

J.P.Morgan

J.P. Morgan Structured Products B.V.

(incorporated with limited liability in The Netherlands)

and

J.P. Morgan Securities plc

(incorporated with limited liability in the United Kingdom)

*This document (the "**Registration Document**") constitutes two registration documents for the purpose of Section 12 paragraph 1 of the German Securities Prospectus Act in conjunction with Article 7 and Annex IV of the Commission Regulation (EC) No. 809/2004 of 29 April 2004, as amended (the "**Prospectus Regulation**"): (i) the registration document in relation to J.P. Morgan Structured Products B.V., Amsterdam, The Netherlands (the "**Issuer**" or "**JPMSP**") and (ii) the registration document in relation to J.P. Morgan Securities plc, London, United Kingdom as guarantor for certain securities issued by JPMSP ("**JPMS plc**" or, the "**Guarantor**"). The competent authority for the approval of the Registration Document pursuant to Section 12 and Section 13 of the German Securities Prospectus Act (the "**WpPG**") that implements Directive 2003/71/EC, as amended from time to time, including by Directive 2010/73/EU (the "**Prospectus Directive**") into German law is the German Federal Supervisory Authority (the "**Competent Authority**").*

JPMSP in its capacity as an issuer, subject to compliance with all relevant laws, regulations and directives, may from time to time issue notes or other similar instruments ("**Notes**"), warrants or other similar instruments ("**Warrants**") and certificates or other similar instruments ("**Certificates**"). Notes, Warrants and Certificates shall be referred to collectively as "**Securities**". Payment obligations of JPMSP in respect of certain Securities will be guaranteed by JPMS plc. Further information on the respective guarantee (in each case a "**Guarantee**") and, in particular, the exact wording, the Securities and the terms and conditions thereof are set forth in the prospectuses for the relevant Securities (the "**Prospectus**").

The distribution of this Registration Document and any information incorporated by reference into this Registration Document and the offer or sale of Securities issued by JPMSP may be restricted by law in certain jurisdictions. Persons into whose possession this Registration Document or any information incorporated by reference into this Registration Document or any securities issued by JPMSP come must inform themselves about, and observe, any such restrictions.

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I. RISK FACTORS

J.P. Morgan Structured Products B.V. ("**JPMSP**" or the "**Issuer**") is an indirect, wholly-owned subsidiary of JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. is one of the principal bank subsidiaries of JPMorgan Chase & Co (the "**holding company**" and, JPMorgan Chase & Co. together with its consolidated subsidiaries "**JPMorgan Chase**"). J.P. Morgan Securities plc ("**JPMS plc**" or the "**Guarantor**") is also a principal bank subsidiary of JPMorgan Chase. Investors in the Securities are exposed to the creditworthiness of JPMSP as an issuer of Securities and to the creditworthiness of JPMS plc as Guarantor of the Securities issued by JPMSP. On account of JPMSP and JPMS plc being subsidiaries of JPMorgan Chase & Co., the risks that affect JPMorgan Chase can also affect JPMSP and JPMS plc, either directly as an individual entity or indirectly as part of JPMorgan Chase.

JPMorgan Chase is a major, global financial services group and, as such, faces a variety of risks that are substantial and inherent in its businesses, and which may affect JPMSP's and the Guarantor's ability to fulfil its respective payment, delivery or other obligations under the Securities.

JPMSP will, in respect of each issuance, enter into hedging arrangements with one or more companies of JPMorgan Chase, which may in turn hedge their positions by entering into hedging arrangements with another JPMorgan Chase company. If any of these JPMorgan Chase companies incurs losses with respect to any of its activities (irrespective of whether those activities relate to JPMSP or not) the ability of such company to fulfil its obligations under such hedging arrangements could be impaired, thereby exposing holders of securities issued by JPMSP to a risk of loss. Should this circumstance materialise, the payment obligations of JPMSP under the terms of the Securities issued by JPMSP would be guaranteed by JPMS plc.

JPMS plc is one of the principal operating companies in the JPMorgan Chase group. JPMS plc itself provides a wide range of financial and securities services. There are also substantial inter-relationships between JPMS plc and other companies of JPMorgan Chase, which may include the provision of funding, capital services and logistical support to or by JPMS plc, as well as common or shared business or operational platforms or systems, including employees. As a consequence of such inter-relationships, and of the participation of both JPMS plc and other JPMorgan Chase group companies in the global financial services sector, factors which could affect the business and condition of JPMorgan Chase & Co. or other companies of JPMorgan Chase may also affect the business and condition of JPMS plc. Any such effect could be direct, for example, where economic or market factors directly affect the markets in which JPMS plc and other companies of JPMorgan Chase operate, or indirect, for example where any factor affects the ability of other companies in the JPMorgan Chase group to provide services or funding or capital to JPMS plc or, directly or indirectly, to place business with JPMS plc. Similarly, any development affecting the reputation or standing of JPMorgan Chase & Co. or other companies in the JPMorgan Chase group may have an indirect effect on JPMS plc. Such inter-relationships should therefore be taken into account in any assessment of JPMS plc.

Purchase of Securities issued by JPMSP involves substantial risks: Investors should ensure that they understand the nature of the risks posed by, and the extent of their exposure under, the Securities. Investors should consider the suitability of the Securities as an investment in light of their own circumstances, investment objectives, tax position and financial condition.

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1. **Regulatory Risk**

1.1 **JPMorgan Chase's businesses are highly regulated, and the laws and regulations that apply to JPMorgan Chase have a significant impact on its operations.**

JPMorgan Chase is a financial services firm with operations worldwide. JPMorgan Chase must comply with the laws and regulations that apply to its operations in all of the jurisdictions around the world in which it does business. The regulation of financial services activities is typically extensive and comprehensive.

In recent years, legislators and regulators adopted a wide range of new laws and regulations affecting the financial services industry, both within and outside the U.S. The supervision of financial services firms also expanded significantly during this period. The wave of increased regulation and supervision of JPMorgan Chase has affected the way that it conducts and structures its operations. Existing and new laws and regulations and expanded supervision could require JPMorgan Chase to make further changes to its operations. These changes could result in JPMorgan Chase incurring additional costs for complying with laws and regulations or losing a significant amount of revenue, and could reduce JPMorgan Chase's profitability. More specifically, existing and new laws and regulations could require JPMorgan Chase to:

- limit the products and services that it offers;
- reduce the liquidity that it can provide through its market-making activities;
- stop or discourage it from engaging in business opportunities that it might otherwise pursue;
- recognise losses in the value of assets that it holds;
- pay higher assessments, levies or other governmental charges;
- dispose of certain assets, and do so at times or prices that are disadvantageous;
- impose restrictions on certain business activities, or
- increase the prices that it charges for products and services, which could reduce the demand for them.

1.2 **Differences in financial services regulation can be disadvantageous for JPMorgan Chase's business.**

The content and application of laws and regulations affecting financial services firms sometimes vary according to factors such as the size of the firm, the jurisdiction in which it is organised or operates, or other criteria. For example:

- larger firms are often subject to more stringent supervision and regulation;
- financial technology companies and other competitors may not be subject to banking regulation, or may be supervised by a national or state regulatory agency that does not have the same resources or regulatory priorities as the regulatory agencies which supervise more diversified financial services firms; or
- the financial services regulatory framework in a particular jurisdiction may favor financial institutions that are based in that country.

There can also be significant differences in the ways that similar regulatory initiatives affecting the financial services industry are implemented in the U.S. and in different countries and regions in which JPMorgan Chase does business. For example, legislative and regulatory initiatives within the EU could require JPMorgan Chase to make significant modifications to its operations and legal entity structure in that region in order to comply with those

requirements. These include laws and regulations that have been adopted or proposed relating to:

- the resolution of financial institutions;
- the establishment by non-EU financial institutions of intermediate holding companies in the EU;
- the separation of trading activities from core banking services;
- mandatory on-exchange trading;
- position limits and reporting rules for derivatives;
- governance and accountability regimes;
- conduct of business requirements; and
- restrictions on compensation.

These types of differences in financial services regulation, or inconsistencies or conflicts between laws and regulations between different jurisdictions, could require JPMorgan Chase to, among other things:

- divest assets or restructure its operations;
- absorb increased operational, capital and liquidity costs;
- change the prices that it charges for its products and services;
- curtail the products and services that it offers to its customers and clients; or
- incur higher costs for complying with different legal and regulatory frameworks.

Any or all of these factors could harm JPMorgan Chase's ability to compete against other firms that are not subject to the same laws and regulations or supervisory oversight, or harm JPMorgan Chase's businesses, results of operations and profitability.

Governments in some countries in which JPMorgan Chase does business have adopted laws or regulations which require that JPMorgan Chase subsidiaries which operate in those countries maintain minimum amounts of capital or liquidity on a stand-alone basis. Some regulators outside the U.S. have also proposed that large banks which conduct certain businesses in their jurisdictions operate through separate subsidiaries located in those countries. These requirements, and any future laws or regulations that impose restrictions on the way JPMorgan Chase organises its businesses or increase the capital or liquidity requirements that would apply to JPMorgan Chase subsidiaries, could hinder JPMorgan Chase's ability to efficiently manage its operations, increase its funding and liquidity costs, and result in lower profitability.

1.3 Heightened regulatory scrutiny of JPMorgan Chase's businesses has increased its compliance costs and could result in restrictions on its operations.

JPMorgan Chase's operations are subject to heightened oversight and scrutiny from regulatory authorities in many jurisdictions where JPMorgan Chase does business. JPMorgan Chase has paid significant fines or provided other monetary relief in connection with resolving several investigations and enforcement actions by governmental agencies. JPMorgan Chase could become subject to similar regulatory settlements or other actions in the future, and addressing the requirements of any such settlement could result in JPMorgan Chase incurring higher operational and compliance costs. In connection with resolving specific regulatory investigations or enforcement actions, certain regulators have required JPMorgan Chase and

other financial institutions to admit wrongdoing with respect to the activities that gave rise to the settlement. These types of admissions can lead to:

- greater exposure in civil litigation;
- damage to reputation;
- disqualification from doing business with certain clients or customers, or in specific jurisdictions; or
- other direct and indirect adverse effects.

Furthermore, U.S. government officials have demonstrated a willingness to bring criminal actions against financial institutions and have increasingly demanded that institutions plead guilty to criminal offences or admit other wrongdoing in connection with resolving regulatory investigations or enforcement actions. In the case of JPMorgan Chase, these resolutions have included:

- JPMorgan Chase's agreement in May 2015 to plead guilty to a single violation of federal antitrust law in connection with its settlements with certain government authorities relating to its foreign exchange sales and trading activities and controls related to those activities; and
- the non-prosecution agreement entered into by a subsidiary of JPMorgan Chase with the U.S. Department of Justice in November 2016 in connection with settlements to resolve various governmental investigations relating to a former hiring programme for candidates referred by clients, potential clients and government officials in the Asia Pacific region.

Resolutions of this type can have significant collateral consequences for the subject financial institution, including loss of clients, customers and business, the inability to offer certain products or services, or losing permission to operate certain businesses, either temporarily or permanently.

JPMorgan Chase expects that it and other financial services firms will continue to be subject to expanded regulatory scrutiny and governmental investigations and enforcement actions. JPMorgan Chase also expects that regulators will continue to insist that financial institutions be penalised for actual or deemed violations of law with formal and punitive enforcement actions, including the imposition of significant monetary and other sanctions, rather than resolving these matters through informal supervisory actions. Furthermore, if JPMorgan Chase fails to meet the requirements of any governmental settlements and other actions to which it is subject, or to maintain risk and control processes that meet the heightened standards established by its regulators, it could be required to, among other things:

- enter into further orders and settlements;
- pay additional regulatory fines, penalties or judgments; or
- accept material regulatory restrictions on, or changes in the management of, its businesses.

The extent of JPMorgan Chase's exposure to legal and regulatory matters can be unpredictable and could, in some cases, exceed the amount of reserves that JPMorgan Chase has established for those matters.

1.4 **Requirements for the orderly resolution of JPMorgan Chase could result in JPMorgan Chase having to restructure or reorganise its businesses.**

JPMorgan Chase is required under the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "**Dodd-Frank Act**") and Federal Reserve and U.S. Federal Deposit

Insurance Corporation ("FDIC") rules to prepare and submit periodically to those agencies a detailed plan for rapid and orderly resolution in bankruptcy without extraordinary government support, in the event of material financial distress or failure. The agencies' evaluation of JPMorgan Chase's resolution plan may change, and the requirements for resolution plans may be modified from time to time. Any such determinations or modifications could result in JPMorgan Chase making changes to its legal entity structure or to certain internal or external activities that could increase funding or operational costs.

If the Federal Reserve and the FDIC were to determine that a future resolution plan submitted by JPMorgan Chase has deficiencies, they could jointly impose more stringent capital, leverage or liquidity requirements or restrictions on JPMorgan Chase's growth, activities or operations. After two years, if the deficiencies are not cured, the agencies could also require that JPMorgan Chase restructure, reorganise or divest assets or businesses in ways that could materially and adversely affect JPMorgan Chase's operations and strategy. As a consequence, operations, business and assets of JPMSP and/or JPMS plc could be transferred to other members of the group and JPMSP and/or JPMS plc could be reorganised or liquidated.

2. **Political Risk**

2.1 **Political developments can cause uncertainty concerning the regulatory environment in which JPMorgan Chase operates its businesses.**

Recent elections and referendums in the U.S. and abroad have introduced uncertainty regarding the regulatory environment in which JPMorgan Chase and other financial services firms will operate in the future. For example, the U.K.'s planned departure from the EU has engendered significant uncertainty concerning the regulatory framework under which global financial services institutions, including JPMorgan Chase, will need to conduct their business in the U.K. and the EU. Depending on the nature of the arrangements agreed between the U.K. and the EU, including with respect to the ability of financial services companies to engage in business in the EU from legal entities organised in or operating from the U.K., JPMorgan Chase may need to make significant changes to its legal entity structure and operations and the locations in which it operates. These types of structural and operational changes could result in JPMorgan Chase needing to implement an operating model across its European legal entities that is less efficient or cost-effective.

The result of an election may suggest that the new administration will ease the regulatory requirements that apply to financial services firms. However, it is equally possible that the potential for reduced regulation does not occur or is reversed by another regulator or by a subsequent administration, or that deregulation measures that are ultimately enacted deliver significant competitive advantages to financial services firms that are structured differently or serve different markets than JPMorgan Chase. JPMorgan Chase cannot predict political developments of this nature, or whether they will have favourable or unfavourable long-term effects on its businesses.

2.2 **Economic uncertainty caused by political developments can hurt JPMorgan Chase's businesses.**

The economic environment and market conditions in which JPMorgan Chase operates continue to be uncertain due to recent political developments in the U.S. and abroad. Certain policy proposals, including isolationist foreign policies, protectionist trade policies or the possible withdrawal or reduction of government support for U.S. government sponsored entities, could cause a contraction in U.S. and global economic growth and higher volatility in the financial markets. These types of political developments could, among other things:

- erode investor confidence in the U.S. economy and financial markets;
- heighten concerns about whether the U.S. government will be funded, and its outstanding debt serviced, at any particular time; and
- undermine the status of the U.S. dollar as a safe haven currency.

These factors could lead to greater market volatility, large-scale sales of U.S. government debt and other U.S. debt and equity securities, the widening of credit spreads and other market dislocations. Any of these potential outcomes could cause JPMorgan Chase to suffer losses in its investment securities portfolio, reduce its capital levels, hamper its ability to deliver products and services to its clients and customers, and weaken its results of operations.

Political developments in other parts of the world have also led to uncertainty in global economic conditions, including:

- concerns about the capabilities and intentions of the government of North Korea; and
- regional hostilities, and political or social upheavals, in other parts of the world.

JPMorgan Chase's results of operations can be adversely affected by the uncertainty arising from significant political developments and any market volatility or disruption that results from that uncertainty.

2.3 The positive impact of U.S. tax reform legislation on JPMorgan Chase may diminish over time.

The long-term impact of the tax reform legislation recently enacted in the U.S. on JPMorgan Chase and the U.S. economy is not yet known. While the tax reform will have a positive impact on JPMorgan Chase's net income, the competitive environment and other factors will influence the extent to which these benefits are retained by JPMorgan Chase over the longer term. In addition, the specific impact on JPMorgan Chase's businesses, products and geographies may vary.

3. Market Risk

3.1 JPMorgan Chase's businesses are materially affected by economic and market conditions.

JPMorgan Chase's results of operations can be negatively affected by adverse changes in any of the following:

- the liquidity in the U.S. and global financial markets;
- the level and volatility of market prices and rates, including those for debt and equity instruments, currencies, commodities, interest rates and other market indices;
- investor, consumer and business sentiment;
- events that reduce confidence in the financial markets;
- inflation and unemployment;
- the availability and cost of capital and credit;
- the economic effects of natural disasters, severe weather conditions, health emergencies or pandemics, cyberattacks, outbreaks of hostilities, terrorism or other geopolitical instabilities;
- monetary and fiscal policies and actions taken by governmental authorities, including the Federal Reserve and other central banks; and
- the health of the U.S. and global economies.

JPMorgan Chase's consumer businesses are particularly affected by U.S. domestic economic conditions, including:

- U.S. interest rates;
- the rate of unemployment;
- housing prices;
- the level of consumer confidence; and
- the number of personal bankruptcies.

Sustained low growth in the U.S. economy could diminish customer demand for the products and services offered by JPMorgan Chase's consumer businesses. It could also increase the cost to provide those products and services. Adverse economic conditions could also lead to an increase in delinquencies in mortgage, credit card, auto and other loans and higher net charge-offs, which can reduce JPMorgan Chase's earnings. These consequences could be significantly worse in certain geographies where high levels of unemployment have resulted from declining industrial or manufacturing activity.

JPMorgan Chase's earnings from its consumer businesses could also be adversely affected by changes in government policies that affect consumers, including those relating to medical insurance, immigration and employment status, as well as governmental policies aimed at the economy more broadly, such as infrastructure spending and global trade, which could result in, among other things, higher inflation or reductions in consumer disposable income.

In JPMorgan Chase's wholesale businesses, market and economic factors can affect the volume of transactions that JPMorgan Chase executes for its clients and, therefore, the revenue that JPMorgan Chase receives from those transactions. These factors can also influence the willingness of other financial institutions and investors to participate in capital markets transactions that JPMorgan Chase manages, such as loan syndications or securities underwritings. Furthermore, if a significant and sustained deterioration in market conditions were to occur, the profitability of JPMorgan Chase's capital markets businesses could be reduced to the extent that those businesses:

- earn less fee revenue due to lower transaction volumes, including when clients are unwilling or unable to refinance their outstanding debt obligations in unfavourable market conditions;
- dispose of portions of credit commitments, such as loan syndications or securities underwritings, at a loss; or
- hold larger residual positions in credit commitments that cannot be sold at favourable prices.

