levels 1 and 2.

During the year ended 31 December 2016, transfers into and out of level 3 included the following:

- $0.3 billion of assets transferred out of level 3 driven by an increase in observability of corporate bonds and loans; and
- $0.2 billion of assets and $0.2 billion of liabilities transferred into level 3 driven by a decrease in observability of credit default swaps.

During the year ended 31 December 2015, transfers out of level 3 to level 2 included the following:

- $1.6 billion of assets driven by a decrease in the significance of the unobservable inputs for equity options;
- $0.7 billion of assets and $0.9 billion of liabilities driven by an increase in observability of equity options;
- $0.6 billion of assets and $0.6 billion of liabilities driven by a decrease in the significance of the unobservable inputs for structured notes and offsetting credit hedges;
- $0.4 billion of assets and $0.4 billion of liabilities driven by an increase in observability of interest rate options; and
- $0.3 billion of assets driven by a decrease in the significance of the unobservable inputs for loans.

All transfers are assumed to occur at the beginning of the quarter in which they occur.

Fair value of financial instruments not carried on balance sheet at fair value

Certain financial instruments that are not carried at fair value on balance sheet are carried at amounts that approximate fair value, due to their short-term nature and generally negligible credit risk. These instruments include cash and balances at central banks, cash at bank and in hand, loans and advances to banks, loans and advances to customers, securities purchased under resale agreements, subordinated loans, other assets, accrued income, deposits by banks, customer accounts, securities sold under repurchase agreements, securities loaned, other liabilities, accruals and subordinated liabilities. The Group has $261 billion (2015: $208 billion) of current financial assets and $246 billion (2015: $203 billion) of current financial liabilities that are not measured at fair value, including loans and advances to customers of $9 billion (2015: $10 billion).

In estimating the fair value of these loans and advances to customers, typically a discounted cash flow model is applied with significant unobservable inputs and therefore would be classified as level 3 instruments. The fair value of these loans is not materially different from the carrying amount. All other instruments are of a short-term nature and the carrying amounts in the balance sheet approximate fair value.

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Notes to the financial statements (continued)

29. Offsetting financial assets and financial liabilities

The table below presents the balance sheet assets and liabilities offset, where the offsetting criteria under section 11.38A of FRS 102 have been met, and the related amounts not offset in the balance sheet in respect of cash and security collateral received and master netting agreements, where such criteria have not been met:

	Effects of offsetting on balance sheet			Related amounts not offset		
	Gross amounts	Amounts offset	Net amounts reported on balance sheet	Financial Instruments	Cash collateral	Net amount
	$'m	$'m	$'m	$'m	$'m	$'m
At 31 December 2016						
Financial assets:						
Securities purchased under agreements to resell [1]	255,548	(113,878)	141,670	—	(141,670)	—
Securities borrowed [1]	25,665	—	25,665	—	(25,665)	—
Financial assets held for trading [2]	343,442	(19,239)	324,203	(191,530)	(19,626)	113,047
Total	624,655	(133,117)	491,538	(191,530)	(186,961)	113,047
Financial liabilities:						
Securities sold under agreements to repurchase [1]	175,535	(113,878)	61,657	—	(61,657)	—
Securities loaned [1]	20,048	—	20,048	—	(20,048)	—
Financial liabilities held for trading [2]	315,255	(20,469)	294,786	(191,530)	(17,046)	86,210
Total	510,838	(134,347)	376,491	(191,530)	(98,751)	86,210

	Effects of offsetting on balance sheet			Related amounts not offset		
	Gross amounts	Amounts offset	Net amounts reported on balance sheet	Financial Instruments	Cash collateral	Net amount
	$'m	$'m	$'m	$'m	$'m	$'m
At 31 December 2015						
Financial assets:						
Securities purchased under agreements to resell [1]	200,039	(56,922)	143,117	—	(143,117)	—
Securities borrowed [1]	14,873	—	14,873	—	(14,873)	—
Financial assets held for trading [2]	329,142	(27,890)	301,252	(161,859)	(15,595)	123,798
Total	544,054	(84,812)	459,242	(161,859)	(173,585)	123,798
Financial liabilities:						
Securities sold under agreements to repurchase [1]	115,859	(56,922)	58,937	—	(58,937)	—
Securities loaned [1]	11,030	—	11,030	—	(11,030)	—
Financial liabilities held for trading [2]	290,809	(26,603)	264,206	(165,422)	(12,032)	86,752
Total	417,698	(83,525)	334,173	(165,422)	(81,999)	86,752

[1] The fair value of securities purchased under agreements to resell and securities borrowed accepted as collateral that the Group is permitted to sell or re-pledge in the absence of default, prior to netting adjustments, is $277,995 million (2015: $223,981 million). The fair value of securities sold under agreements to repurchase and securities loaned pledged to secure liabilities, prior to netting adjustments, is $188,793 million (2015: $140,138 million). Prior year 'related amounts not offset' have been limited to the inclusion of collateral to the extent of the net amount by counterparty to conform with current year presentation, refer to page 12 of the Strategic report for further detail.