3.2 **JPMorgan Chase's investment securities portfolio and market-making positions can suffer losses due to adverse economic, market and political events and conditions.**

JPMorgan Chase generally maintains positions in various fixed income instruments in its investment securities portfolio, and positions in various fixed income, currency, commodity, credit and equity instruments as part of its market-making activities. Market-making positions are intended to facilitate demand from JPMorgan Chase's clients for these instruments and to provide liquidity for clients. The value of the positions that JPMorgan Chase holds can be significantly affected by factors such as:

- JPMorgan Chase's ability to effectively hedge market and other risks on its positions;
- volatility in interest rates and debt, equity and commodities markets;
- changes in interest rates and credit spreads; and
- the availability of liquidity in the capital markets.

All of these are affected by global economic, market and political events and conditions, as well as regulatory restrictions on market-making activities.

JPMorgan Chase's investment securities portfolio and market-making businesses can also suffer losses due to unanticipated market events, including:

- severe declines in asset values;
- unexpected credit events;
- unforeseen events or conditions that may cause previously uncorrelated factors to become correlated (and vice versa); or
- other market risks that may not have been appropriately taken into account in the development, structuring or pricing of a financial instrument.

If JPMorgan Chase experiences significant losses in its investment securities portfolio or from market-making activities, this could reduce JPMorgan Chase's profitability and its capital levels, and thereby constrain the growth of its businesses.

3.3 JPMorgan Chase's asset and wealth management and custody businesses may earn lower fee revenue during adverse macroeconomic conditions.

The fees that JPMorgan Chase earns from managing third-party assets or holding assets in custody for clients could be diminished by declining asset values or other adverse macroeconomic conditions. For example, higher interest rates or a downturn in financial markets could affect the valuations of the client assets that JPMorgan Chase manages or holds in custody, which, in turn, could affect JPMorgan Chase's revenue from fees that are based on the amount of assets under management or custody. Similarly, adverse macroeconomic or market conditions could prompt outflows from JPMorgan Chase's funds or accounts, or cause clients to invest in products that generate lower revenue. Substantial and unexpected withdrawals from a JPMorgan Chase fund can also hamper the investment performance of the fund, particularly if the outflows create the need for the fund to dispose of fund assets at disadvantageous times or prices, and could lead to further withdrawals based on the weaker investment performance.

3.4 Changes in interest rates and credit spreads can adversely affect certain of JPMorgan Chase's revenue and income streams.

JPMorgan Chase can generally be expected to earn higher net interest income when interest rates are high or increasing. However, higher interest rates can also lead to:

- fewer originations of commercial and residential loans;
- lower returns on JPMorgan Chase's investment securities portfolio; and
- the loss of deposits to the extent that JPMorgan Chase makes incorrect assumptions about depositor behaviour.

All of these outcomes could adversely affect JPMorgan Chase's revenues and capital levels. Higher interest rates can also negatively affect the payment performance on loans within JPMorgan Chase's consumer and wholesale loan portfolios that are linked to variable interest rates. If borrowers of variable rate loans are unable to afford higher interest payments, those borrowers may reduce or stop making payments, thereby causing JPMorgan Chase to incur losses and increased operational costs related to servicing a higher volume of delinquent loans.

On the other hand, a low interest rate environment may cause JPMorgan Chase's net interest margins to be compressed, which could reduce:

- the amounts that JPMorgan Chase earns on its investment securities portfolio to the extent that it is unable to reinvest contemporaneously in higher-yielding instruments; and
- the value of JPMorgan Chase's mortgage servicing rights ("**MSRs**") asset, thereby reducing its net interest income and other revenues.

When credit spreads widen, it becomes more expensive for JPMorgan Chase to borrow. JPMorgan Chase's credit spreads may widen or narrow not only in response to events and circumstances that are specific to JPMorgan Chase but also as a result of general economic and geopolitical events and conditions. Changes in JPMorgan Chase's credit spreads will affect, positively or negatively, JPMorgan Chase's earnings on certain liabilities, such as derivatives, that are recorded at fair value.

3.5 **High market volatility can impact JPMorgan Chase's markets businesses.**

While JPMorgan Chase's markets businesses may earn higher flow revenue during periods of elevated market volatility, sudden and significant volatility in the prices of securities, loans, derivatives and other instruments can:

- curtail the trading markets for those instruments;
 - make it difficult to sell or hedge those instruments;
 - increase JPMorgan Chase's funding costs; or
 - adversely affect JPMorgan Chase's profitability, capital or liquidity.
- (a) The Federal Reserve has observed that market volatility may be exacerbated by regulatory restrictions. It noted that market participants that are subject to section 619 of the Dodd-Frank Act (the "**Volcker Rule**") are likely to decrease their market-making activities, and thereby constrain market liquidity, during periods of market stress. Furthermore, market participants that are not required to hold substantial amounts of capital may retreat more quickly from volatile markets, which could further reduce market liquidity.
- (b) In a difficult or less liquid market environment, JPMorgan Chase's risk management strategies may not be effective because other market participants may be attempting to use the same or similar strategies. In these circumstances, it may be difficult for JPMorgan Chase to reduce its risk positions due to the activity of other market participants or widespread market dislocations.

Sustained volatility in the financial markets may also negatively affect consumer or investor confidence, which could lead to lower client activity and reduce JPMorgan Chase's revenues.

4. **Credit Risk**

4.1 **JPMorgan Chase can be adversely affected by the financial condition of its clients, customers and counterparties.**

JPMorgan Chase routinely executes transactions with brokers and dealers, commercial and investment banks, mutual and hedge funds, investment managers and other types of financial institutions. Many of these transactions expose JPMorgan Chase to the credit risk of its clients and counterparties, and can involve JPMorgan Chase in disputes and litigation in the event that a client or counterparty defaults. JPMorgan Chase can also be subject to losses or liability where a financial institution that it has appointed to provide custody services for assets of JPMorgan Chase's clients becomes insolvent.

Disputes may arise with counterparties to derivatives contracts with regard to the terms, the settlement procedures or the value of underlying collateral. The disposition of those disputes

could cause JPMorgan Chase to incur unexpected transaction, operational and legal costs, or result in credit losses. These consequences can also impair JPMorgan Chase's ability to effectively manage its credit risk exposure from its market activities.

4.2 JPMorgan Chase's markets businesses can be harmed by the insolvency of a significant market participant.

The failure of a significant market participant, or concerns about the creditworthiness of such a firm, can have a cascading effect within the financial markets. JPMorgan Chase's markets businesses could be significantly disrupted by such an event, particularly if it leads to other market participants incurring significant losses, experiencing liquidity issues or defaulting.

4.3 JPMorgan Chase's clearing services business is exposed to the risk of client or counterparty default.

As part of its clearing services activities, JPMorgan Chase is a member of various central counterparty clearinghouses ("CCPs"). In the event that another member of such an organisation defaults on its obligations to the CCP, JPMorgan Chase may be required to pay a portion of any losses incurred by the CCP as a result of that default. As a clearing member, JPMorgan Chase is also exposed to the risk of non-performance by its clients, which it seeks to mitigate by requiring clients to provide adequate collateral. JPMorgan Chase is exposed to intra-day credit risk of its clients in connection with providing cash management, clearing, custodial and other transaction services to those clients. If a client for which JPMorgan Chase provides these services becomes bankrupt or insolvent, JPMorgan Chase may incur losses, become involved in disputes and litigation with one or more CCPs, the client's bankruptcy estate and other creditors, or be subject to regulatory investigations. All of the foregoing events can increase JPMorgan Chase's operational and litigation costs, and JPMorgan Chase may suffer losses to the extent that any collateral that it has received is insufficient to cover those losses.

4.4 JPMorgan Chase may suffer losses if the value of collateral declines in stressed market conditions.

During periods of market stress or illiquidity, JPMorgan Chase's credit risk may be further increased when JPMorgan Chase cannot realise the fair value of the collateral held by it or when collateral is liquidated at prices that are not sufficient to recover the full amount of the loan, derivative or other exposure due to it. Furthermore, disputes with counterparties concerning the valuation of collateral may increase in times of significant market stress, volatility or illiquidity, and JPMorgan Chase could suffer losses during these periods if it is unable to realise the fair value of collateral or to manage declines in the value of collateral.

4.5 JPMorgan Chase could incur significant losses arising from concentrations of credit and market risk.

JPMorgan Chase is exposed to greater credit and market risk to the extent that groupings of its clients or counterparties:

- engage in similar businesses;
- do business in the same geographic region; or
- have business profiles, models or strategies that could cause their ability to meet their obligations to be similarly affected by changes in economic conditions.

For example, a significant deterioration in the credit quality of one of JPMorgan Chase's borrowers or counterparties could lead to concerns about the creditworthiness of other borrowers or counterparties in similar, related or dependent industries. This type of interrelationship could exacerbate JPMorgan Chase's credit and market risk exposure and potentially cause it to incur losses, including fair value losses in its trading businesses.

Similarly, challenging economic conditions that affect a particular industry or geographic area could lead to concerns about the credit quality of JPMorgan Chase's borrowers or counterparties not only in that particular industry or geography but in related or dependent industries, wherever located. These conditions could also heighten concerns about the ability of customers of JPMorgan Chase's consumer businesses who live in those areas or work in those affected industries or related or dependent industries to meet their obligations to JPMorgan Chase. JPMorgan Chase regularly monitors various segments of its credit and market risk exposures to assess the potential risks of concentration or contagion, but its efforts to diversify or hedge its exposures against those risks may not be successful.

JPMorgan Chase's consumer businesses can also be harmed by an excessive, industry-wide expansion of consumer credit. For example, heightened competition among financial institutions for certain types of consumer loans, including credit card, mortgage, auto or other loans, could prompt significant reductions in the pricing of those loans and thereby decrease their profitability, or result in loans being extended to less-creditworthy borrowers. If large numbers of consumers subsequently default on their loans, whether due to weak credit profiles, an economic downturn or other factors, this could impair their ability to repay obligations owed to JPMorgan Chase and result in higher charge-offs and other credit-related losses. More broadly, widespread defaults on consumer debt could lead to recessionary conditions in the U.S. economy, and JPMorgan Chase's consumer businesses may earn lower revenues in such an environment.

Disruptions in the liquidity or transparency of the financial markets could cause JPMorgan Chase to be unable to sell, syndicate or realise the value of its positions in various debt instruments, loans, derivatives and other obligations, and thereby lead to increased risk concentrations. If JPMorgan Chase is unable to reduce positions effectively during a market dislocation, this can increase both the market and credit risks associated with those positions and the level of risk-weighted assets ("RWA") that JPMorgan Chase holds on its balance sheet. These factors could increase JPMorgan Chase's capital requirements and funding costs and adversely affect the profitability of JPMorgan Chase's businesses.

5. **Liquidity Risk**

5.1 **Liquidity is critical to JPMorgan Chase's ability to fund and operate its businesses.**

JPMorgan Chase's liquidity could be impaired at any given time by factors such as:

- market-wide illiquidity or disruption;
- unforeseen cash or capital requirements;
- inability to sell assets, or to sell assets at favourable times or prices;
- default by a CCP or other significant market participant;
- unanticipated outflows of cash or collateral; and
- lack of market or customer confidence in JPMorgan Chase or financial institutions in general.

A diminution of JPMorgan Chase's liquidity may be caused by events over which it has little or no control. For example, during the 2008-2009 financial crisis, periods of low investor confidence and significant market illiquidity resulted in higher funding costs for JPMorgan Chase and limited its access to some of its traditional sources of liquidity, including securitised debt issuances. There is no assurance that severe conditions of this type will not occur in the future.

JPMorgan Chase may need to raise funding from alternative sources if its access to stable and lower-cost sources of funding, such as bank deposits and borrowings from Federal Home Loan Banks, is reduced. Alternative sources of funding could be more expensive or limited in

availability. JPMorgan Chase's funding costs could also be negatively affected by actions that JPMorgan Chase may take in order to:

- satisfy applicable liquidity coverage ratio and net stable funding ratio requirements;
- continue to satisfy requirements under the TLAC rules concerning the amount of eligible LTD that JPMorgan Chase must have outstanding;
- address obligations under its resolution plan; or
- satisfy regulatory requirements in countries outside the U.S. relating to the pre-positioning of liquidity in subsidiaries that are material legal entities.

More generally, if JPMorgan Chase fails to effectively manage its liquidity, this could constrain its ability to fund or invest in its businesses, and thereby adversely affect its results of operations.

5.2 JPMorgan Chase & Co. is a holding company and depends on the cash flows of its subsidiaries to make payments on its outstanding securities.

JPMorgan Chase & Co. is a holding company that holds the stock of JPMorgan Chase Bank, N.A. and an intermediate holding company, JPMorgan Chase Holdings LLC (the "IHC"). The IHC in turn holds the stock of substantially all of JPMorgan Chase's subsidiaries other than JPMorgan Chase Bank, N.A. and its subsidiaries. The IHC also owns other assets and intercompany indebtedness owing to the holding company.

The holding company is obligated to contribute to the IHC substantially all the net proceeds received from securities issuances (including issuances of senior and subordinated debt securities and of preferred and common stock).

The ability of JPMorgan Chase Bank, N.A. and the IHC to make payments to the holding company is also limited. JPMorgan Chase Bank, N.A. is subject to restrictions on its dividend distributions, as well as capital adequacy and liquidity requirements and other regulatory restrictions on its ability to make payments to the holding company. The IHC is prohibited from paying dividends or extending credit to the holding company if certain capital or liquidity "thresholds" are breached or if limits are otherwise imposed by JPMorgan Chase's management or Board of Directors.

As a result of these arrangements, the ability of the holding company to make various payments is dependent on its receiving dividends from JPMorgan Chase Bank, N.A. and dividends and extensions of credit from the IHC. These limitations could affect the holding company's ability to:

- pay interest on its debt securities;
- pay dividends on its equity securities;
- redeem or repurchase outstanding securities; and
- fulfill its other payment obligations.

Collectively, these regulatory restrictions and limitations could significantly limit the holding company's ability to pay dividends and satisfy its debt and other obligations. They could also result in the holding company seeking protection under bankruptcy laws at a time earlier than would have been the case absent the existence of those thresholds.

5.3 Reductions in JPMorgan Chase's credit ratings may adversely affect its liquidity and cost of funding.

JPMorgan Chase and certain of its principal subsidiaries are rated by credit rating agencies. Rating agencies evaluate both general and firm- and industry-specific factors when determining their credit ratings for a particular financial institution, including:

- economic and geopolitical trends;
- regulatory developments;
- expected future profitability;
- risk management practices;
- legal expenses;
- assumptions about government support; and
- ratings differentials between bank holding companies and their bank and non-bank subsidiaries.

JPMorgan Chase closely monitors and manages, to the extent that it is able, factors that could influence its credit ratings. However, there is no assurance that JPMorgan Chase's credit ratings will not be lowered in the future. Furthermore, any such downgrade could occur at times of broader market instability when JPMorgan Chase's options for responding to events may be more limited and general investor confidence is low.

A reduction in JPMorgan Chase's credit ratings could curtail JPMorgan Chase's business activities and reduce its profitability in a number of ways, including by:

- reducing access to capital markets;
- materially increasing the cost of issuing and servicing securities;
- triggering additional collateral or funding requirements; and
- decreasing the number of investors and counterparties that are willing or permitted to do business with or lend to JPMorgan Chase.

Any rating reduction could also increase the credit spreads charged by the market for taking credit risk on JPMorgan Chase & Co. and its subsidiaries. This could, in turn, adversely affect the value of debt and other obligations of JPMorgan Chase & Co. and its subsidiaries.

5.4 Regulation and reform of benchmarks could have adverse consequences on securities and other instruments that are linked to those benchmarks.

Interest rate, equity, foreign exchange rate and other types of indices which are deemed to be "**benchmarks**" are the subject of recent international, national and other regulatory guidance and proposals for reform. Some of these reforms are already effective while others are still to be implemented. These reforms may cause benchmarks to perform differently than in the past, or to disappear entirely, or have other consequences which cannot be fully anticipated.

Any of the international, national or other proposals for reform or the general increased regulatory scrutiny of benchmarks could also increase the costs and risks of administering or otherwise participating in the setting of benchmarks and complying with any such regulations or requirements. Such factors may have the effect of discouraging market participants from continuing to administer or contribute to certain benchmarks, trigger changes in the rules or methodologies used in certain benchmarks or lead to the disappearance of certain benchmarks.

On 27 July, 2017, the Chief Executive of the U.K. Financial Conduct Authority (the "FCA"), which regulates the London interbank offered rate ("LIBOR"), announced that the FCA will no longer persuade or compel banks to submit rates for the calculation of the LIBOR benchmark after 2021. This announcement indicates that the continuation of LIBOR on the current basis cannot and will not be guaranteed after 2021, and it appears likely that LIBOR will be discontinued or modified by 2021.

Any of these developments, and any future initiatives to regulate, reform or change the manner of administration of benchmarks, could result in adverse consequences to the return on, value of and market for securities and other instruments whose returns are linked to any such benchmark, including those issued by JPMSP.

6. Operational Risks

6.1 JPMorgan Chase's businesses are highly dependent on the effectiveness of its operational systems and those of other market participants.

JPMorgan Chase's businesses rely comprehensively on the ability of JPMorgan Chase's financial, accounting, trading, data processing and other operational systems to process, record, monitor and report a large number of transactions on a continuous basis, and to do so accurately and quickly. In addition to proper design, installation, maintenance and training, the effective functioning of JPMorgan Chase's operational systems depends on, among other things:

- the quality of the information contained in those systems, as inaccurate, outdated or corrupted data can significantly compromise the functionality of a particular operational system and other systems to which it transmits information; and
- JPMorgan Chase's ability to appropriately maintain and upgrade its systems on a regular basis, and to ensure that any changes introduced to its systems are managed carefully to ensure operational continuity.

JPMorgan Chase also depends on its ability to access and use the operational systems of its vendors, custodians and other market participants, including clearing and payment systems, CCPs, securities exchanges and data processing, security and technology companies.

The ineffectiveness, failure or other disruption of the operational systems of JPMorgan Chase or another significant market participant, including due to a cyberbreach, could result in unfavourable ripple effects in the financial markets and for JPMorgan Chase and its clients and customers, including:

- delays or other disruptions in providing information, services and liquidity to clients and customers;
- the inability to settle transactions or obtain access to funds and other assets;
- the possibility that transactions such as funds transfers or capital markets trades are executed erroneously, illegally or with unintended consequences;
- financial losses, including possible restitution to clients and customers;
- higher operational costs associated with replacing services provided by a system that is unavailable;
- customer dissatisfaction and loss of confidence in JPMorgan Chase's products and services; and
- harm to reputation.

Furthermore, the interconnectivity of multiple financial institutions with central agents, CCPs, payment processors, securities exchanges, clearing houses and other financial market infrastructures, and the increased importance of these entities, increases the risk that an operational failure at one institution or entity may cause an industry-wide operational failure that could materially affect JPMorgan Chase's ability to conduct business.

As the speed, frequency, volume and complexity of transactions increases, it becomes more challenging to effectively maintain JPMorgan Chase's operational systems and infrastructure, especially due to the heightened risks that:

- errors, whether inadvertent or malicious, cause widespread system disruption;
- isolated or seemingly insignificant errors in operational systems compound, or migrate to other systems over time, to become larger issues;
- failures in synchronisation or encryption software, or degraded performance of microprocessors due to design flaws, causes disruptions in operational systems, or the inability of systems to communicate with each other; and
- third parties attempt to block the use of key technology solutions by claiming that the use infringes on their intellectual property rights.

If JPMorgan Chase's operational systems, or those of third parties on which JPMorgan Chase's businesses depend, are unable to meet the demanding standards of JPMorgan Chase's businesses and operations, or if they fail or have other significant shortcomings, JPMorgan Chase could be materially and adversely affected.

6.2 JPMorgan Chase relies on the skill and integrity of its employees and those of third parties in running its operational systems.

The effective functioning of JPMorgan Chase's operational systems also depends on the competence and reliability of its employees, as well as the employees of third parties on whom JPMorgan Chase depends for technological support, security or other services. JPMorgan Chase could be materially and adversely affected by a significant operational breakdown or failure caused by human error or misconduct by an employee of JPMorgan Chase or a third party.

6.3 JPMorgan Chase can be negatively affected if it fails to identify and address operational risks associated with new products or processes.

When JPMorgan Chase changes processes or introduces new products and services or new connectivity solutions, JPMorgan Chase may not fully appreciate or identify new operational risks that may arise from those changes, or may fail to implement adequate controls to mitigate the risks associated with new business activities. Any of these occurrences could diminish JPMorgan Chase's ability to operate one or more of its businesses or result in:

- potential liability to clients and customers;
- increased operating expenses;
- higher litigation costs, including regulatory fines, penalties and other sanctions;
- damage to JPMorgan Chase's reputation;
- impairment of JPMorgan Chase's liquidity;
- regulatory intervention; or
- weaker competitive standing.

Any of the foregoing consequences could materially and adversely affect JPMorgan Chase's businesses and results of operations.

6.4 JPMorgan Chase's connections to third-party operational systems expose it to greater operational risks.

Third parties with which JPMorgan Chase does business, as well as retailers, data aggregators and other third parties with which JPMorgan Chase's customers do business, can also be sources of operational risk to JPMorgan Chase. This is particularly the case where activities of customers or those third parties are beyond JPMorgan Chase's security and control systems, including through the use of the internet, personal smart phones and other mobile devices or services.

If a third party obtains access to customer account data on JPMorgan Chase's systems, and that third party experiences a cyberbreach of its own systems or misappropriates that data, this could result in a variety of negative outcomes for JPMorgan Chase and its customers, including:

- heightened risk that third parties will be able to execute fraudulent transactions using JPMorgan Chase's systems;
- losses from fraudulent transactions, as well as potential liability for losses that exceed thresholds established in consumer protection laws and regulations;
- increased operational costs to remediate the consequences of the third party's security breach; and
- harm to reputation arising from the perception that JPMorgan Chase's systems may not be secure.

As JPMorgan Chase's interconnectivity with customers and other third parties expands, JPMorgan Chase increasingly faces the risk of operational failure with respect to their systems. Security breaches affecting JPMorgan Chase's customers, or systems breakdowns or failures, security breaches or human error or misconduct affecting those other third parties, may require JPMorgan Chase to take steps to protect the integrity of its own operational systems or to safeguard confidential information. These actions can increase JPMorgan Chase's operational costs and potentially diminish customer satisfaction.

6.5 JPMorgan Chase faces substantial legal and operational risks in safeguarding personal information.

JPMorgan Chase's businesses are subject to complex and evolving laws and regulations, both within and outside the U.S., governing the privacy and protection of personal information of individuals. The protected parties can include:

- JPMorgan Chase's clients and customers;
- clients and customers of JPMorgan Chase's clients and customers;
- JPMorgan Chase's employees; and
- employees of JPMorgan Chase's suppliers, counterparties and other third parties.

Ensuring that JPMorgan Chase's collection, use, transfer and storage of personal information comply with all applicable laws and regulations in all relevant jurisdictions, including where the laws of different jurisdictions are in conflict, can:

- increase JPMorgan Chase's operating costs;
- affect the development of new products or services;

- demand significant oversight by JPMorgan Chase's management; and
- require JPMorgan Chase to structure its businesses, operations and systems in less efficient ways.

Furthermore, JPMorgan Chase cannot ensure that all of its clients and customers, suppliers, counterparties and other third parties have appropriate controls in place to protect the confidentiality of the information exchanged between them and JPMorgan Chase, particularly where information is transmitted by electronic means. JPMorgan Chase could be exposed to litigation or regulatory fines, penalties or other sanctions if personal, confidential or proprietary information of clients, customers, employees or others were to be mishandled or misused, such as situations where such information is:

- erroneously provided to parties who are not permitted to have the information; or
- intercepted or otherwise compromised by third parties.

Concerns regarding the effectiveness of JPMorgan Chase's measures to safeguard personal information, or even the perception that those measures are inadequate, could cause JPMorgan Chase to lose existing or potential clients and customers, and thereby reduce JPMorgan Chase's revenues. Furthermore, any failure or perceived failure by JPMorgan Chase to comply with applicable privacy or data protection laws and regulations may subject it to inquiries, examinations and investigations that could result in requirements to modify or cease certain operations or practices, significant liabilities or regulatory fines, penalties or other sanctions. Any of these could damage JPMorgan Chase's reputation and otherwise adversely affect its businesses.

6.6 **JPMorgan Chase's operations and results could be vulnerable to catastrophes or other events that disrupt its business.**

JPMorgan Chase's business and operational systems could be seriously disrupted by events that are wholly or partially beyond its control, including:

- cyberbreaches or breaches of physical premises;
- electrical or telecommunications outages;
- failures of, or loss of access to, operational systems, including computer systems, servers, networks and other technology assets;
- damage to or loss of property or assets;
- natural disasters or severe weather conditions;
- health emergencies or pandemics; or
- events arising from local or larger-scale political events, including outbreaks of hostilities or terrorist acts.

JPMorgan Chase maintains a global resiliency and crisis management programme that is intended to ensure the ability to recover critical business functions and supporting assets, including staff, technology and facilities, in the event of a business interruption. There can be no assurance that JPMorgan Chase's resiliency plans will fully mitigate all potential business continuity risks to JPMorgan Chase or its clients and customers. Any significant failure or disruption of JPMorgan Chase's operations or operational systems could, among other things:

- hinder its ability to provide services to its clients and customers;
- require it to expend significant resources to correct the failure or disruption;

- cause it to incur financial losses, both from loss of revenue and damage to or loss of property; and
- expose it to litigation or regulatory fines, penalties or other sanctions.

6.7 A successful cyberattack against JPMorgan Chase could cause significant harm to JPMorgan Chase or its clients and customers.

JPMorgan Chase experiences numerous cyberattacks on its computer systems, software, networks and other technology assets on a daily basis. These cyberattacks can take many forms, but a common objective of many of these attacks is to introduce computer viruses or malware into JPMorgan Chase's systems. These viruses or malicious code are typically designed to, among other things:

- obtain unauthorised access to confidential information belonging to JPMorgan Chase or its clients and customers;
- manipulate or destroy data;
- disrupt, sabotage or degrade service on JPMorgan Chase's systems; or
- steal money.

JPMorgan Chase has also been the target of significant distributed denial-of-service attacks which are intended to disrupt online banking services.

JPMorgan Chase devotes significant resources to maintain and regularly upgrade its systems to protect them against cyberattacks. However, JPMorgan Chase has experienced security breaches due to cyberattacks in the past, and it is inevitable that additional breaches will occur in the future. Any such breach could result in serious and harmful consequences for JPMorgan Chase or its clients and customers.

A principal reason that JPMorgan Chase cannot provide absolute security against cyberattacks is that it may not always be possible to anticipate, detect or recognise threats to JPMorgan Chase's systems, or to implement effective preventive measures against all breaches. This is because, among other things:

- the techniques used in cyberattacks change frequently and may not be recognised until launched;
- cyberattacks can originate from a wide variety of sources, including third parties who are or may be involved in organised crime or linked to terrorist organisations or hostile foreign governments; and
- third parties may seek to gain access to JPMorgan Chase's systems either directly or using equipment or security passwords belonging to employees, customers, third-party service providers or other users of JPMorgan Chase's systems.

The risk of a security breach due to a cyberattack could increase in the future as JPMorgan Chase continues to expand its mobile-payment and other internet-based product offerings and its internal use of web-based products and applications.

A successful penetration or circumvention of the security of JPMorgan Chase's systems or the systems of a supplier, governmental body or another market participant could cause serious negative consequences, including:

- significant disruption of JPMorgan Chase's operations and those of its clients, customers and counterparties, including losing access to operational systems;

- misappropriation of confidential information of JPMorgan Chase or that of its clients, customers, counterparties or employees;
- damage to computers or systems of JPMorgan Chase and those of its clients, customers and counterparties;
- inability to fully recover and restore data that has been stolen, manipulated or destroyed, or to prevent systems from processing fraudulent transactions;
- violations by JPMorgan Chase of applicable privacy and other laws;
- financial loss to JPMorgan Chase or to its clients and customers;
- loss of confidence in JPMorgan Chase's cybersecurity measures;
- client and customer dissatisfaction;
- significant exposure to litigation and regulatory fines, penalties or other sanctions; or
- harm to JPMorgan Chase's reputation.

JPMorgan Chase could also suffer some of the above consequences if a third party were to misappropriate confidential information obtained by intercepting signals or communications from mobile devices used by JPMorgan Chase's employees.

6.8 JPMorgan Chase may not be able to immediately address the consequences of a security breach due to a cyberattack.

A successful breach of JPMorgan Chase's computer systems, software, networks or other technology assets due to a cyberattack could occur and persist for an extended period of time before being detected due to, among other things:

- the breadth of JPMorgan Chase's operations and the high volume of transactions that it processes;
- the large number of customers, counterparties and third-party service providers with which JPMorgan Chase does business;
- the proliferation and increasing sophistication of cyberattacks; and
- the possibility that a third party, after establishing a foothold on an internal network without being detected, might obtain access to other networks and systems.

The extent of a particular cyberattack and the steps that JPMorgan Chase may need to take to investigate the attack may not be immediately clear, and it may take a significant amount of time before such an investigation can be completed and full and reliable information about the attack is known. While such an investigation is ongoing, JPMorgan Chase may not necessarily know the extent of the harm or how best to remediate it, and certain errors or actions could be repeated or compounded before they are discovered and remediated, any or all of which could further increase the costs and consequences of a cyberattack.

6.9 JPMorgan Chase's risk management framework and procedures may not be effective in identifying and mitigating every risk to JPMorgan Chase.

JPMorgan Chase's risk management framework is intended to mitigate risk and loss. JPMorgan Chase has established processes and procedures to identify, measure, monitor, report and analyse the types of risk to which JPMorgan Chase is subject. However, there are inherent limitations to risk management strategies because there may be existing or future risks that JPMorgan Chase has not appropriately anticipated or identified.

JPMorgan Chase could be exposed to unexpected losses, and JPMorgan Chase's financial condition or results of operations could be materially and adversely affected, by any inadequacy or lapse in its risk management framework, governance structure, procedures and practices, models or reporting systems. An inadequacy or lapse could:

- require significant resources to remediate;
- attract heightened regulatory scrutiny;
- expose JPMorgan Chase to regulatory investigations or legal proceedings;
- subject it to litigation or regulatory fines, penalties or other sanctions;
- harm its reputation; or
- diminish confidence in JPMorgan Chase.

JPMorgan Chase relies on data to assess its various risk exposures. Any deficiencies in the quality or effectiveness of JPMorgan Chase's data gathering and validation processes could result in ineffective risk management practices. These deficiencies could also result in inaccurate risk reporting.

JPMorgan Chase establishes allowances for probable credit losses that are inherent in its credit exposures. It then employs stress testing and other techniques to determine the capital and liquidity necessary in the event of adverse economic or market events. These processes are critical to JPMorgan Chase's results of operations and financial condition. They require difficult, subjective and complex judgments, including forecasts of how economic conditions might impair the ability of JPMorgan Chase's borrowers and counterparties to repay their loans or other obligations. It is possible that JPMorgan Chase will fail to identify the proper factors or that it will fail to accurately estimate the impact of factors that it identifies.

Many of JPMorgan Chase's risk management strategies and techniques consider historical market behaviour. These strategies and techniques are based to some degree on management's subjective judgment. For example, many models used by JPMorgan Chase are based on assumptions regarding correlations among prices of various asset classes or other market indicators. In times of market stress, including difficult or less liquid market environments, or in the event of other unforeseen circumstances, previously uncorrelated indicators may become correlated. Conversely, previously-correlated indicators may make unrelated movements at those times. Sudden market movements and unanticipated or unidentified market or economic movements have, in some circumstances, limited the effectiveness of JPMorgan Chase's risk management strategies, causing it to incur losses.

6.10 JPMorgan Chase could incur significant losses and face greater regulatory scrutiny if its models or estimations are inadequate.

JPMorgan Chase has developed and uses a variety of models and other analytical and judgment-based estimations to assess and implement mitigating controls over its market, credit, operational and other risks. These models and estimations are based on a variety of assumptions and historical trends, and are periodically reviewed and modified as necessary. The models and estimations that JPMorgan Chase uses may not be effective in all cases to observe and mitigate risk due to a variety of factors, such as:

- reliance on historical trends that may not accurately predict future events, including assumptions underlying the models and estimations which predict correlation among certain market indicators or asset prices;
- inherent limitations associated with forecasting uncertain economic and financial outcomes;

- historical trend information may be incomplete, or may not anticipate severely negative market conditions such as extreme volatility, dislocation or lack of liquidity;
- technology that is introduced to run models or estimations may not perform as expected, or may not be well understood by the personnel using the technology;
- models and estimations may contain erroneous data, valuations, formulas or algorithms; and
- review processes may fail to detect flaws in models and estimations.

JPMorgan Chase could incur substantial losses, its capital levels could be reduced and it could face greater regulatory scrutiny if its models or estimations prove to be inadequate.

Some of the models and other analytical and judgment-based estimations used by JPMorgan Chase in managing risks are subject to review by, and require the approval of, JPMorgan Chase's regulators. These reviews are required before JPMorgan Chase may use those models and estimations in connection with calculating market risk RWA, credit risk RWA and operational risk RWA under Basel III. If JPMorgan Chase's models or estimations are not approved by its regulators, it may be subject to higher capital charges, which could adversely affect its financial results or limit the ability to expand its businesses. JPMorgan Chase's capital actions could also be constrained if a submission under the Federal Reserve's annual Comprehensive Capital Analysis and Review ("CCAR") Framework is not approved by its banking regulators due to the perceived inadequacy of its models or estimations.

6.11 Enhanced standards for vendor risk management can result in higher costs and other potential exposures.

JPMorgan Chase must comply with enhanced standards for the assessment and management of risks associated with doing business with vendors and other third-party service providers. These requirements are contained both in bank regulatory regulations and guidance and in certain consent orders to which JPMorgan Chase has been subject. JPMorgan Chase incurs significant costs and expenses in connection with its initiatives to address the risks associated with oversight of its third party relationships. JPMorgan Chase's failure to appropriately assess and manage third-party relationships, especially those involving significant banking functions, shared services or other critical activities, could materially adversely affect JPMorgan Chase. Specifically, any such failure could subject JPMorgan Chase to:

- potential liability to clients and customers;
- regulatory fines, penalties or other sanctions;
- increased operational costs; or
- harm to its reputation.

6.12 Requirements for physical settlement and delivery in trading agreements could expose JPMorgan Chase to operational and other risks.

Certain of JPMorgan Chase's markets transactions require the physical settlement by delivery of securities or other obligations that JPMorgan Chase does not own. If JPMorgan Chase is unable to obtain the obligations within the required timeframe, JPMorgan Chase could forfeit payments otherwise due. Failures could also result in settlement delays, which could damage JPMorgan Chase's reputation and ability to transact business. Failure to timely settle and confirm transactions could also subject JPMorgan Chase to heightened credit and operational risk, and in the event of a default, market and operational losses.

6.13 JPMorgan Chase could incur unexpected losses if estimates and judgments underlying its financial statements are incorrect.

Under U.S. generally accepted accounting principles ("U.S. GAAP"), JPMorgan Chase is required to use estimates and apply judgments in preparing its financial statements, including in determining allowances for credit losses and reserves related to litigation, among other items. Certain financial instruments require a determination of their fair value in order to prepare JPMorgan Chase's financial statements, including:

- trading assets and liabilities;
- instruments in the investment securities portfolio;
- certain loans;
- MSRs;
- structured notes; and
- certain repurchase and resale agreements.

Where quoted market prices are not available for these types of instruments, JPMorgan Chase may make fair value determinations based on internally developed models or other means which ultimately rely to some degree on management estimates and judgment. Sudden illiquidity in markets or declines in prices of certain loans and securities may make it more difficult to value certain balance sheet items, which could lead to valuations being subsequently changed or adjusted. If estimates or judgments underlying JPMorgan Chase's financial statements prove to have been incorrect, JPMorgan Chase may experience material losses.

6.14 Lapses in controls over disclosure or financial reporting could materially affect JPMorgan Chase's profitability or reputation.

There can be no assurance that JPMorgan Chase's disclosure controls and procedures will be effective in every circumstance, or that a material weakness or significant deficiency in internal control over financial reporting will not occur. Any such lapses or deficiencies could:

- materially and adversely affect JPMorgan Chase's business and results of operations or financial condition;
- restrict its ability to access the capital markets;
- require it to expend significant resources to correct the lapses or deficiencies;
- expose it to litigation or regulatory fines, penalties or other sanctions;
- harm its reputation; or
- otherwise diminish investor confidence in JPMorgan Chase.

7. Strategic Risk

7.1 If JPMorgan Chase's management fails to develop and execute effective business strategies, JPMorgan Chase's competitive standing and results could suffer.

JPMorgan Chase's business strategies significantly affect its competitive standing and results of operations. These strategies relate to:

- the products and services that JPMorgan Chase offers;

- the geographies in which it operates;
- the types of clients and customers that it serves;
- the counterparties with which it does business; and
- the methods and distribution channels by which it offers products and services.