[2] Included within "Amounts offset" are the respective collateral payables and receivables with certain clearing counterparties.

30. Non-controlling interest

The non-controlling interest in the Group is represented by the following:

- 7,000 (2015: 7,000) redeemable preference shares of $10,000 each issued by JPMS plc to J.P. Morgan Capital Financing Limited. The dividend rate on the preference shares is 0.9% over 12 month U.S. dollar LIBOR on the nominal amount, payable in priority to any dividend payable on ordinary shares, with no right to accumulation in the event of deficiency of profits nor any further entitlement to participation in the profits of JPMS plc. JPMS plc may redeem at its option any preference share at par, together with accrued dividend due, at any time after 26 March 2007. In the event of a winding-up the preference shareholder shall be repaid both capital and any accrued dividend due in priority to any payment to the ordinary shareholders.
- 3,648 (2015: 3,648) preferred ordinary shares each issued by JPMS plc to J.P. Morgan Capital Financing Limited. These shares carry voting rights fixed at 10% of all votes capable of being cast at general meetings, with the ordinary shares carrying the remaining 90% of the voting rights.
- 100,000 (2015: 100,000) 20 year fixed rate preference shares issued by J.P. Morgan Chase International Holdings ("JPMCIH") to J.P. Morgan Whitefriars (UK). The fixed rate applicable to the preference shares is 8% payable at the discretion of JPMCIH, with no right to accumulation in the event of deficiency of profits nor any further entitlement to participation in the profits of JPMCIH. The preference shares are redeemable only at the discretion of the issuer.

The non-controlling interest shareholders' funds are as follows:

	2016	2015
	$'m	$'m
Issue proceeds of redeemable preference shares and preferred ordinary shares	2,064	2,064
Total non-controlling interest	2,064	2,064
At 1 January	2,064	2,064
Equity non-controlling interest	—	—
At 31 December	2,064	2,064

31. Called-up share capital

	2016	2015
	$'m	$'m
Issued and fully paid share capital		
406,909,774 (2015: 406,909,774) ordinary shares of $10 each	4,069	4,069

32. *Notes to the consolidated statement of cash flows*

	Note	2016 $'m	2015 $'m
Profit before Income tax		3,903	3,654
Adjustments for:			
Amortisation of goodwill	21	27	27
Write off goodwill	21	—	1
Amortisation of intangible assets		3	1
Depreciation of tangible fixed assets		3	2
Net interest income	8	(739)	(816)
Loss from investment in associate	22	2	24
Other non-cash movements		(56)	(50)
Operating cash flows before changes in operating assets and liabilities		3,143	2,843
Changes in operating assets			
Increase in loans and advances to banks		(3,458)	(67)
Decrease in loans and advances to customers		1,527	948
Decrease in securities purchased under resale agreements		1,447	9,069
(Increase)/decrease in securities borrowed		(10,792)	1,689
(Increase)/decrease in financial assets held for trading		(22,951)	4,136
Increase in financial assets designated at fair value through profit or loss		(190)	(55)
(Increase)/decrease in financial assets available for sale		(87)	1,448
(Increase)/decrease in other assets		(23,572)	5,606
(Increase)/decrease in prepayments and accrued income		5	80
		(58,071)	22,854
Changes in operating liabilities			
Increase/(decrease) in deposits by banks		28	(281)
(Decrease)/increase in customer accounts		(370)	2,450
Increase in securities sold under repurchase agreements		2,720	5,358
Increase/(decrease) in securities loaned		9,017	(10,475)
Increase/(decrease) in financial liabilities held for trading		30,580	(2,961)
Increase/(decrease) in other liabilities		30,149	(22,882)
Increase in accruals and deferred income		635	395
Decrease in subordinated liabilities	27	(1)	—
		72,758	(28,396)
Interest received		2,074	2,066
Interest paid		(1,335)	(1,250)
Net cash generated from/(used in) operating activities		18,569	(1,883)

33. Commitments

The Group provides lending-related financial instruments (e.g., commitments and guarantees) to meet the financing needs of its customers. The contractual amount of these financial instruments represents the maximum possible credit risk to the Group should the counterparty draw upon the commitment or the Group be required to fulfill its obligation under the guarantee, and should the counterparty subsequently fail to perform according to the terms of the contract. Most of these commitments and guarantees expire without being drawn or a default occurring. As a result, the total contractual amount of these instruments is not, in the Group's view, representative of its actual future credit exposure or funding requirements.