The franchise values and growth prospects of JPMorgan Chase's businesses, and its earnings and results of operations, may suffer and revenues could decline if management makes choices about these strategies and goals that:

- prove to be incorrect;
- do not accurately assess the competitive landscape and industry trends; or
- fail to address changing regulatory and market environments in the U.S. and abroad.

JPMorgan Chase's growth and prospects also depend on management's ability to develop and execute effective business plans to address these strategic priorities, both in the near term and over longer time horizons. Management's effectiveness in this regard will affect JPMorgan Chase's ability to develop and enhance its resources, control expenses and return capital to shareholders. Each of these objectives could be adversely affected by management's failure to:

- devise effective business plans and strategies;
- effectively implement business decisions, including by minimising bureaucratic processes;
- institute controls that appropriately address the risks associated with business activities and any changes in those activities;
- offer products and services that meet the expectations of clients and customers, and in ways that enhance their satisfaction with those products and services;
- allocate capital to JPMorgan Chase's businesses in a manner that promotes their long-term profitability;
- adequately respond to regulatory requirements;
- appropriately address shareholder concerns;
- react quickly to changes in market conditions or market structures; or
- develop and enhance the operational, technology, risk, financial and managerial resources necessary to grow and manage JPMorgan Chase's businesses.

Additionally, JPMorgan Chase's Board of Directors plays an important role in exercising appropriate oversight of management's strategic decisions, and a failure by the Board to perform this function could also impair JPMorgan Chase's results of operations.

8. Conduct Risks

8.1 Misconduct by JPMorgan Chase employees can harm its clients and customers, damage its reputation and trigger litigation and regulatory action.

JPMorgan Chase's employees interact with clients, customers and counterparties, and with each other, every day. All employees are expected to demonstrate values and exhibit the culture and behaviours that are an integral part of JPMorgan Chase's How We Do Business Principles, including JPMorgan Chase's commitment to "do first class business in a first class

way." JPMorgan Chase endeavours to embed culture and conduct risk management throughout an employee's life cycle, including recruiting, onboarding, training and development, and performance management. Culture and conduct risk management are also important to JPMorgan Chase's promotion and compensation processes.

Notwithstanding these expectations, policies and practices, certain employees have in the past engaged in improper or illegal conduct resulting in litigation as well as settlements involving consent orders, deferred prosecution agreements and non-prosecution agreements, as well as other civil and criminal settlements with regulators and other governmental entities. There is no assurance that further inappropriate actions by employees will not occur or that any such actions will always be deterred or quickly prevented.

JPMorgan Chase's reputation could be harmed, and collateral consequences could result, from a failure by one or more employees to act consistently with JPMorgan Chase's expectations, including by acting in ways that harm clients, customers, other market participants or other employees. Some examples of this include:

- improperly selling and marketing JPMorgan Chase's products or services;
- engaging in insider trading, market manipulation or unauthorised trading;
- facilitating illegal or aggressive tax-motivated transactions, or transactions designed to circumvent economic sanction programmes;
- failing to fulfill fiduciary obligations or other duties owed to clients or customers;
- violating anti-trust or anti-competition laws by colluding with other market participants to manipulate markets, prices or indices;
- making risk decisions in ways that subordinate JPMorgan Chase's risk appetite to employee compensation objectives; and
- misappropriating property or confidential or proprietary information or technology belonging to JPMorgan Chase, its clients and customers or third parties.

The consequences of any failure by employees to act consistently with JPMorgan Chase's expectations could include litigation, or regulatory or other governmental investigations or enforcement actions. Any of these proceedings or actions could result in judgments, settlements, fines, penalties or other sanctions, or lead to:

- financial losses;
- increased operational and compliance costs;
- greater regulatory scrutiny;
- requirements that JPMorgan Chase restructure, curtail or cease certain of its activities;
- the need for significant oversight by JPMorgan Chase's management;
- the undermining of JPMorgan Chase's culture;
- loss of clients or customers; and
- harm to JPMorgan Chase's reputation.

9. Reputation Risks

9.1 Damage to JPMorgan Chase's reputation could harm its businesses.

Maintaining trust in JPMorgan Chase is critical to its ability to attract and retain clients, customers, investors and employees. Damage to JPMorgan Chase's reputation can therefore cause significant harm to JPMorgan Chase's business and prospects. Harm to JPMorgan Chase's reputation can arise from numerous sources, including:

- employee misconduct;
- security breaches;
- compliance failures;
- litigation or regulatory fines, penalties or other sanctions; or
- regulatory investigations, enforcement actions or settlements.

JPMorgan Chase's reputation could also be harmed by the failure or perceived failure of certain third parties to comply with laws or regulations, including companies in which JPMorgan Chase has made principal investments, parties to joint ventures with JPMorgan Chase, and vendors and other third parties with which JPMorgan Chase does business.

JPMorgan Chase's reputation or prospects may be significantly damaged by adverse publicity or negative information regarding JPMorgan Chase, whether or not true, that may be posted on social media, non-mainstream news services or other parts of the internet, and this risk can be magnified by the speed and pervasiveness with which information is disseminated through those channels.

Actions by the financial services industry generally or by certain members of or individuals in the industry can also affect JPMorgan Chase's reputation. For example, concerns that consumers have been treated unfairly by a financial institution, or that a financial institution has acted inappropriately with respect to the methods used to offer products to customers, can damage the reputation of the industry as a whole. If JPMorgan Chase is perceived to have engaged in these types of behaviours, the measures needed to address the associated reputational issues could increase JPMorgan Chase's operational and compliance costs and negatively affect its earnings. Furthermore, events that undermine JPMorgan Chase's reputation can hinder its ability to attract and retain clients, customers, investors and employees.

9.2 Failure to effectively manage potential conflicts of interest can result in litigation and enforcement actions, as well as damage JPMorgan Chase's reputation.

JPMorgan Chase's ability to manage potential conflicts of interest has become increasingly complex as its business activities encompass more transactions, obligations and interests with and among JPMorgan Chase's clients and customers. JPMorgan Chase can become subject to litigation and enforcement actions, and its reputation can be damaged, by the failure or perceived failure to, among other things:

- adequately address or appropriately disclose conflicts of interest;
- deliver appropriate standards of service and quality;
- treat clients and customers fairly;
- use client and customer data responsibly and in a manner that meets legal requirements and regulatory expectations;

- provide fiduciary products or services in accordance with the applicable legal and regulatory standards; or
- handle or use confidential information of customers or clients appropriately or in compliance with applicable data protection and privacy laws and regulations.

In the future, a failure or perceived failure to appropriately address conflicts or fiduciary obligations could result in customer dissatisfaction, litigation and regulatory fines, penalties or other sanctions, and heightened regulatory scrutiny and enforcement actions, all of which can lead to lost revenue and higher operating costs and cause serious harm to JPMorgan Chase's reputation.

10. **Country Risks**

10.1 **JPMorgan Chase can incur losses due to unfavourable economic developments around the world.**

JPMorgan Chase's businesses and earnings are affected by the monetary, fiscal and other policies adopted by various U.S. and non-U.S. regulatory authorities and agencies. For example, the Federal Reserve regulates the supply of money and credit in the U.S. and its policies determine in large part the cost of funds for lending and investing in the U.S. and the return earned on those loans and investments. Changes in fiscal policies by central banks or regulatory authorities, and the manner in which those policies are executed, are beyond JPMorgan Chase's control and may be difficult to predict. Consequently, unanticipated changes in these policies or the ways in which they are implemented could have a negative impact on JPMorgan Chase's businesses and results of operations.

JPMorgan Chase's businesses and revenues are also subject to the risks inherent in investing and market-making in securities, loans and other obligations of companies worldwide. These risks include, among others:

- negative effects from slowing growth rates or recessionary economic conditions;
- the risk of loss from unfavourable political, legal or other developments, including social or political instability, in the countries or regions in which those companies operate; and
- the other risks and considerations discussed below.

10.2 **Adverse economic and political developments in a country or region can have a wider negative impact on JPMorgan Chase's businesses.**

Some countries or regions in which JPMorgan Chase operates or invests, or in which JPMorgan Chase may do business in the future, have in the past experienced severe economic disruptions particular to those countries or regions. In some cases, concerns regarding the fiscal condition of one or more countries can cause a contraction of available credit and reduced commercial activity among trading partners within the affected countries or region. These developments can also create market volatility which can lead to a contagion affecting other countries in the same region or beyond. Furthermore, governments in particular countries or regions in which JPMorgan Chase or its clients do business may choose to adopt protectionist economic or trade policies in response to concerns about domestic economic conditions. Any or all of these developments could lead to diminished cross-border trade and financing activity within that country or region, all of which could negatively affect JPMorgan Chase's business and earnings in those jurisdictions. If JPMorgan Chase takes steps to reduce its market and credit risk exposure within a particular country or region that is experiencing economic or political disruption, it may incur losses that are higher than expected because it will be disposing of assets when market conditions are likely to be highly unfavourable.

10.3 JPMorgan Chase's business activities with governmental entities pose a greater risk of loss.

Several of JPMorgan Chase's businesses engage in transactions with, or trade in obligations of, governmental entities, including national, state, provincial, municipal and local authorities, both within and outside the U.S. These activities can expose JPMorgan Chase to enhanced sovereign, credit-related, operational and reputation risks, including the risks that a governmental entity may:

- default on or restructure its obligations;
- claim that actions taken by government officials were beyond the legal authority of those officials; or
- repudiate transactions authorised by a previous incumbent government.

Any or all of these actions could adversely affect JPMorgan Chase's financial condition and results of operations and could hurt its reputation, particularly if JPMorgan Chase pursues claims against a government obligor in a jurisdiction in which it has significant business relationships with clients or customers.

10.4 JPMorgan Chase's business and revenues in emerging markets can be hampered by local political, social and economic factors.

Some of the countries in which JPMorgan Chase conducts business have economies or markets that are less developed and more volatile, and may have legal and regulatory regimes that are less established or predictable, than the U.S. and other developed markets in which JPMorgan Chase operates. Some of these countries have in the past experienced severe economic disruptions, including:

- extreme currency fluctuations;
- high inflation;
- low or negative growth; or
- defaults or potential defaults on sovereign debt.

The governments in these countries have sometimes reacted to these developments by imposing restrictive monetary policies such as currency exchange controls and other laws and restrictions that adversely affect the local and regional business environment. In addition, these countries, as well as certain more developed countries, have been susceptible to unfavourable social developments arising from poor economic conditions and related governmental actions, including:

- social unrest;
- general strikes and demonstrations;
- crime and corruption;
- security and personal safety issues;
- outbreaks of hostilities;
- overthrow of incumbent governments;
- terrorist attacks; or
- other forms of internal discord.

These economic, political and social developments have in the past resulted in, and in the future could lead to, conditions that can adversely affect JPMorgan Chase's operations in those countries and impair the revenues, growth and profitability of those operations.

If the legal and regulatory system in a particular country is less established or predictable, this can create a more difficult environment in which to conduct business. For example, any of the following could hamper JPMorgan Chase's operations and reduce its earnings in countries with less established or predictable legal and regulatory regimes:

- the absence of a statutory or regulatory basis or guidance for engaging in specific types of business or transactions;
- the adoption of conflicting or ambiguous laws and regulations, or the inconsistent application or interpretation of existing laws and regulations;
- uncertainty concerning the enforceability of contractual obligations;
- difficulty in competing in economies in which the government controls or protects all or a portion of the local economy or specific businesses, or where graft or corruption may be pervasive; and
- the threat of arbitrary regulatory investigations, civil litigation or criminal prosecutions, the termination of licenses required to operate in the local market or the suspension of business relationships with governmental bodies.

JPMorgan Chase's operations in or involving emerging markets countries can also be affected by governmental actions such as:

- monetary policies;
- expropriation, nationalisation or confiscation of assets;
- price, capital or exchange controls; and
- changes in laws and regulations.

The impact of these actions could be accentuated in trading markets that are smaller, less liquid and more volatile than more-developed markets. These types of government actions can negatively affect JPMorgan Chase's operations in the relevant country, either directly or by suppressing the business activities of local clients or multi-national clients that conduct business in the jurisdiction. For example, some or all of these governmental actions can result in funds belonging to JPMorgan Chase, or that it places with a local custodian on behalf of a client, being effectively trapped in a country. In addition to the ultimate risk of losing the funds entirely, JPMorgan Chase could be exposed for an extended period of time to the credit risk of a local custodian that is now operating in a deteriorating domestic economy.

JPMorgan Chase's revenues from international operations and trading in non-U.S. securities and other obligations can be negatively affected by the foregoing economic, political and social conditions in a particular country in which it does business. In addition, any of the above-mentioned events or circumstances in one country can affect JPMorgan Chase's operations and investments in another country or countries, including in the U.S.

10.5 JPMorgan Chase's operations in the emerging markets can subject it to higher operational and compliance costs.

Conducting business in countries with less-developed legal and regulatory regimes often requires JPMorgan Chase to devote significant additional resources to understanding, and monitoring changes in, local laws and regulations, as well as structuring its operations to comply with local laws and regulations and implementing and administering related internal policies and procedures. There can be no assurance that JPMorgan Chase will always be

successful in its efforts to conduct its business in compliance with laws and regulations in countries with less predictable legal and regulatory systems or that JPMorgan Chase will be able to develop effective working relationships with local regulators.

10.6 Complying with economic sanctions and anti-corruption and anti-money laundering laws and regulations can increase JPMorgan Chase's operational and compliance costs and risks.

JPMorgan Chase must comply with economic sanctions and embargo programmes administered by the U.S. Treasury's Office of Foreign Assets Control ("OFAC") and similar national and multi-national bodies and governmental agencies outside the U.S., as well as anti-corruption and anti-money laundering laws and regulations throughout the world. JPMorgan Chase can incur higher costs and face greater compliance risks in structuring and operating its businesses to comply with these requirements. Furthermore, a violation of a sanction or embargo programme or anti-corruption or anti-money laundering laws and regulations could subject JPMorgan Chase, and individual employees, to regulatory enforcement actions as well as significant civil and criminal penalties

11. Competition Risks

11.1 The financial services industry is highly competitive, and JPMorgan Chase's results of operations will suffer if it is not a strong and effective competitor.

JPMorgan Chase operates in a highly competitive environment, and expects that competition in the U.S. and global financial services industry will continue to be intense. Competitors include:

- other banks and financial institutions;
- trading, advisory and investment management firms;
- finance companies and technology companies; and
- other firms that are engaged in providing similar products and services.

JPMorgan Chase cannot provide assurance that the significant competition in the financial services industry will not materially and adversely affect its future results of operations.

New competitors have emerged. For example, technological advances and the growth of e-commerce have made it possible for non-depository institutions to offer products and services that traditionally were banking products. These advances have also allowed financial institutions and other companies to provide electronic and internet-based financial solutions, including electronic securities trading, payment processing and online automated algorithmic-based investment advice. Furthermore, both financial institutions and their non-banking competitors face the risk that payment processing and other services could be disrupted by technologies, such as cryptocurrencies, that require no intermediation. New technologies have required and could require JPMorgan Chase to spend more to modify or adapt its products to attract and retain clients and customers or to match products and services offered by its competitors, including technology companies.

Ongoing or increased competition may put downward pressure on prices and fees for JPMorgan Chase's products and services or may cause JPMorgan Chase to lose market share. This competition may be on the basis of, among other factors, quality and variety of products and services offered, transaction execution, innovation, reputation and price. The failure of any of JPMorgan Chase's businesses to meet the expectations of clients and customers, whether due to general market conditions or underperformance, could affect JPMorgan Chase's ability to attract or retain clients and customers. Any such impact could, in turn, reduce JPMorgan Chase's revenues. Increased competition also may require JPMorgan Chase to make additional capital investments in its businesses, or to extend more of its capital on behalf of its clients in order to remain competitive.

Non-U.S. competitors of JPMorgan Chase's wholesale businesses outside the U.S. are typically subject to different, and in some cases, less stringent, legislative and regulatory regimes. The more restrictive laws and regulations applicable to JPMorgan Chase and other U.S. financial services institutions can put JPMorgan Chase and those firms at a competitive disadvantage to non-U.S. competitors. This could reduce the revenue and profitability of JPMorgan Chase's wholesale businesses, resulting from:

- prohibitions on engaging in certain transactions;
- higher capital and liquidity requirements;
- making JPMorgan Chase's pricing of certain transactions more expensive for clients; and
- adversely affecting JPMorgan Chase's cost structure for providing certain products.

12. **People Risk**

12.1 **JPMorgan Chase's ability to attract and retain qualified employees is critical to its success.**

JPMorgan Chase's employees are its most important resource, and in many areas of the financial services industry, competition for qualified personnel is intense. JPMorgan Chase endeavors to attract talented and diverse new employees and retain and motivate its existing employees. If JPMorgan Chase were unable to continue to attract or retain qualified employees, including successors to the Chief Executive Officer or members of the Operating Committee, JPMorgan Chase's performance, including its competitive position, could be materially and adversely affected.

12.2 **Changes in immigration policies could adversely affect JPMorgan Chase.**

There is the potential for changes in immigration policies in multiple jurisdictions around the world, including in the U.S. If immigration policies were to unduly restrict or otherwise make it more difficult for qualified employees to work in, or transfer among, jurisdictions in which JPMorgan Chase has operations or conducts its business, JPMorgan Chase could be adversely affected.

13. **Legal Risks**

13.1 **JPMorgan Chase faces significant legal risks from private actions and formal and informal regulatory investigations.**

JPMorgan Chase is named as a defendant or is otherwise involved in various legal proceedings, including class actions and other litigation or disputes with third parties. Actions currently pending against JPMorgan Chase may result in judgments, settlements, fines, penalties or other results adverse to JPMorgan Chase. Any of these matters could materially and adversely affect JPMorgan Chase's business, financial condition or results of operations, or cause serious reputational harm. As a participant in the financial services industry, it is likely that JPMorgan Chase will continue to experience a high level of litigation related to its businesses and operations.

Regulators and other government agencies conduct examinations of JPMorgan Chase and its subsidiaries both on a routine basis and in targeted exams, and JPMorgan Chase's businesses and operations are subject to heightened regulatory oversight. This heightened regulatory scrutiny, or the results of such an investigation or examination, may lead to additional regulatory investigations or enforcement actions. There is no assurance that those actions will not result in regulatory settlements or other enforcement actions against JPMorgan Chase. Furthermore, a single event involving a potential violation of law or regulation may give rise to numerous and overlapping investigations and proceedings, either by multiple federal and

state agencies and officials in the U.S. or, in some instances, regulators and other governmental officials in non-U.S. jurisdictions.

If another financial institution violates a law or regulation relating to a particular business activity or practice, this will often give rise to an investigation by regulators and other governmental agencies of the same or similar activity or practice by JPMorgan Chase.

These and other initiatives by U.S. and non-U.S. governmental authorities may subject JPMorgan Chase to judgments, settlements, fines or penalties, or require JPMorgan Chase to restructure its operations and activities or to cease offering certain products or services. All of these potential outcomes could harm JPMorgan Chase's reputation or lead to higher operational costs, thereby reducing JPMorgan Chase's profitability, or result in collateral consequences

14. **Issuer Risk**

14.1 **Risks relating to JPMSP as individual entity.**

Information about risk factors relating to JPMSP can be found in JPMSP's Annual Report for the year ended 31 December 2017 (pages 23 to 26 of the pdf). The information is incorporated by reference into this Registration Document (see also section "IV. Information incorporated by reference").

In particular the following key risks which are inherent to JPMSP's business activities should be taken into account (which are elaborated in more detail on JPMSP's Annual Report for the year ended 31 December 2017 (pages 23 to 26 of the pdf)) that could affect JPMSP's business and, as a consequence, may affect JPMSP's ability to fulfil its obligations under the Securities:

- Credit risk: The risk associated with the default or change in credit profile of a customer. For further information see also under section 4. above where such risk is described in more detail in relation to JPMorgan Chase.
- Liquidity risk: The risk that JPMSP will be unable to meet its contractual and contingent financial obligations as they arise or that it does not have the appropriate amount, composition and tenor of funding and liquidity to support its assets and liabilities. For further information see also under section 5. above where such risk is described in more detail in relation to JPMorgan Chase.
- Market risk: The risk associated with the effect of changes in market factors, such as interest rates or foreign exchange rates, equity and commodity prices, implied volatilities or credit spreads, on the value of assets and liabilities held for both the short and long term. For further information see also under section 3. above where such risk is described in more detail in relation to JPMorgan Chase.
- Compliance risk: The risk of failure to comply with applicable laws, rules and regulations.
- Operational risk: The risk associated with inadequate or failed internal processes, people or systems, or from external events. For further information see also under section 6. above where such risk is described in more detail in relation to JPMorgan Chase.
- Reputation risk: The potential that an action, inaction, transaction, investment or event will reduce trust in JPMSP and the JPMorgan Chase's integrity or competence by our various constituents, including clients, counterparties, regulators, employees and the broader public. For further information see also under section 9. above where such risk is described in more detail in relation to JPMorgan Chase.

14.2 JPMS is affected by risks affecting its parent company and other J.P. Morgan affiliates.

JPMS is an indirect wholly owned subsidiary of JPMorgan Chase & Co. It is anticipated that JPMS will, for each issuance, enter into hedging arrangements with other J.P. Morgan affiliates which could include JPMS plc and/or JPMorgan Chase Bank, N.A., and that such arrangements will be sufficient to hedge its respective market risk for each such issuance. Accordingly, the ability of JPMS to perform its respective obligations under the Securities may be affected by any inability or failure to perform, pursuant to its respective hedging arrangements, by such other J.P. Morgan affiliate. The hedging activities with J.P. Morgan affiliates will be collateralized and potential funding requirements resulting from settlement-related timing differences between issuances and the hedges are funded by those other J.P. Morgan affiliates involved in the transactions. There is a risk that a failure to perform by one J.P. Morgan affiliate under a hedging arrangement could affect more than one type and/or issuance of Securities. Should this circumstance materialise, the payment obligations of JPMS under the terms of the Securities would be guaranteed by JPMS plc.

14.3 Voidable preference and related risks in the Netherlands.

The validity or enforceability of any documents or any legal act (*rechtshandeling*) forming part thereof or contemplated thereby in relation to any securities issued by JPMS are subject to and limited by the protection afforded by Netherlands law to creditors whose interests have been adversely affected pursuant to the rules of Netherlands law relating to (x) unlawful acts (*onrechtmatige daden*) based on Section 6:162 et seq. of the Netherlands Civil Code (*Burgerlijk Wetboek*) and (y) fraudulent conveyance or preference (*actio pauliana*) within the meaning of Section 3:45 of the Netherlands Civil Code (*Burgerlijk Wetboek*). Furthermore, in the event of any insolvency proceedings being opened in the Netherlands in relation to JPMS, Dutch laws in relation to bankruptcy proceedings, in particular Section 42 et seq. of the Netherlands Bankruptcy Act (*Faillissementswet*) in relation to fraudulent conveyance or preference (*actio pauliana*) would apply.

15. Guarantor Risk

15.1 Risks relating to JPMS plc as individual entity.

Information about risk factors relating to JPMS plc can be found in the section "Strategic Report" of JPMS plc's Annual Report for the year ended 31 December 2017 which is contained on pages F-3 to F-26 of this Registration Document.

In particular the following key risks which are inherent to JPMS plc's business activities should be taken into account (which are elaborated in more detail on JPMS plc's Annual Report for the year ended 31 December 2017 as set out on page F-3 to F-26 of this Registration Document) that could affect the JPMS plc's business and, as a consequence, may affect JPMS plc's ability to fulfil its obligations under the Guarantee:

- The risks described in the bullets in section 14.1 in relation to JPMS which are also inherent to JPMS plc's business activities.
- Capital risk: The risk that JPMS plc has an insufficient level and composition of capital to support JPMS plc's business activities, and associated risks during normal economic environments and stressed conditions. For further information see also under section 14.2 below.
- Country risk: The framework for monitoring and assessing how financial, economic, political or other significant developments adversely affect the value of JPMS plc's exposures related to a particular country or set of countries. For further information see also under section 10. above where such risk is described in more detail in relation to JPMorgan Chase.

- 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 JPMs plc's assets or liabilities or future results.
- Structural interest rate risk: The risk resulting from JPMs plc's traditional banking activities (accrual accounted on- and off balance sheet rate risk positions) which includes extension of loans and credit facilities, taking deposits and issuing debt (collectively referred to as "non-trading activities").
- Conduct risk: The risk that any action or inaction by an employee of JPMs plc could lead to unfair client/customer outcome, compromise JPMs plc's reputation, impact the integrity of the markets in which JPMs plc operates, or reflect poorly on the JPMorgan Chase's culture. For further information see also under section 8. above where such risk is described in more detail in relation to JPMorgan Chase.
- Legal risk: The risk of loss primarily caused by the actual or alleged failure to meet legal obligations that arise from the rule of law in jurisdictions in which JPMorgan Chase and JPMs plc operate, agreements with clients and customers and products and services offered by JPMs plc and the JPMorgan Chase. For further information see also under section 13. above where such risk is described in more detail in relation to JPMorgan Chase.
- Model risk: The risk of the potential for adverse consequences from decisions based on incorrect or misused model outputs.

15.2 **JPMS plc is subject to particular risks in relation to European and UK regulation of the financial service industry.**

As a credit institution, regulated by the Financial Conduct Authority ("FCA") and the Prudential Regulation Authority ("PRA") in the United Kingdom and as a subsidiary of a systemically important financial institution, JPMS plc is subject to extensive regulation principally in the United Kingdom and the EU. JPMS plc faces the risk of significant intervention by regulatory and tax authorities in all jurisdictions in which it conducts its businesses. In many cases, JPMS plc's activities may be subject to overlapping and divergent regulation in different jurisdictions.

Among other things, as a result of regulators or private parties challenging JPMS plc's compliance with laws and regulations, it could be fined, prohibited from engaging in certain business activities, subject to limitations or conditions on its business activities or subjected to new or substantially higher taxes or other governmental charges in connection with the conduct of its businesses or with respect to its employees. Such limitations or conditions may negatively impact JPMS plc's profitability.

Separate and apart from the impact on the scope and profitability of JPMS plc's business activities, day-to-day compliance with laws and regulations, in particular those laws and regulations adopted since 2008, has involved and will continue to involve significant amounts of time, including that of JPMS plc's senior leaders and that of an increasing number of dedicated compliance and other reporting and operational personnel, all of which may negatively impact JPMS plc's profitability.

If there are new laws or regulations or changes in the enforcement of existing laws or regulations applicable to JPMS plc's businesses or those of JPMS plc's clients, including capital, liquidity, leverage, loss absorbing capacity, position limits, registration and margin requirements, restrictions on other business practices, reporting requirements, requirements relating to the implementation of the EU Bank Recovery and Resolution Directive ("BRRD"), tax burdens and compensation restrictions, that are imposed on a limited subset of financial institutions (either based on size, activities, geography or other criteria) which may include JPMS plc, compliance with these new laws and regulations and amendments to such laws and regulations, or changes in the enforcement of existing laws or regulations, could adversely

affect JPMS plc's ability to compete effectively with other institutions that are not affected in the same way. In addition, regulation imposed on financial institutions or market participants generally, such as taxes on financial transactions, could adversely impact levels of market activity more broadly, and thus impact JPMS plc's businesses.

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. These proposed or adopted numerous market reforms that have impacted and may continue to impact JPMS plc's businesses. These include stricter capital and liquidity requirements, including legislation (in the form of EU Directive 2013/36/EU, as amended or replaced from time to time, the "**CRD IV**" and a regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 646/2012 (as amended, supplemented or replaced from time to time, the "**CRR**", together with the CRD IV, the "**CRD IV/CRR-package**") to implement the Basel Committee's December 2010 final capital framework for strengthening international capital standards (the "**Basel III**" capital requirements) for JPMS plc. In addition, bank and investment firm recovery and resolution; bank structure; securities settlement; transparency and disclosure of securities financing transactions; benchmarks; restrictions on short selling and credit default swaps; additional obligations and restrictions on the management and marketing of funds in the EU; revisions to the laws on corporate governance; anti money-laundering controls; data security and privacy as well as significant reviews to law on corporate governance in financial firms, sanctions and market conduct rules. Furthermore, the Markets in Financial Instruments Regulation ("**MiFIR**") and a revision of the Markets in Financial Instruments Directive ("**MiFID II**", and collectively, "**MiFID II/R**") became effective in January 2018.

These developments could impact JPMS plc's profitability and competitive position in the affected jurisdictions, particularly if these requirements do not apply, or do not apply equally, to JPMS plc's competitors or are not implemented uniformly across jurisdictions. They could even make it uneconomic to continue to conduct all or certain businesses in such jurisdictions, or could result in JPMS plc incurring significant costs associated with changing business practices, restructuring businesses, moving certain businesses and employees to other locations or complying with applicable capital requirements, including liquidating assets or raising capital in a manner that adversely increases JPMS plc's funding costs or otherwise adversely affects its shareholder and creditors.

Increasingly, regulators and courts have sought to hold financial institutions liable for the misconduct of their clients where such regulators and courts have determined that the financial institution should have detected that the client was engaged in wrongdoing, even though the financial institution had no direct knowledge of the activities engaged in by its client. Regulators and courts have also increasingly found liability as a "control person" for activities of entities in which financial institutions or funds controlled by financial institutions have an investment, but which they do not actively manage. In addition, regulators and courts continue to seek to establish "fiduciary" obligations to counterparties to which no such duty had been assumed to exist. To the extent that such efforts are successful, the cost of, and liabilities associated with, engaging in brokerage, clearing, market-making, prime brokerage, investing and other similar activities could increase significantly. To the extent that JPMS plc has fiduciary obligations in connection with acting as a financial adviser, investment adviser or in other roles for individual, institutional, sovereign or investment fund clients, any breach, or even an alleged breach, of such obligations could have materially negative legal, regulatory and reputational consequences.

Trading and clearing legislation

In the EU, there have been significant regulatory reforms to give effect to the 2009 G20 policy agenda. This includes European Market Infrastructure Regulation ("**EMIR**"), which began in 2012 and MiFID II/R, which began on 3 January 2018.

EMIR requires, among other things, the central clearing of certain standardised derivatives and risk mitigation techniques for uncleared OTC ("**over-the-counter**") derivatives. EMIR is currently being reviewed as part of the European Commission's EMIR Regulatory Fitness and

Performance programme ("**REFIT**") legislative proposal, but this has not yet been finalised. EMIR REFIT proposes to introduce targeted changes to EMIR to streamline the rules and make them less burdensome for certain counterparties.

MiFID II/R gives effect to the G20 commitment to move trading of standardised OTC derivatives to exchanges or electronic trading platforms as well as significantly enhances requirements for pre- and post-trade transparency, clearing, trade and transaction reporting and investor protection, and introduces a commodities position limits and reporting regime. MiFID II/R has introduced expanded requirements for a broad range of investment management activities within their investor protection requirements, including product governance, transparency on costs and charges, independent investment advice, inducements, record keeping and client reporting.

Loss absorbency requirements under the EU Bank Recovery and Resolution Directive

The EU Bank Recovery and Resolution Directive ("**BRRD**") and the UK transposition of the Directive established a requirement for the Bank of England ("**BoE**") to set a minimum requirement for own funds and eligible liabilities ("**MREL**"). The BoE finalised its policy for setting external MREL in November 2016, which confirmed that the BoE will apply a level of MREL in line with the global Total Loss Absorbing Capacity ("**TLAC**") standard, including with regards to timing (transitional arrangements will apply from 1 January 2019, with full compliance required by 1 January 2022). TLAC is intended to facilitate the resolution of a financial institution without causing financial instability and without recourse to public funds. The BoE subsequently issued a consultation paper on its proposed approach to setting internal MREL in October 2017 which confirmed that implementation of internal MREL requirements will follow the same timeline as for external MREL. The BoE is expected to finalise its internal MREL policy in 2018, with a view to communicating firm-specific interim targets ahead of the 1 January 2019 implementation date.

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

Capital Requirements Directive V and Capital Requirements Regulation II

The European Commission in November 2016 has published a comprehensive proposal for revised capital and liquidity legislation for banks and investment firms (so-called "**CRD-V/CRR-II/BRRD-II-Package**") which will implement in the EU many of the finalised Basel III capital and liquidity standards, including changes in relation to the leverage ratio, market risk capital, and a stable funding ratio.

In May 2018, the European Council published compromise proposals for the CRD IV/CRR-package reflecting its agreed general approach, while the European Parliament continues to consider amendments to the European Commission's proposal from November 2016 aiming to amend the CRD IV/CRR-package. The trilogue process is expected to commence in 2018, albeit the date of implementation remains difficult to predict. The proposals also include a transitional provision effectively delaying the implementation of most of the new proposals for a further two years after the formal adoption of the legislation. Thus, a January 2021 start date for the significant capital elements of the proposal seems likely. The changes proposed to the capital framework will require significant preparatory work both in terms of interpretation and implementing the new rules, the proposals of which are set out below.

- The legislation proposes an intermediate parent undertaking ("**IPU**") requirement for foreign banks, which will require non EU banks operating in Europe (with total EU assets of more than EUR 30 bn or which are part of a global systemically important banks ("**G-SIBs**")) to establish a single EU-located IPU. The full impact of the proposal on JPMS plc's operations will be heavily influenced by the outcome of the EU legislative process, including whether any flexibility is introduced to the requirement.

- The Fundamental Review of the Trading Book ("**FRTB**") overhauls the market risk capital requirements and aims to develop a new trading book framework. The impact on JPMS plc has not been quantified at this stage under these updated proposals.
- Standardised approach to measuring counterparty credit risk exposures ("**SA-CCR**") includes provisions differentiating between margined and un-margined transactions and improving the capital framework's risk sensitivity. SA-CCR also provides clearer recognition of netting benefits and the degree of volatility in counterparty exposures. In practice, JPMS plc is expected to implement the Internal Model Method ("**IMM**") approach for a large part of its exposures by the time SA-CCR is implemented, reducing the impact of the latter.
- The leverage ratio was introduced in Basel 3 (and transposed into CRR), as a non-risk based measure of the level of capital held by a firm. It is calculated by assessing Tier 1 capital to Total Exposures. The amendments now mandate a binding ratio, set at 3%, with discretion afforded to national authorities to increase this requirement if they deem necessary. It is not expected that the European implementation of the leverage ratio requirements will be a binding constraint on JPMS plc.

The Basel Committee recently finalised certain changes to the Basel III framework which includes revisions to the standardised approach to credit risk and operational risk calculation methods. They will affect JPMS plc only once implemented in the EU through changes to the CRD IV. Note that no firm plans for implementation of these changes have been set out by the EU legislative bodies.

15.3 **JPMS plc could become subject to a potential exercise by a UK resolution authority of its resolution powers.**

The BRRD entered into force on 2 July 2014. EU Member states were required to adopt and publish the laws, regulations and administrative provisions necessary to comply with the BRRD by 31 December 2014 and to apply those with effect from 1 January 2015, except in relation to the bail-in provisions, which were to apply from 1 January 2016 at the latest. Its stated aim is to provide national "resolution authorities" with powers and tools to address banking crises pre-emptively in order to safeguard financial stability and minimise taxpayers' exposure to losses.

The requirements of the BRRD have been fully implemented in the UK mainly through the UK Banking Act 2009, as amended and related statutory instruments (together, the "**UK Banking Act**"). The UK Banking Act provides for a "resolution regime" granting substantial powers to the Bank of England (or, in certain circumstances, HM Treasury), to implement resolution measures (in consultation with other UK authorities) with respect to a UK financial institution (for example, such as JPMS plc) where the UK resolution authority considers that the relevant institution is failing or is likely to fail, there is no reasonable prospect of other measures preventing the failure of the institution and resolution action is necessary in the public interest.

The resolution powers available to the UK resolution authority include powers to:

- write down the amount owing under the financial institution's liabilities, including contingent liabilities such as a Guarantee, including to zero, or convert the relevant securities into other securities, including ordinary shares of the relevant institution (or a subsidiary) – the so-called "bail-in" tool;
- transfer all or part of the business of the relevant institution to a "bridge bank";
- transfer impaired or problem assets to an asset management vehicle; and
- sell the relevant institution to a commercial purchaser.

In addition, the UK resolution authority is empowered to modify contractual arrangements, suspend enforcement or termination rights that might otherwise be triggered and disapply or modify laws in the UK (with possible retrospective effect) to enable the recovery and resolution powers under the UK Banking Act to be used effectively.

It should be assumed that, in a resolution situation, financial public support will only be available to JPMS plc (or any member of its group) as a last resort after the relevant UK resolution authorities have assessed and used, to the maximum extent practicable, the resolution tools, including the bail-in tool.

Investors should be aware that the exercise of any such resolution power or even the suggestion of any such potential exercise in respect of JPMS plc (or any member of its group) could have a material adverse effect on the rights of holders of Securities, and could lead to a loss of some or all of the investment. The resolution regime is designed to be triggered prior to insolvency of the relevant institution, and holders of securities issued or guaranteed by such institution may not be able to anticipate the exercise of any resolution power (including exercise of the "bail-in" tool) by the UK resolution authority. Further, holders of securities issued or guaranteed by an institution which has been taken into a resolution regime will have very limited rights to challenge the exercise of powers by the UK resolution authority, even where such powers have resulted in the write down of the securities or conversion of the securities to equity.

II. CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Registration Document, including the documents incorporated by reference herein, are forward-looking statements. These statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements often use words such as "anticipate", "target", "expect", "intend", "plan" or "goal". Forward-looking statements provide JPMorgan Chase's (JPMorgan Chase being JPMorgan Chase & Co. together with its consolidated subsidiaries, including JPMSP and JPMS plc) current expectations or forecasts of future events, circumstances, results or aspirations. JPMorgan Chase also may make forward-looking statements in its other documents filed or furnished with the SEC. In addition, JPMorgan Chase's senior management may make forward-looking statements orally to analysts, investors, representatives of the media and others.

All forward-looking statements are, by their nature, subject to risks and uncertainties, many of which are beyond JPMorgan Chase's control. JPMorgan Chase's actual future results may differ materially from those set forth in its forward-looking statements. While there is no assurance that any list of risks and uncertainties or risk factors is complete, below are certain factors which could cause actual results to differ from those in the forward-looking statements:

- local, regional and global business, economic and political conditions and geopolitical events;
- changes in laws and regulatory requirements, including capital and liquidity requirements affecting the businesses of JPMorgan Chase, and the ability of JPMorgan Chase to address those requirements;
- heightened regulatory and governmental oversight and scrutiny of JPMorgan Chase's business practices, including dealings with retail customers
- changes in trade, monetary and fiscal policies and laws;
- changes in income tax laws and regulations;
- securities and capital markets behaviour, including changes in market liquidity and volatility;
- changes in investor sentiment or consumer spending or savings behaviour;
- ability of JPMorgan Chase to manage effectively its capital and liquidity, including approval of its capital plans by banking regulators;
- changes in credit ratings assigned to JPMorgan Chase & Co. or its subsidiaries;
- damage to JPMorgan Chase's reputation;
- ability of JPMorgan Chase to deal effectively with an economic slowdown or other economic or market disruption;
- technology changes instituted by JPMorgan Chase, its counterparties or competitors;
- the success of JPMorgan Chase's business simplification initiatives and the effectiveness of its control agenda;
- ability of JPMorgan Chase to develop new products and services, and the extent to which products or services previously sold by JPMorgan Chase (including but not limited to mortgages and asset-backed securities) require JPMorgan Chase to incur liabilities or absorb losses not contemplated at their initiation or origination;
- acceptance of JPMorgan Chase's new and existing products and services by the marketplace and the ability of JPMorgan Chase to innovate and to increase market share;
- ability of JPMorgan Chase to attract and retain qualified employees;
- ability of JPMorgan Chase to control expense;

- competitive pressures;
- changes in the credit quality of JPMorgan Chase's customers and counterparties;
- adequacy of JPMorgan Chase's risk management framework, disclosure controls and procedures and internal control over financial reporting;
- adverse judicial or regulatory proceedings;
- changes in applicable accounting policies, including the introduction of new accounting standards;
- ability of JPMorgan Chase to determine accurate values of certain assets and liabilities;
- occurrence of natural or man-made disasters or calamities or conflicts and JPMorgan Chase's ability to deal effectively with disruptions caused by the foregoing;
- ability of JPMorgan Chase to maintain the security of its financial, accounting, technology, data processing and other operational systems and facilities;
- ability of JPMorgan Chase to withstand disruptions that may be caused by any failure of its operational systems or those of third parties;
- ability of JPMorgan Chase to effectively defend itself against cyberattacks and other attempts by unauthorised parties to access information of JPMorgan Chase or its customers or to disrupt JPMorgan Chase's systems; and
- the other risks and uncertainties detailed in the section entitled "Risk Factors" of this Registration Document.

Any forward-looking statements made by or on behalf of JPMorgan Chase & Co. speak only as of the date they are made and JPMorgan Chase & Co. does not undertake to update forward-looking statements to reflect the impact of circumstances or events that arise after the date the forward-looking statements were made. Investors should, however, consult any further disclosures of a forward-looking nature which JPMorgan Chase & Co. may make in any subsequent Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, or Current Reports on Form 8-K filed with the SEC.

III. RESPONSIBILITY STATEMENT

JPMS P accepts responsibility for the information given in this Registration Document except for the information contained in section VI., Appendix I and Appendix II and confirms that, having taken all reasonable care to ensure that such is the case, the information contained in this Registration Document is, to the best of its knowledge, correct, and that no material facts or circumstances have been omitted from this Registration Document.

JPMS plc accepts responsibility for the information given in this Registration Document except for the information contained in sections IV. and V. and confirm that, having taken all reasonable care to ensure that such is the case, the information contained in this Registration Document is, to the best of its knowledge, correct, and that no material facts or circumstances have been omitted from this Registration Document.

IV. INFORMATION INCORPORATED BY REFERENCE

This document should be read and construed in conjunction with each supplement to this Registration Document and the information incorporated by reference into this Registration Document. The information contained in the following documents, each filed by JPMSP with the CSSF, is hereby incorporated by reference into this Registration Document and deemed to be part of this Registration Document:

- (i) the audited JPMSP Annual Report for the year ended 31 December 2017 (the "**JPMSP 2017 Annual Report**"); and
- (ii) the audited JPMSP Annual Report for the year ended 31 December 2016 (the "**JPMSP 2016 Annual Report**").

Any information incorporated by reference that is not included in the cross-reference list is considered to be additional information and is not required by the relevant schedules of the Prospectus Regulation.

The table below sets out the relevant page references for the information incorporated into this Registration Document by reference.

| Information incorporated by reference | Page reference |
|---|----------------|
| <i>From the JPMSP 2017 Annual Report*</i> | |
| Directors' Report | Pages 3 to 5 |
| Financial Statements: | |
| Balance sheet | Page 6 |
| Income Statement | Page 7 |
| Statement of changes in equity | Page 8 |
| Statement of cash flows | Page 9 |
| Notes to the financial statements | Pages 10 to 27 |
| Other information: | |
| Profit appropriation according to the Articles of Association | Page 28 |
| Independent auditors' report | Pages 29 to 34 |
| <i>From the JPMSP 2016 Annual Report*</i> | |
| Directors' Report | Pages 3 to 5 |
| Financial Statements: | |
| Balance sheet | Page 6 |
| Income statement | Page 7 |
| Statement of changes in equity | Page 8 |
| Statement of cash flows | Page 9 |
| Notes to the financial statements | Pages 10 to 26 |
| Proposed appropriation of net results | Page 26 |
| Other information: | |
| Profit appropriation according to the Articles of Association | Page 27 |
| Independent auditors' report | Pages 28 to 36 |

*The page numbers referenced above relate to the PDF version of such document, which is available as set out below.

Investors who have not previously reviewed the information contained in the above documents should do so in connection with their evaluation of any Securities. In case of any inconsistencies between any statement contained in such a document and a statement contained in this Registration Document as supplemented from time to time by any supplement filed under Article 16 of the Prospectus Directive, the statement in the Registration Document shall prevail. The documents from which information is incorporated by reference will be available in form of a pdf on the Luxembourg Stock Exchange's

website (<https://www.bourse.lu/issuer/JPMorgStrucProd/59875>) under section "CSSF approvals" by clicking the sub-section "See all" and clicking then the subsection "document(s) incorporated by reference | supplement(s)" below "Base Prospectus 25/04/2018". The JPMSP 2016 Annual Report may be retrieved by clicking on "Document incorporated by reference – JPMSP – Annual Report 2016" and the JPMSP 2017 Annual Report by clicking on "Document incorporated by reference – JPMSP 2017 Annual Report".

V. J.P. MORGAN STRUCTURED PRODUCTS B.V.

1. History and Development

JPMSP was incorporated as a private limited liability company (*besloten vennootschap met beperkte aansprakelijkheid*) in Amsterdam, The Netherlands, on 6 November 2006 to exist for an unlimited duration. JPMSP mainly operates under the Dutch Civil Code (*Burgerlijk Wetboek*) and the Dutch Financial Supervision Act (*Wet op het financieel toezicht*). JPMSP was and remains registered at the Chamber of Commerce of Amsterdam under registered number 34259454 and has its registered offices at Luna ArenA, Herikerbergweg 238, 1101 CM Amsterdam, The Netherlands (telephone number +31 20 575 5600).

JPMSP is an indirect, wholly-owned subsidiary of JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. is one of the principal bank subsidiaries of JPMorgan Chase & Co., a company incorporated in the State of Delaware in the United States of America.

2. Investment Policy

JPMSP may undertake independent investments in its sole discretion with the proceeds (net of third party costs) of an issuance of notes, warrants or certificates, subject to compliance with certain legal, tax and regulatory restrictions.

3. Principal Activities

JPMSP's business principally consists of the issuance of securitised derivatives comprising notes, warrants and certificates, including equity-linked, reverse convertible and market participation notes (together, and for the purposes of this section only, the "**Securities**") and the subsequent hedging of those risk positions. All issuances which have been closed to date are subject to hedging arrangements. The proceeds of the sale of the Securities are used for general corporate purposes, including the entry into hedging arrangements with other J.P. Morgan affiliates. JPMSP anticipates that the hedging arrangements will be sufficient to hedge itself against the market risk of its securities issuance activities. JPMSP also has receipts from and makes payments to other J.P. Morgan affiliates.

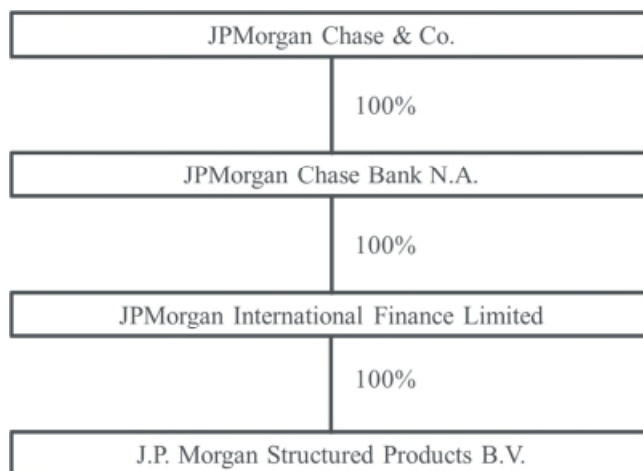
It is anticipated that JPMSP will, for each issuance, enter into hedging arrangements with other J.P. Morgan affiliates, and that such arrangements will be sufficient to hedge its market risk for each such issuance. Accordingly, the ability of JPMSP to perform its obligations under the Securities may be affected by any inability or failure to perform, pursuant to its hedging arrangements, by such other J.P. Morgan affiliate.

4. Principal Markets

During the financial year ended 31 December 2017, JPMSP issued Securities in the Asia Pacific region, Europe, the Middle East, Africa, Latin America and the United States of America.

5. Organisational Structure

JPMSP is an indirect, wholly-owned subsidiary of JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. is one of the principal bank subsidiaries of JPMorgan Chase & Co. JPMorgan Chase & Co. (together with its consolidated subsidiaries, "**JPMorgan Chase**") is a leading global financial services firm and one of the largest banking institutions in the United States, with operations worldwide.



As a consequence of the respective ownerships JPMSP is dependent on its sole shareholder JPMorgan International Finance Limited and its ultimate parent company JPMorgan Chase & Co. and thus on the business strategy for JPMorgan Chase. It is anticipated that JPMSP will, for each issuance, enter into hedging arrangements with other J.P. Morgan affiliates, and that such arrangements will be sufficient to hedge its respective market risk for each such issuance. Accordingly, the ability of JPMSP to perform its obligations under the Securities may be affected by any inability or failure to perform, pursuant to its hedging arrangements, by such other J.P. Morgan affiliate.

6. Trend Information

There have been no material adverse change in the prospects of JPMSP since 31 December 2017.

JPMSP's primary objective in 2018 will be the continued development of securitised products for their placement to retail, 'high net worth' and institutional investors principally outside of the United States of America, linked to a range of underlying reference assets including equity, credit, interest rates, commodities and so called "alternatives" such as funds and hedge funds.

7. Directors and Officers

The administrative, management and supervisory bodies of JPMSP comprise its Board of Directors. Set forth below are the names and positions of JPMSP's Directors:

| Name | Function | Business address |
|--------------------------|-------------------|---|
| Wolbert Hinrik Kamphuijs | Managing Director | Luna ArenA, Herikerbergweg 238, 1101 CM Amsterdam, The Netherlands |
| David Roland Hansson | Managing Director | 25/F Chater House, 8 Connaught Road, Central, Hong Kong |

| | | |
|--|-------------------|---|
| Marleen Frederika Carola van der Werff | Managing Director | Luna ArenA, Herikerbergweg 238, 1101 CM Amsterdam, The Netherlands |
| Delphine Robertson | Managing Director | 25 Bank Street Canary Wharf London E14 5JP United Kingdom |
| Jozef Cornelis Petrus van Uffelen | Managing Director | Luna ArenA, Herikerbergweg 238, 1101 CM Amsterdam, The Netherlands |

The principal outside activities of Mr. Kamphuijs, Mrs. van der Werff and Mr. van Uffelen are as employees of TMF Netherlands B.V., a trust company which was established in The Netherlands in 1970. Mr. Hansson is a Managing Director of the Investment Bank division at JPMorgan Chase and there are no principal outside activities performed by Mr. Hansson which are significant to JPMSP as Issuer. Mrs. Robertson is an Executive Director and co-head of the specialist structuring team within EMEA Equity Derivatives at the Investment Bank division at JPMorgan Chase and there are no principal outside activities performed by Mrs. Robertson which are significant to JPMSP as Issuer. All Directors hold office until removed.

There are no material potential conflicts of interest between any duties owed to JPMSP by the Directors of JPMSP identified above and their private interests and/or outside duties.

8. **Corporate Governance**

JPMSP complies with established and accepted principles of corporate governance in The Netherlands. The Board of Directors of JPMSP conducts itself in accordance with general principles of Dutch corporate law.

The Board of Directors has appointed a committee to authorise and transact issuances of Securities. No other committees made up for specific purposes or to perform specific functions have been appointed.

9. **Financial information**

Historical financial information

The JPMSP 2017 Annual Report and the JPMSP 2016 Annual Report are prepared and filed in accordance with the laws of The Netherlands.

Audited historical financial information for the fiscal years ended 31 December 2017, which forms part of JPMSP's 2017 Annual Report, and for the fiscal year ended 31 December 2016, which forms part of JPMSP's 2016 Annual Report, are incorporated by reference into this Registration Document.

Auditing of historical financial information

Mazars Paardekooper Hoffman Accountants N.V., who are members of the Royal Dutch Institute of Chartered Accountants (*Koninklijk Nederlands Instituut voor Registeraccountants*), have audited without qualification JPMSP's audited financial statements as at and for the financial year ended 31 December 2017. A copy of the auditor's report appears at page 27 (pages 29 to 34 of the pdf) of the JPMSP 2017 Annual Report and is incorporated by reference into this Registration Document. Mazars Paardekooper Hoffman Accountants N.V. has no material interest in JPMSP.

PricewaterhouseCoopers Accountants N.V., who are members of the Royal Dutch Institute of Chartered Accountants (*Koninklijk Nederlands Instituut voor Registeraccountants*), have audited without qualification JPMSP's audited financial statements as at and for the financial year ended 31 December 2016. A copy of the auditor's report appears at page 26 (pages 28 to 36 of the pdf) of the JPMSP's 2016 Annual Report, and is incorporated by reference into this Registration Document. PricewaterhouseCoopers Accountants N.V. has no material interest in JPMSP.

The address of Mazars Paardekooper Hoffman Accountants N.V. is Wilhelmina Tower, Delflandlaan 1, 1062 EA, Amsterdam, the Netherlands. The address of PricewaterhouseCoopers Accountants N.V. is: Thomas R. Malthusstraat 5, P.O. Box 90357, 1006 BJ Amsterdam, The Netherlands.

Interim financial information

JPMSP produces unaudited interim financial statements in respect of the period ended 30 June in each year.

10. **Selected Financial Information**

The following table shows selected financial information in relation to the Issuer which is derived from the audited financial statements as at and for the financial years ended 31 December 2016 (JPMSP 2016 Annual Report) and 31 December 2017 (JPMSP 2017 Annual Report), each prepared in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU:

| Selected income statement data | | |
|--|-------------------------------|----------------|
| (in USD) | Year ended 31 December | |
| | 2017 | 2016 |
| Profit/(Loss) before income tax: | 5,628,000 | 2,177,000 |
| Profit/(Loss) for the year attributable to equity shareholders of the Company: | 4,232,000 | 1,703,000 |
| Selected balance sheet data | | |
| (in USD) | As at 31 December | |
| | 2017 | 2016 |
| Total assets: | 32,059,705,000 | 19,961,720,000 |
| Total liabilities: | 31,524,839,000 | 19,431,086,000 |
| Total equity: | 534,866,000 | 530,634,000 |

11. Capital Structure

The authorised share capital of JPMSP is euro 90,000, divided into 90,000 ordinary shares of euro 1.00 each. At incorporation 18,000 ordinary shares were issued. By a notarial deed of share issuance dated 30 March 2007 an additional 2,000 ordinary shares were issued in consideration of U.S. \$500,000,000. The total issued and fully paid up share capital therefore amounts to 20,000 ordinary shares. JPMSP does not hold any of its own shares. All shares are held by JPMorgan International Finance Limited.

12. Memorandum and Articles of Association

JPMSP's objects as set out in Article 3 of its Articles of Association are:

- (a) to incorporate, to participate in any way whatsoever, to manage, to supervise, to operate and to promote enterprises, businesses and companies;
- (b) to finance businesses and companies;
- (c) to borrow, to lend and to raise funds, including the issue of bonds, promissory notes or other securities or evidence of indebtedness as well as to enter into agreements in connection with the aforementioned;
- (d) to enter into swaps and any other derivative transactions whatsoever to hedge the company's exposure under any agreements, securities or other instruments whatsoever to which it is a party;
- (e) to supply advice and to render services to enterprises and companies with which the company forms a group and to third parties;
- (f) to render guarantees, to bind the company and to pledge its assets for obligations of the companies and enterprises with which it forms a group and on behalf of third parties;
- (g) to obtain, alienate, manage and exploit registered property and items of property in general;
- (h) to trade in currencies, securities and items of property in general;
- (i) to develop and trade in patent, trademarks, licences, knowhow and other intellectual and industrial property-rights;
- (j) to perform any and all activity of industrial, financial or commercial nature, as well as everything pertaining to the foregoing, relating thereto or conducive thereto, all in the widest sense of the word.

13. Legal and arbitration proceedings

JPMSP is not and has not been involved in any governmental, legal or arbitration proceedings relating to claims or amounts that are material during the 12-month period ending on the date of this Registration Document which may have, or have had in the recent past, significant effects on the financial position or profitability of JPMSP nor, so far as JPMSP is aware, are any such governmental, legal or arbitration proceedings pending or threatened.