	2016	2015
	$'m	$'m
Guarantees	289	310
Standby letters of credit	1,241	1,076
Other lending commitments	18,041	19,088
	19,571	20,474

There are no lending commitments to JPMorgan Chase undertakings (2015: $nil).

34. Pension commitments

During the year, the Group participated in the following pension schemes in the UK:

- JPMorgan UK Pension Plan ("UKP") - an ongoing defined contribution pension scheme;
- JPMC UK Retirement Plan - a defined benefit scheme; and
- JPMorgan Cazenove (1987) Pension scheme ("UKS") - a defined benefit scheme.

In Europe, the Group also operates defined benefit and defined contribution schemes for its employees in the overseas branches of JPMS plc and JPMIB in Switzerland, Germany, France, Italy and Spain.

Based on full actuarial valuations carried out during the year, the net liability in respect of these European schemes of JPMS plc as at 31 December 2016 amounted to $9,488,000 (2015: $8,165,000). The charge for the year through profit and loss was $2,094,000 (2015: $1,620,000), and total gain recognised through the statement of comprehensive income was $1,636,000 (2015: $3,297,000).

The European branch schemes in JPMIB are not material to the Group and have not been included in the following disclosure.

JPMorgan UK Pension Plan ("UKP")

The JPMorgan UK Pension Plan is a defined contribution scheme operated by the Firm, which is open to additional members and benefit accruals.

JPMC UK Retirement Plan ("UKR")

The Firm maintains a defined benefit plan that is closed to additional benefit accruals known as the JPMC UK Retirement plan. Whilst the Company is not a participating employer in this plan, its subsidiary JPMEL, is a participating employer. In addition, JPMS plc, does have certain obligations under a Withdrawal Agreement dated 24 May 2011 that was entered into in relation to J.P. Morgan Services LLP ("LLP"), a Group undertaking which had previously been a participating employer in the plan.

34. Pension commitments (continued)

JPMC UK Retirement Plan ("UKR") (continued)

Under the terms of the withdrawal agreement, JPMS plc became responsible for the LLP's portion of the pension obligations calculated in accordance with paragraph 5(2) of Schedule 1A to the Occupational Pension Schemes (Employer Debt) Regulations 2005 (as amended) with effect from 1 June 2011. JPMS plc was not required to make any payments immediately or in relation to the ongoing funding of the plan. However, payments may become due from the JPMS plc on the occurrence of the earliest of the following events:

- The commencement of the winding up of the plan;
- The insolvency of the plan's last remaining participating employer;
- The insolvency of JPMS plc;
- Any other date agreed between the JPMS plc and the Trustee of the Plan.

Summarised information in respect of the UKR scheme across all of the participating entities is set out below:

Scheme	JPMC UK Retirement Plan
Date of most recent valuation by independent actuary	31 December 2016
Valuation assumptions (p.a.)	
Price inflation	3.5%
Price inflation	2.4%
Pension increase	3.2%
Investment return	2.5%
Discount rate	2.5%
Market value of scheme assets	$2,330 million
Past service liability	$2,196 million
Surplus	$135 million
FRS 102 funding level	106%

In addition, the Plan has been closed to future accrual for all members from 31 December 2007.

JPMorgan Cazenove (1987) Pension Scheme ("UKS")

The UKS is an ongoing defined benefit plan. JPMS plc has been a principal employer in relation to UKS plan since August 2012.

The principal assumptions adopted for the valuation of the UKS at 31 December were as follows:

	2016	2015
	%	%
Discount rate	2.5	3.7
Rate of salary increase	N/A*	4.3
Rate of price inflation	3.5	3.3
Rate of pension increases	3.0	2.9

* The salary increase assumption no longer applies for the UKS as this plan was closed to future accruals on 31 May 2016.

34. Pension commitments (continued)

JPMorgan Cazenove (1987) Pension Scheme ("UKS") (continued)

Assumed life expectancy on retirement at age 65 were as follows:

	2016	2015
	years	years
Longevity at age 65 for current pensioners		
- Male	24.1	24
- Female	25.1	25
Longevity at age 65 for future pensioners		
- Male	26.7	26.6
- Female	26.9	26.9

The movements in the UKS' liability for the year ended 31 December were as follows:

	2016	2015
	$'m	$'m
Benefit obligation at beginning of the year	496	551
Current service costs	1	2
Interest costs	16	19
Actuarial loss/(gain)	138	(33)
Benefits paid from plan/company	(23)	(18)
Exchange rate changes	(93)	(25)
Benefit obligation at end of the year	535	496

The movements in the UKS' assets for the year ended 31 December was as follows:

	2016	2015
	$'m	$'m
Fair value of plan assets at beginning of year	451	484
Expected return on plan assets	15	17
Actuarial (loss)/ gain on plan assets	66	(16)
Employer contributions (including employer direct benefit payments)	8	7
Administrative expenses paid from plan assets	(1)	(1)
Benefits paid from plan/company	(23)	(18)
Exchange rate changes	(81)	(22)
Fair value of plan assets at end of the year	435	451

The equity investments and bonds which are held in the plan assets are quoted and are valued at the current bid price.

34. Pension commitments (continued)

JPMorgan Cazenove (1987) Pension Scheme ("UKS") (continued)

The sensitivity of the defined benefit obligation to changes in the weighted principal assumption is as follows:

	2016			2015		
	Change in assumption	Increase in assumption	Decrease in assumption	Change in assumption	Increase in assumption	Decrease in assumption
	%	% per annum	% per annum	%	% per annum	% per annum
Discount rate	0.25	(5.44)	5.72	0.25	(5.03)	5.28
Rate of salary increase	0.25	N/A*	N/A*	0.25	0.01	(0.01)
Rate of pension increase	0.25	3.59	(3.53)	0.25	1.72	(1.68)
Rate of price inflation	0.25	3.16	(3.17)	0.25	2.97	(2.94)
Post-retirement mortality assumption	Increase by one year	3.87	—	Increase by one year	3.28	—

* The salary increase assumption no longer applies for the UKS as this plan was closed to future accrual on 31 May 2016.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant.

Amounts recognised in the balance sheet arising from schemes that are wholly unfunded and those wholly or partly funded as at 31 December were as follows:

	2016	2015
	$'m	$'m
Present value of wholly or partly funded obligations	535	496
Fair value of plan assets	435	451
Deficit for funded plans - net liability	100	45
Experience adjustments on plan assets	(66)	16
Experience adjustments on plan liabilities	(7)	(7)

Movements in the UKS income statement for the year ended 31 December were as follows:

	2016	2015
	$'m	$'m
Current service cost	1	2
Interest cost	16	19
Expected return on plan assets	(15)	(17)
Administrative expenses paid from plan assets	1	1
Total pension cost recognised in the income statement	3	5
Exchange rate changes	(13)	(2)
Net amount recognised in the income statement	(10)	3

34. Pension commitments (continued)

JPMorgan Cazenove (1987) Pension Scheme ("UKS") (continued)

Movements in the UKS statement of other comprehensive income for the year ended 31 December were as follows:

	2016	2015
	$'m	$'m
Actuarial gains/ (loss) immediately recognised	(73)	17

The asset allocation of the UKS defined benefit schemes and expected rate of return were as follows:

	2016	2015
	Percentage of plan assets	Percentage of plan assets
	%	%
Equity securities	35.6	34.8
Bond securities	62.4	63.3
Cash	2.0	1.9
Total assets at fair value	100.0	100.0

35. Share-based payments

The ultimate parent of the Group, JPMorgan Chase & Co. has granted long-term stock-based awards to certain key employees under its Long Term Incentive Plan ("LTIP"), as amended and restated effective 19 May 2015. Under the terms of the LTIP, as of 31 December 2016, 78 million shares of common stock were available for issuance through May 2019. The LTIP is the only active plan under which the Group is currently granting stock-based incentive awards. The LTIP, plus prior Group plans and plans assumed as the result of acquisitions, are referred to collectively as the "LTI plans" and such plans constitute the Group's stock-based incentive plans.