14. No significant change in the Issuer's financial or trading position

There have been no significant changes in the financial or trading position of JPMSP since 31 December 2017.

15. Principal Establishments and Real Estate owned

JPMSP does not own any principal establishments, which account for more than 10 per cent. of its revenues, nor does JPMSP own any real estate directly.

16. **Dividends**

JPMSP has not paid any dividends since its incorporation on 6 November 2006.

VI. J.P. MORGAN SECURITIES PLC

1. History and Development

JPMS plc was incorporated as a public limited liability company domiciled in England and Wales on 30 April 1992. JPMS plc was and remains registered at the Companies House in England under registered number 02711006 and has its registered offices at 25 Bank Street, Canary Wharf, London, E14 5JP, United Kingdom (telephone number +44 20 7777 2000). JPMS plc is authorised by the Prudential Regulation Authority (PRA) and regulated by the Financial Conduct Authority (FCA) and the PRA in the United Kingdom.

2. Principal Activities and Principal Markets

JPMS plc is an indirect principal subsidiary of the JPMorgan Chase & Co. in the United Kingdom ("UK") and the European Economic Area ("EEA"). It has branches in Frankfurt, Paris, Milan, Madrid, Stockholm and Zurich. It has outward services passports across the EEA and outward branch passports for the respective branches except Zurich.

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 government and corporate bonds, equities and other securities; arranging private placements of debt and convertible securities; trading in debt securities, equity securities, commodities, swaps and other derivatives; providing brokerage and clearing services for exchange traded future and options contracts; lending related activities and providing investment banking advisory services. JPMS plc is a member of over twenty exchanges and various clearing houses, including, among others, LCH Clearnet Limited, LME Clear, Eurex Clearing AG and ICE Clear Europe.

JPMS plc is a UK bank and a credit institution within the meaning of the EU Directive 2013/13/EU ("CRD IV"), legally defined as an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account.

3. Organisational Structure

JPMS plc is a subsidiary undertaking of J.P. Morgan Capital Holdings Limited, a company incorporated in England and Wales, and of its ultimate parent company JPMorgan Chase & Co., a company incorporated in the United States of America. JPMS plc is a principal subsidiary of JPMorgan Chase & Co. JPMorgan Chase ("JPMorgan Chase" being JPMorgan Chase & Co. together with its consolidated subsidiaries) 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. As a consequence of the respective ownerships JPMS plc is dependent on its sole shareholder J.P. Morgan Capital Holdings Limited and its ultimate parent company JPMorgan Chase & Co. and thus on the business strategy for JPMorgan Chase.

4. Trend Information

There have been no material adverse change in the prospects of JPMS plc since 31 December 2017.

The following statements are based on the current beliefs and expectations of JPMS plc's management and are subject to significant risks and uncertainties. These risks and uncertainties could negatively affect JPMS plc's actual results. See "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors" in this Registration Document.

Future outlook

The outlook of JPMS plc for the full 2018 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 JPMS plc does business. Each of these inter-related factors will affect the performance of JPMS plc and its lines of business ("LOB's").

On 23 June 2016, the UK voted by referendum to leave the European Union ("**Brexit**"). The UK Government invoked Article 50 of the Lisbon Treaty on 29 March 2017, starting a two year period for the formal exit negotiations. This means that the UK will leave the EU on 29 March 2019 assuming the timeline is not unanimously extended by the remaining 27 EU Member States ("**EU 27**") and the UK. Formal negotiations began on 19 June 2017. In December 2017, the EU 27 agreed that 'sufficient progress' had been made on the terms of the UK's withdrawal to allow parallel talks on the future relationship, and on 23 March 2018, the European Council announced a political agreement with the UK for a 21-month transition period, and adopted negotiating guidelines on the long-term agreement.

The UK's priorities in negotiating the future relationship are to seek a bilateral free trade agreement with the EU 27 that facilitates the 'greatest possible access' to the Single Market, but that the UK will not seek to continue its membership of the Single Market. The current EU position, as set out in Council negotiating directives, is that negotiations will address trade in both goods and services, with the aim of allowing market access under host state rules, but that any future framework should safeguard financial stability in the EU and respect its regulatory and supervisory regime. Formal talks on the broad set of future relationship issues began in early April. On 23 March 2018 EU leaders confirmed that a political agreement had been reached with the UK that provisions for a 21-month transition period following Brexit to be included in the withdrawal agreement. The withdrawal agreement will need to be ratified by the UK and European Parliament before the UK's official exit date of 29 March 2019.

Brexit will have significant impact across the firm's European businesses, including business and legal entity reorganisation. However, the situation remains highly uncertain, including in relation to whether a transition period is secured and whether financial services will be included in any future free trade agreement.

The impact of Brexit on JPMS plc's business model and risks will continue to be assessed as part of the firmwide strategy in considering a strategic post-Brexit legal entity structure.

In response to the strategic changes which will be required under Brexit, there is potential that migrations of business out of JPMS plc into other EU entities will need to occur. Furthermore, it is possible that some surplus capital resources will be released and could be transferred from JPMS plc to support business transferred into other EU entities. The amount of any such transfers is still to be determined.

Regulatory Developments

In the EU, there is an extensive and complex program of final and proposed regulatory enhancement that reflects, in part, the EU's commitments to policies of the Group of Twenty Finance Ministers and Central Bank Governors ("**G20**") together with other plans specific to the EU. The EU operates a European Systemic Risk Board that monitors financial stability, together with European Supervisory Authorities ("**ESAs**") that set detailed regulatory rules and encourage supervisory convergence across the EU's Member States. The EU is currently reviewing the ESA framework. The EU has also created a Single Supervisory Mechanism for the eurozone, under which the regulation of all banks in that zone will be under the auspices of the European Central Bank, together with a Single Resolution Mechanism and Single Resolution Board, having jurisdiction over bank resolution in the zone. At both the G20 and EU levels, various proposals are under consideration to address risks associated with global financial institutions.

The EU is also currently considering or implementing significant revisions to laws covering securities settlement; mutual funds and pensions; payments; anti-money laundering controls; data security and privacy; transparency and disclosure of securities financing transactions; benchmarks; resolution of banks, investment firms and market infrastructures; and capital and liquidity requirements for banks and investment firms.

Consistent with the G20 and EU policy frameworks, UK regulators have adopted a range of policy measures that have significantly changed the markets and prudential regulatory environment in the UK. In addition, UK regulators have introduced measures to enhance

accountability of individuals, and promote forward-looking conduct risk identification and mitigation, including by introducing the senior managers and certification regimes.

5. Directors and Officers

The administrative, management and supervisory bodies of JPMS plc comprise its Board of Directors. Set forth below are the names and positions of JPMS plc's Directors at the date of this Registration Document. The business address of each Director is 25 Bank Street, Canary Wharf, London, E14 5JP, England.

| Name | Function | Principal Outside Activities |
|-----------------------|--|--|
| Sir Winfried Bischoff | Independent Non-Executive Chairman of J.P. Morgan Securities plc, of its Nomination Committee and the UK Remuneration Committee. Member of the Directors' Risk Policy Committee. | Chairman of the UK Financial Reporting Council |
| Laban Jackson | Independent Non-Executive Director and Chairman of the UK Audit and Compliance Committee and member of the UK Remuneration Committee. | Director of JPMorgan Chase & Co. and member of the JPMorgan Chase & Co. Audit Committee Chairman of Clear Creek Properties Inc. |
| Scott Moeller | Independent Non-Executive Director and Chairman of the Directors' Risk Policy Committee. Member of the Nomination Committee | Director, M&A Research Centre, Cass Business School |
| Jane Moran | Independent Non-Executive Director and member of the Nomination Committee and UK Audit and Compliance Committee | Chief Information Officer, Unilever plc |
| Monique Shivanandan | Independent Non-Executive Director and member of the Directors' Risk Policy Committee and UK Audit and Compliance Committee | Group Chief Information Officer, Chubb Limited |
| Daniel Pinto | Director and Chief Executive Officer of Corporate and Investment Bank | Co-President and Co-Chief Operating Officer for JPMorgan Chase & Co; |
| Andrew Cox | Director, Chief Risk Officer and Head of Credit Risk, EMEA | |
| Mark Garvin | Director and Vice Chairman for Corporate and Investment Bank, EMEA | |

| | | |
|--------------------|---|--|
| Elena Korablina | Director and Chief Financial Officer, EMEA | |
| Julia Meazzo | Director and Head of Human Resources, EMEA | |
| Viswas Raghavan | Director and Chief Executive Officer; Chief Executive Officer, EMEA; Head of EMEA Banking | |
| Jason Edwin Sippel | Director; Co-Head of Global Equities | |

There are no material potential conflicts of interest between any duties owed to JPMS plc by the Directors of JPMS plc identified above and their private interests and/or outside duties.

6. **Financial information**

Historical financial information

Financial information of JPMS plc for the financial year 2017 prepared in accordance with United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law (United Kingdom Generally Accepted Accounting Practice) can be found in Appendix I ("**JPMS plc 2017 Annual Report**") of the Registration Document (pages F-1 to F-76).

Financial information of JPMS plc for the financial year 2016 prepared in accordance with United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law (United Kingdom Generally Accepted Accounting Practice) can be found in Appendix II ("**JPMS plc 2016 Annual Report**") of the Registration Document (pages G-1 to G-46).

Auditing of historical financial information

PricewaterhouseCoopers LLP, Chartered Accountants and Statutory Auditors, have audited without qualification JPMS plc's audited financial statements. A copy of the auditor's report from the JPMS plc 2017 Annual Report appears on pages F-27 to F-33 of Appendix I and from the JPMS plc 2016 Annual Report at pages G-3 to G-4 of Appendix II to this Registration Document. PricewaterhouseCoopers LLP has no material interest in JPMS plc.

The address of PricewaterhouseCoopers LLP is: 7 More London Riverside, London, SE1 2RT, United Kingdom.

7. **Major Shareholders**

JPMS plc is a wholly-owned subsidiary of J.P. Morgan Capital Holdings Limited, a company incorporated in England and Wales.

8. **Legal and arbitration proceedings**

JPMS plc is not and has not been involved in any governmental, legal or arbitration proceedings relating to claims or amounts that are material during the 12-month period ending on the date of this Registration Document which may have, or have had in the recent past, significant effects on the financial position or profitability of JPMS plc nor, so far as JPMS plc is aware, are any such governmental, legal or arbitration proceedings pending or threatened.

9. **No significant change in the Issuer's financial position**

There have been no significant changes in the financial position of JPMS plc since 31 December 2017.

VII. DOCUMENTS ON DISPLAY

Throughout the life of this Registration Document and from the date hereof, the following documents, or copies thereof, will be available, during normal business hours on any weekday (Saturdays, Sundays and public holidays excepted), for inspection at the office of the Programme Agent (BNP Paribas Securities Services S.C.A., Frankfurt Branch, Europa-Allee 12, 60327 Frankfurt am Main, Germany) and in another form as may be required by law.

- (i) JPMSP 2017 Annual Report and the JPMSP 2016 Annual Report;
- (ii) JPMS plc 2017 Annual Report and the JPMS plc 2016 Annual Report;
- (iii) the Articles of Association of the JPMSP as amended from time to time;
- (iv) the Articles of Association of the JPMS plc as amended from time to time;
- (v) a copy of this Registration Document; and
- (vi) a copy of any supplement to this Registration Document, including any document(s) incorporated by reference therein.

Furthermore, the documents mentioned under (v) and (vi) above are published in electronic form on the website <https://www.jpmorgan-zertifikate.de/en/library/legal-documents/> under the section "Legal documents".

APPENDIX I

Annual Report of J.P. Morgan Securities plc for the financial year ended 2017

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J.P. MORGAN SECURITIES PLC

(Registered Number: 02711006)

Annual report for the year ended 31 December 2017



J.P. MORGAN SECURITIES PLC

Strategic report

The directors present the strategic report of J.P. Morgan Securities plc (the "Company" or "JPMS plc") for the year ended 31 December 2017.

Overview

JPMS plc, a public limited company incorporated and domiciled in England and Wales, 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. JPMS plc had \$621 billion in assets and \$42 billion in total shareholder's equity as of 31 December 2017.

Principal activity

The Company is a principal subsidiary of the Firm in the United Kingdom ("UK") and the European Economic Area ("EEA"). The Company 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 government and corporate bonds, equities and other securities; arranging private placements of debt and convertible securities; trading in debt securities, equity securities, commodities, swaps and other derivatives; providing brokerage and clearing services for exchange traded future and options contracts; lending related activities and providing investment banking advisory services. The Company is a member of over twenty exchanges and various clearing houses, including, among others, LCH Clearnet Limited, LME Clear, Eurex Clearing AG and ICE Clear Europe.

The Company is a UK bank and a EEA Capital Requirements Directive IV ("CRD IV") credit institution, legally defined as an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account.

The Company is authorised by the Prudential Regulation Authority ("PRA") and regulated by the PRA and Financial Conduct Authority ("FCA") in the UK. It has branches in Frankfurt, Paris, Milan, Madrid, Stockholm and Zurich. It has Outward Services Passports across the EEA and Outward Branch Passports for the respective branches except Zurich.

Review of business

The directors are satisfied with the performance of the Company with core businesses performing in line with expectations. Despite operating in a highly competitive and complex global environment with continued mixed market conditions and an increasingly complex global environment, results for the year were strong demonstrating the strength and depth of the Company's client franchises. The results further reflect the Company's client focus which allowed businesses to continue to provide investment opportunities to clients through its strength as a market maker, leading to continued profitable results in 2017.

Total assets increased representing the growth in the Company's client franchises with financial assets held for trading (which includes derivatives) and associated collateral up year on year. The Company continued to be well capitalised and met all external capital requirements.

During the year, with a view to enhance governance over the legal entity structure and to simplify the booking models, the risk management of certain businesses of J.P. Morgan Whitefriars LLC was transferred to the Company with a view of supporting the realignment of these dedicated businesses.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Key performance indicators ("KPIs")

The results are monitored against expectations of the business activities. The directors monitor progress on the performance of the Company using various metrics. The primary KPIs are set out below:

| Financial performance (in USD '000's except for capital ratios) | 2017 | 2016 |
|---|-------------|-------------|
| Income statement | | |
| Total operating income | 7,410,214 | 7,003,213 |
| Profit on ordinary activities before taxation | 3,599,049 | 3,987,453 |
| Profit for the financial year (after tax) | 2,635,459 | 3,145,644 |
| Balance sheet | | |
| Total assets | 620,914,735 | 569,832,627 |
| Capital ratios (unaudited) | | |
| Common Equity Tier 1 | 39,877,617 | 30,133,855 |
| Common Equity Tier 1 ratio ("CET 1") | 15.9% | 15.1% |
| Pillar 1 capital ratio | 15.9% | 18.7% |
| Regulatory minimum total required capital ratio* | 8.0% | 8.0% |

* Represents minimum requirements of the European Union's Basel III Capital Requirements Directive and Regulation. The Company's total capital ratio as of 31 December 2017 and 2016 exceeded the minimum requirements, as well as the additional capital requirements in excess of the minimum as specified by the PRA.

Income statement

The income statement for the year ended 31 December 2017 is set out on page 41. Total operating income was \$7,410 million for 2017 (2016: \$7,003 million). The results for the Company show a pre-tax profit of \$3,599 million for 2017 (2016: \$3,987 million).

Balance sheet

The balance sheet is set out on page 42. The Company has total assets and total liabilities of \$620,915 million (2016: \$569,833 million) and \$579,400 million (2016: \$530,385 million) respectively, as at 31 December 2017.

Capital ratios

The Company continues to maintain strong capital ratios. Refer to Risk management section on page 7 for further details.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Future outlook

The Company'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 Company does business. Each of these inter-related factors will affect the performance of the Company and its lines of business ("LOB's").

Brexit

On 23 June 2016, the UK voted by referendum to leave the European Union ("Brexit"). The UK Government invoked Article 50 of the Lisbon Treaty on 29 March 2017, starting a two year period for the formal exit negotiations. This means that the UK will leave the EU on 29 March 2019 assuming the timeline is not unanimously extended by the remaining 27 EU Member States ("EU 27") and the UK. Formal negotiations began on 19 June 2017. In December 2017, the EU27 agreed that 'sufficient progress' had been made on the terms of the UK's withdrawal to allow parallel talks on the future relationship, and on 23 March 2018, the European Council announced a political agreement with the UK for a 21-month transition period, and adopted negotiating guidelines on the long-term agreement.

The UK's priorities in negotiating the future relationship are to seek a bilateral free trade agreement with the EU27 that facilitates the 'greatest possible access' to the Single Market, but that the UK will not seek to continue its membership of the Single Market. The current EU position, as set out in Council negotiating directives, is that negotiations will address trade in both goods and services, with the aim of allowing market access under host state rules, but that any future framework should safeguard financial stability in the EU and respect its regulatory and supervisory regime. Formal talks on the broad set of future relationship issues began in early April. On 23 March EU leaders confirmed that a political agreement had been reached with the UK that provisions for a 21-month transition period following Brexit to be included in the Withdrawal Agreement. The Withdrawal agreement will need to be ratified by the UK and European Parliament before the UK's official exit date of 29 March 2019.

Brexit will have significant impact across the Firm's European businesses, including business and legal entity reorganisation. However, the situation remains highly uncertain, including in relation to whether a transition period is secured and whether financial services will be included in any future free trade agreement.

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

In response to the strategic changes which will be required under Brexit, there is potential that migrations of business out of the Company into other EU entities will need to occur. Furthermore, it is possible that some surplus capital resources will be released and could be transferred from the Company to support business transferred into other EU entities. The amount of any such transfers is still to be determined.

Regulatory developments

In the EU, there is an extensive and complex program of final and proposed regulatory enhancement that reflects, in part, the EU's commitments to policies of the Group of Twenty Finance Ministers and Central Bank Governors ("G20") together with other plans specific to the EU. The EU operates a European Systemic Risk Board that monitors financial stability, together with European Supervisory Authorities ("ESAs") that set detailed regulatory rules and encourage supervisory convergence across the EU's Member States. The EU is currently reviewing the ESA framework. The EU has also created a Single Supervisory Mechanism for the euro-zone, under which the regulation of all banks in that zone will be under the auspices of the European Central Bank, together with a Single Resolution Mechanism and Single Resolution Board, having jurisdiction over bank resolution in the zone. At both the G20 and EU levels, various proposals are under consideration to address risks associated with global financial institutions.

The EU is also currently considering or implementing significant revisions to laws covering securities settlement; mutual funds and pensions; payments; anti-money laundering controls; data security and privacy; transparency and disclosure of securities financing transactions; benchmarks; resolution of banks, investment firms and market infrastructures; and capital and liquidity requirements for banks and investment firms.