The Firm separately recognises compensation expense for each tranche of each award as if it were a separate award with its own vesting date. For each tranche granted, compensation expense is recognised in line with how awards vest from the grant date until the vesting date of the respective tranche, provided that the employees will not become full-career eligible during the vesting period. For awards with full-career eligibility provisions and awards granted with no future substantive service requirement, the Firm accrues the estimated value of awards expected to be awarded to employees as of the grant date without giving consideration to the impact of post-employment restrictions. For each tranche granted to employees who will become full-career eligible during the vesting period, compensation expense is recognised in line with how awards vest from the grant date until the earlier of the employee's full career eligibility date or the vesting date of the respective tranche.

Restricted stock units

Restricted stock units ("RSUs") are awarded at no cost to the recipient upon their grant. RSUs are generally granted annually and generally vest at a rate of 50% after two years and 50% after three years and convert into shares of common stock at the vesting date. In addition, RSUs typically include full-career eligibility provisions, which allow employees to continue to vest upon voluntary termination, subject to post-employment and other restrictions based on age- or service-related requirements. All of these awards are subject to forfeiture until vested and contain clawback provisions that may result in cancellation prior to vesting under certain specified circumstances. RSUs entitle the recipient to receive cash payments equivalent to any dividends paid on the underlying common stock during the period the RSUs are outstanding.

Compensation expense for RSUs is measured based upon the number of shares granted multiplied by the stock price at the grant date, and for employee stock options and stock appreciation rights ("SARs"), is measured at the grant date using the Black-Scholes valuation model. Compensation expense for these awards is recognised as described above.

35. Share-based payments (continued)

Key employee stock options and SARs

Under the LTI Plans, stock options and SARs have generally been granted with an exercise price equal to the fair value of JPMorgan Chase & Co.'s common stock on the grant date. The Firm typically awards SARs to certain key employees once per year; the Firm also periodically grants employee stock options and SARs to individual employees. There were no material grants of stock options or SARs in 2016, 2015 and 2014. The 2013 grants of SARs to key employees vest rateably over five years (i.e. 20% per year) and awards contain clawback provisions similar to RSUs. The 2013 grants of SARs contain full-career eligibility provisions. SARs generally expire 10 years after the grant date.

The following table summarises additional information about options outstanding as at 31 December 2016 and 31 December 2015:

			2016			2015
	Outstanding	Weighted average exercise price	Weighted average remaining contractual life (in years)	Outstanding	Weighted average exercise price	Weighted average remaining contractual life (in years)
	'000	$		'000	$	
Range of exercise prices						
$min - $20.00	150	19.49	2.05	160	19.49	3.06
$20.01 - $35.00	—	—	—	—	—	—
$35.01 - $50.00	1,777	43.01	3.91	2,783	43.27	4.64
$50.01 and above	—	—	—	1	759.99	0.97
Total	1,927	41.86	3.96	2,944	42.22	4.56

Broad-based employee stock options

No broad-based employee stock options were granted in 2015 or in 2016. In prior years, awards were granted by the Firm under the Value Sharing Plan, a non shareholder-approved plan. For each grant, the exercise price was equal to the Firm's common stock price on the grant date. The options became exercisable over various periods and generally expire 10 years after the grant date.

The weighted-average share price during the year ended 31 December 2016 was $65.62 (2015: $63.83).

The total expense for the year relating to share-based payments was $354 million (2015: $345 million), all of which relates to equity settled share-based payments.

36. Transfer of financial assets

In the course of its normal business activities, the Group makes transfers of financial assets. Depending on the nature of the transaction, this may result in derecognition of the assets in their entirety, partial derecognition or no derecognition of the assets subject to the transfer. A summary of the main transactions, the assets and liabilities and the financial risks arising from these transactions, is set out below:

Transfers of financial assets that do not result in derecognition

Assets are transferred under repurchase and securities lending agreements with other banks and financial institutions. The substance of these transactions is secured borrowings and therefore the assets are not derecognised from the balance sheet. The recipient is generally able to use, sell or pledge the transferred assets for the duration of the transaction. The Group remains exposed to interest and credit risk on these instruments. The counterparty's recourse is generally not limited to the transferred assets. The fair value of the collateral and the carrying amounts of the liabilities is disclosed in note 29 of these financial statements.

The Group has also transferred equity securities to third parties in consideration for cash, while simultaneously entering into derivative transactions, with the same counterparty, which are linked to the transferred assets. The derecognition criteria have not been met because the Group retains the risk and rewards associated with the transferred financial assets, therefore the assets continue to be recognised on balance sheet together with the related liability.

36. Transfer of financial assets (continued)

The following is a summary of the fair value of the assets and carrying amount of related liabilities:

	Fair value of the assets		Carrying amount of the related liability	
	2016	2015	2016	2015
	$'m	$'m	$'m	$'m
Financial assets held for trading	5,720	7,422	5,268	7,224

Continuing involvement in financial assets that have been derecognised

In order to reduce the impact of capital requirements, large loans and advances are sub-participated to J.P. Morgan Chase Bank, N.A., an affiliated entity, and not recognised on the balance sheet of the Group.

In some cases, the Group transfers financial assets that it derecognises in its entirety even though it may have continuing involvement in them. This typically happens when the Group has sold a financial asset to a special purpose vehicle ("SPV") with limited other assets and enters into a derivative with the SPV to provide investors with a specified exposure (examples include credit linked note vehicles and asset swap vehicles that are established on behalf of investors). The total notional and the market value of all derivatives executed by the Group with such SPVs (including those with such SPVs to which the Group did not transfer any financial assets) amounted to $13.2 billion and $722 million as of 31 December 2016 ($8.1 billion and $404 million as of 31 December 2015).

37. Related parties

In accordance with section 33.1A of FRS 102 'Related Party Disclosures', details of transactions with parent and fellow subsidiary companies that are also wholly-owned within JPMorgan Chase, are not disclosed as they are included in the consolidated financial statements of JPMorgan Chase, which are publicly available. There were no other material disclosable related party transactions during the year.

38. Post balance sheet events

On 20 January 2017, the available-for-sale financial assets of J.P. Morgan Europe Limited was sold to a third party for a consideration of $12 million.

During the first quarter of 2017, the JPMS plc further obtained standalone credit ratings of 'A1/P-1' and 'AA-/F1+' with stable outlooks from Moody's Investors Service and Fitch Ratings, respectively.

On 19 April 2017, the Board of J.P. Morgan Securities plc approved interim dividends of $359 million on preference shares and $7 million on preferred ordinary shares.

As part of the Firm's legal entity rationalisation efforts discussed in the Regulatory developments section of the Strategic report on page 4, management undertook certain steps to simplify the UK legal entity structure of the Group. Key events that impacted the Company included:

- On 5 June 2017, J.P. Morgan Overseas Capital LLC ("JPMOC LLC") distributed ordinary shares in the Company to J.P. Morgan International Finance Limited ("JPMIFL"), resulting in the Company becoming a wholly owned subsidiary of JPMIFL.

- On 6 June 2017, fixed rate preference shares issued by JPMCIH to J.P. Morgan Whitefriars (UK) (note 30) were contributed in to the Company by its immediate parent JPMIFL. As a result, the non-controlling interest in the Group was reduced by $1,957 million with a corresponding increase in capital contribution reserve. On 9 June 2017 upon receipt of the preference shares, JPMCHL contributed the shares into its subsidiary, JPMCUKHL. These preference shares were subsequently cancelled and extinguished on 12 June 2017.

- On 12 June 2017, the Company accepted from JPMCIH the transfer of ordinary shares in JPMS plc in exchange for:

  i. the satisfaction of the $12 billion subordinated loans and all accrued interest thereunder (refer to note 19 for details of the subordinated loans that existed at 31 December 2016); and

  ii. the Company assuming all of JMCIH's rights and obligations with respect to $200 million loan JPMCIH had entered into with JPMorgan Chase Bank, N.A.

38. Post balance sheet events (continued)

- On 13 June 2017, JPMCUKHL declared an interim dividend to be paid to the Company to the value of $ 4.6 million in cash and JMCUKHL's entire shareholding of the following subsidiaries. As a result, these subsidiaries became directly and wholly owned by the Company:

  i. JPMS plc

  ii. J.P. Morgan International Bank Limited

  iii. J.P. Morgan Courtage SAS

  iv. Crosby Sterling (Holdings) Limited

  v. J.P. Morgan EU Holdings Limited

  vi. J.P. Morgan Limited

  vii. Bear Stearns Pension Trustee Limited

  viii. Chembank Nominees Limited

  ix. Chemical Bank (UK) Pension Trustee Limited

  x. Chemical Bank Pension Plan Trustee Limited

  xi. J.P. Morgan Chase Pension Plan Trustee Limited

- On 14 June 2017, JPMS plc redeemed the preferred ordinary shares and fixed rate preference shares (note 30), comprising the entire shareholding of J.P. Morgan Capital Financing Limited ("JPMCFL").

- On 14 June 2017, JPMCUKHL and JPMCIH were placed into members' voluntary liquidation.

- On 11 September 2017, all of JPMS plc's preference shares and preferred ordinary shares were converted into ordinary share capital.