Consistent with the G20 and EU policy frameworks, UK regulators have adopted a range of policy measures that have significantly changed the markets and prudential regulatory environment in the UK. In addition, UK regulators have introduced measures to enhance accountability of individuals, and promote forward-looking conduct risk identification and mitigation, including by introducing the senior managers and certification regimes.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Regulatory Developments (continued)

Recovery and resolution

On 1 July 2017, the Firm filed with the Board of Governors of the Federal Reserve ("Federal Reserve") and the Federal Deposit Insurance Corporation ("FDIC") (collectively the "agencies") its 2017 Resolution Plan, describing how the Firm remediated the remaining unresolved shortcomings identified by the agencies in April 2016. In December 2017, we received feedback from the agencies on the 2017 Resolution Plan. This feedback concluded that the Firm's 2017 Resolution Plan had no deficiencies and no shortcomings, meaning that the agencies deem the plan to be credible and executable in a crisis.

The Company is considered a material legal entity (as defined in its 2017 Resolution Submission) for the purpose of the Firms' annual Resolution Plan. As noted in the CEO report on page 1, the Firm has taken several steps to address the feedback provided in April 2016 including, among others, the objective to comprehensively reassess the resolvability of the UK subsidiaries, including the Company, and simplify its financial, operational, and structural interconnectedness with JPMorgan Chase undertakings.

Trading and clearing legislation

In the EU, there have been significant regulatory reforms to give effect to the 2009 G20 policy agenda. This includes European Market Infrastructure Regulation ("EMIR"), which began in 2012 and MiFID II/R, which began on 3 January 2018.

EMIR requires, among other things, the central clearing of certain standardised derivatives and risk mitigation techniques for uncleared OTC ("over-the-counter") derivatives. EMIR is currently being reviewed as part of the European Commission's EMIR Regulatory Fitness and Performance programme ("REFIT") legislative proposal, but this has not yet been finalised. EMIR REFIT proposes to introduce targeted changes to EMIR to streamline the rules and make them less burdensome for certain counterparties.

MiFID II/R gives effect to the G20 commitment to move trading of standardised OTC derivatives to exchanges or electronic trading platforms as well as significantly enhances requirements for pre- and post-trade transparency, clearing, trade and transaction reporting and investor protection, and introduces a commodities position limits and reporting regime. MiFID II/R has introduced expanded requirements for a broad range of investment management activities within their investor protection requirements, including product governance, transparency on costs and charges, independent investment advice, inducements, record keeping and client reporting.

Loss absorbency requirements under the EU Bank Recovery and Resolution Directive

The EU Bank Recovery and Resolution Directive ("BRRD") and the UK transposition of the Directive established a requirement for the Bank of England ("BoE") to set a minimum requirement for own funds and eligible liabilities ("MREL"). The BoE finalised its policy for setting external MREL in November 2016, which confirmed that the BoE will apply a level of MREL in line with the global Total Loss Absorbing Capacity ("TLAC") standard, including with regards to timing (transitional arrangements will apply from 1 January 2019, with full compliance required by 1 January 2022). TLAC is intended to facilitate the resolution of a financial institution without causing financial instability and without recourse to public funds. The BoE subsequently issued a consultation paper on its proposed approach to setting internal MREL in October 2017 which confirmed that implementation of internal MREL requirements will follow the same timeline as for external MREL. The BoE is expected to finalise its internal MREL policy in 2018, with a view to communicating Firm-specific interim targets ahead of the 1 January 2019 implementation date.

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

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Regulatory Developments (continued)

Capital Requirements Directive V ("CRD V")/Capital Requirements Regulation 2 ("CRR 2")

The CRD V/CRR 2 proposal for revised capital and liquidity legislation for banks and investment firms will implement in the EU many of the finalised Basel III capital and liquidity standards, including changes in relation to the leverage ratio, market risk capital, and a stable funding ratio.

The European Council and the European Parliament continue to consider amendments to the European Commission's proposal from November 2016 to amend CRD IV/CRR. The trilogue process is expected to commence in 2018, albeit the date of implementation remains difficult to predict. The proposals also include a transitional provision effectively delaying the implementation of most of the new proposals for a further two years after the formal adoption of the legislation. Thus, a January 2021 start date for the significant capital elements of the proposal seems likely. The changes proposed to the capital framework will require significant preparatory work both in terms of interpretation and implementing the new rules, the proposals of which are discussed below.

- The legislation proposes an intermediate parent undertaking ("IPU") requirement for foreign banks, which will require non-EU banks operating in Europe (with total EU assets >EUR30bn or which are part of a global systemically important banks ("G-SIBs")) to establish a single EU-located IPU. The full impact of the proposal on the Company's operations will be heavily influenced by the outcome of the EU legislative process, including whether any flexibility is introduced to the requirement.
- The Fundamental Review of the Trading Book ("FRTB") overhauls the market risk capital requirements and aims to develop a new trading book framework. The impact on the Company has not been quantified at this stage under these updated proposals.
- Standardised approach to measuring counterparty credit risk exposures ("SA-CCR") includes provisions differentiating between margined and un-margined transactions and improving the capital framework's risk sensitivity. SA-CCR also provides clearer recognition of netting benefits and the degree of volatility in counterparty exposures. In practice, the Company is expected to implement the Internal Model Method ("IMM") approach for a large part of its exposures by the time SA-CCR is implemented, reducing the impact of the latter.
- The leverage ratio was introduced in Basel 3 (and transposed into CRR), as a non-risk based measure of the level of capital held by a firm. It is calculated by assessing Tier 1 capital to Total Exposures. The amendments now mandate a binding ratio, set at 3%, with discretion afforded to national authorities to increase this requirement if they deem necessary. It is not expected that the European implementation of the leverage ratio requirements will be a binding constraint on the Company.
- The Basel Committee recently finalised certain changes to the Basel III framework which includes revisions to the standardised approach to credit risk and operational risk calculation methods. They will affect the Company only once 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.

Risk management

Risk is an inherent part of the Company's business activities. The Company'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 Company.

JPMorgan Chase's and the Company's risk management framework seeks to mitigate risk and loss to the Firm and Company. 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.

Firmwide Risk Management is overseen and managed on an enterprise-wide basis. The Firmwide governance strategy is set by Line of Business ("LOB"). This is supported by global policies and standards to which all staff world-wide are required to adhere to.

Within Europe, the Middle East and Africa ("EMEA"), a regional governance framework incorporates the Firmwide strategy, and the Firm's policies, procedures and LOB structure. This regional framework is thus supplemental and complementary to the global framework and also provides the requisite link between the EMEA legal entities and the LOBs.

At a Company level, the Global Legal Entity Risk framework assigns risk tiers from 1 to 4 to the Firm's significant operating entities across all lines of business, where Tier 1 represents the highest level of risk management oversight required. Core and recommended governance standards have been created for each tier of governance. The Company is considered as Tier 1.

The Company's Board of Directors and its committees maintain oversight of risk management, which is 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.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Risk summary

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

| Risk | Definition |
|--|--|
| Economic risks | |
| Capital risk | The risk that the Company has an insufficient level and composition of capital to support the Company's business activities, and associated risks during normal economic environments and stressed conditions. |
| Credit risk | The risk associated with the default or change in credit profile of a customer. |
| Country risk | The framework for monitoring and assessing how financial, economic, political or other significant developments adversely affect the value of the Firm's exposures related to a particular country or set of countries. |
| Liquidity risk | The risk that the Company will be unable to meet its contractual and contingent financial obligations as they arise 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 associated with the effect of changes in market factors, such as interest rates or foreign exchange rates, equity and commodity prices, implied volatilities or credit spreads, on the value of assets and liabilities held for both the short and long term. |
| 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 Company's assets or liabilities or future results. |
| Structural interest rate risk | The risk resulting from the Company'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"). |
| Other core risks | |
| Compliance risk | The risk of failure to comply with applicable laws, rules and regulations. |
| Conduct risk | The risk that any action or inaction by an employee of the Company could lead to unfair client/customer outcome, compromise the Company's reputation, impact the integrity of the markets in which the Company operates, or reflect poorly on the Firm's culture. |
| Legal risk | The risk of loss primarily caused by the actual or alleged failure to meet legal obligations that arise from the rule of law in jurisdictions in which the Firm and Company operates, agreements with clients and customers and products and services offered by the Company and the Firm. |
| Model risk | The risk of the potential for adverse consequences from decisions based on incorrect or misused model outputs. |
| Operational risk | The risk associated with inadequate or failed internal processes, people or systems, or from external events. |
| Reputation risk | The potential that an action, inaction, transaction, investment or event will reduce trust in the Company and the Firm's integrity or competence by our various constituents, including clients, counterparties, regulators, employees and the broader public. |

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. 2017 Annual Report on Form 10-K.

Capital risk (audited)

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

A strong capital position is essential to the Company'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 Company 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.

^(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.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Capital risk (audited) (continued)

The framework used to manage capital within the Company 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 the Company maintains 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 Company 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. The annual 'Reverse stress testing' exercise is used to identify potential, extreme scenarios which might threaten the viability of the Company's business model, so that any required mitigation can be put in place.

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

| 31 December | 2017 | 2016 |
|--|-------------------|-------------------|
| | \$'000 | \$'000 |
| Common Equity Tier 1 (Equity share capital and reserves) | 39,877,617 | 30,133,855 |
| Other Tier 1 (Preference shares and preferred ordinary shares) (note 24) | — | 3,089,899 |
| Tier 2 (Preference shares and subordinated loan) (note 24) | — | 4,087,261 |
| Total capital resources | 39,877,617 | 37,311,015 |
| Pillar 1 capital requirement (unaudited) | 20,014,406 | 15,964,475 |
| Excess of total capital resources over Pillar 1 capital requirements (unaudited) | 19,863,211 | 21,346,540 |
| Common Equity Tier 1 ratio ("CET 1") (unaudited) | 15.9% | 15.1% |
| Pillar 1 capital ratio (unaudited) | 15.9% | 18.7% |

As of 31 December 2017 and 2016, the Company was adequately capitalised and met all external capital requirements. Capital resources utilised to calculate capital ratios are inclusive of audited current year profits. Additionally, the operational risk requirement included within the Pillar 1 Capital Requirement has been recalculated to incorporate current year net income.

Company information is included as part of the consolidated Pillar 3 disclosures of J.P. Morgan Capital Holdings Limited 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 EBA. These disclosures are not subject to external audit.

Credit risk (audited)

Credit risk is the risk associated with the default or change in credit profile of a client, counterparty or customer. Credit risk management is an independent risk management function that monitors, measures and manages credit risk throughout the Firm and defines credit risk policies and procedures. The credit risk function reports to the Firm's Chief Risk Officer ("CRO").

The Company is exposed to credit risk through its underwriting, lending, market-making, capital markets and hedging activities with and for clients and counterparties, as well as through its operating services activities (such as clearing activities), securities financing activities, investment securities portfolio, and cash internally swept to other group entities. Whilst the Firm has established a comprehensive Firmwide risk policy framework, this is supplemented as required by legal entity-specific risk policies. As such, the Company's Credit Risk Management policy supplements the Firmwide risk policy framework and is approved by the Company's Board and Board of Directors' Risk Policy Committee ("DRPC").

Risk identification and measurement

The Credit Risk Management function monitors, measures, manages and limits credit risk across the Firm's businesses. To measure credit risk, the Firm 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, risk measurement parameters, and risk management and collection 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.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Credit risk (audited) (continued)

For the Company's 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 loan 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 differentiate 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 both internal and external historical experience and management judgment and are reviewed regularly.

Stress testing

Stress testing is important in measuring and managing credit risk in the Company's credit portfolio. The process assesses the potential impact of alternative economic and business scenarios on estimated credit losses for the Firm. Economic scenarios and the underlying parameters are defined centrally, articulated in terms of macroeconomic factors and applied across the businesses. The stress test results may indicate credit migration, changes in delinquency trends and potential losses in the credit portfolio. In addition to the periodic stress testing processes, management also considers additional stresses outside these scenarios, including industry and country specific stress scenarios, as necessary. The Firm uses stress testing to inform decisions on setting risk appetite both at a Firm and Company level, as well as to assess the impact of stress on individual counterparties.

Risk monitoring and management

The Company is subject to the policies and practices developed by the Firm. The 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 line of businesses.

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. Industry and counterparty limits, as measured in terms of exposure and economic risk appetite, are subject to stress-based loss constraints. 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.

Management of the Firm's 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
- Credit derivatives
- Master netting agreements
- Collateral and other risk-reduction techniques

Risk reporting

To enable monitoring of credit risk and effective decision making by the Company, aggregate credit exposure, concentration levels and risk profile changes are reported regularly to senior members of Credit Risk Management. Detailed portfolio reporting of industry, clients, counterparties and customers; 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, risk committees, senior management and the Board of Directors as appropriate.

Credit risk exposures (audited)

The table below presents the Company'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 IAS 32 'Financial Instruments: Presentation' ("IAS 32"). 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 IAS 32 is not met) and the value of collateral received in respect of financial assets.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Credit risk exposures (audited) (continued)

| | Gross balance sheet exposure ^(a) | Assets captured by market risk | Master netting agreements and other | Cash & security collateral ^(b) | Net exposure after risk mitigants | Net balance sheet exposure held with: | |
|--|---|--------------------------------------|--|---|---|--|--------------------------------|
| | | | | | | JPMorgan Chase undertakings | External counter parties |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2017 | | | | | | | |
| Financial assets: | | | | | | | |
| Cash and balances at central banks | 21,677,066 | — | — | — | 21,677,066 | — | 21,677,066 |
| Loans and advances to banks | 9,812,066 | — | — | — | 9,812,066 | 7,071,710 | 2,740,356 |
| Loans and advances to customers ^(c) | 2,612,322 | — | — | (982,674) | 1,629,648 | — | 1,629,648 |
| Securities purchased under agreements to resell ^(d) | 135,385,611 | — | (11,525,344) | (114,161,493) | 9,698,774 | 1,143,293 | 8,555,481 |
| Securities borrowed ^(d) | 27,072,599 | — | (9,100,106) | (15,846,294) | 2,126,199 | 251,848 | 1,874,351 |
| Financial assets held for trading | 340,258,613 | (107,884,895) | (190,867,129) | (24,340,531) | 17,166,058 | — | 17,166,058 |
| Financial assets designated at fair value through profit or loss | 341,602 | (341,602) | — | — | — | — | — |
| Debtors | 79,646,622 | — | — | — | 79,646,622 | 43,282,339 | 36,364,283 |
| Accrued income | 652,028 | — | — | — | 652,028 | 107,668 | 544,360 |
| Total^(e) | 617,458,529 | (108,226,497) | (211,492,579) | (155,330,992) | 142,408,461 | 51,856,858 | 90,551,603 |

| | Gross balance sheet exposure ^(a) | Assets captured by market risk | Master netting agreements and other | Cash & security collateral ^(b) | Net exposure after risk mitigants | Net balance sheet exposure held with: | |
|--|---|--------------------------------------|--|---|---|--|--------------------------------|
| | | | | | | JPMorgan Chase undertakings | External counter parties |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2016 | | | | | | | |
| Financial assets: | | | | | | | |
| Cash and balances at central banks | 20,597,168 | — | — | — | 20,597,168 | — | 20,597,168 |
| Loans and advances to banks | 6,123,936 | — | — | — | 6,123,936 | 4,277,086 | 1,846,850 |
| Loans and advances to customers ^(c) | 3,100,053 | — | — | (497,148) | 2,602,905 | — | 2,602,905 |
| Securities purchased under agreements to resell ^(d) | 130,416,852 | — | (6,449,414) | (119,614,194) | 4,353,244 | 731,500 | 3,621,744 |
| Securities borrowed ^(d) | 25,831,106 | — | (17,174,407) | (6,518,661) | 2,138,038 | 607,801 | 1,530,237 |
| Financial assets held for trading | 323,045,808 | (89,327,429) | (200,311,833) | (19,626,339) | 13,780,207 | — | 13,780,207 |
| Financial assets designated at fair value through profit or loss | 315,659 | (315,659) | — | — | — | — | — |
| Debtors | 56,473,025 | — | — | — | 56,473,025 | 24,830,586 | 31,642,439 |
| Accrued income | 447,989 | — | — | — | 447,989 | 29,341 | 418,648 |
| Total^(e) | 566,351,596 | (89,643,088) | (223,935,654) | (146,256,342) | 106,516,512 | 30,476,314 | 76,040,198 |

(a) Of the above on-balance sheet assets, \$226,720 million (2016: \$215,545 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.

(b) 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.

(c) The net balance sheet exposure on loans and advances to customers is presented without taking into account credit risk mitigants such as financial guarantees.

(d) 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.

(e) Off balance sheet exposure consists of lending commitments of \$20,455 million (2016: \$15,307 million). Refer to note 27.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Credit risk exposures (audited) (continued)

The Company'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 with investment grade institutions.

Loans and advances to banks

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

Loans and advances to customers

The table below presents the Company's credit exposure and maturity profile to gross loans and advances to customers before any provision for impairment. The ratings scale 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.

| Maturity and ratings profile | 2017 | 2016 |
|---|------------------|------------------|
| | \$'000 | \$'000 |
| Maturity | | |
| 5 years or more | 61,004 | 90,210 |
| 5 years or less but over 1 year | 1,995,490 | 2,790,360 |
| 1 year or less but over 3 months | 597,257 | 165,643 |
| 3 months or less | 59,766 | 56,573 |
| Total | 2,713,517 | 3,102,786 |
| Rating profile | | |
| Investment grade (AAA/Aaa to BBB-/Baa3) | 955,165 | 1,701,998 |
| Sub-investment grade (BB+/Ba1 & below) | 1,758,352 | 1,400,788 |
| Total | 2,713,517 | 3,102,786 |

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.

| Credit risk concentration | 2017 | 2016 |
|-------------------------------|------------------|------------------|
| | \$'000 | \$'000 |
| Geographic region | | |
| United Kingdom | 152,758 | 81,067 |
| Other European | 1,883,726 | 2,522,432 |
| Rest of the world | 677,033 | 499,287 |
| Total | 2,713,517 | 3,102,786 |
| Industry concentration | | |
| Commercial and industrial | 1,416,130 | 1,991,138 |
| Real estate | 511,834 | 726,191 |
| Financial institutions | 522,859 | 83,154 |
| Other | 262,694 | 302,303 |
| Total | 2,713,517 | 3,102,786 |

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Credit risk exposures (audited) (continued)

Loans and advances to customers (continued):

The table below presents the Company's impaired loans.

| | 2017 | 2016 |
|--------------------------|------------------|------------------|
| | \$'000 | \$'000 |
| Impaired loans | | |
| Non-impaired loans | 2,265,214 | 3,073,997 |
| Impaired loans | 318,319 | 26,056 |
| Provision for impairment | 129,984 | 2,733 |
| | 2,713,517 | 3,102,786 |

Securities purchased under agreements to resell and securities borrowed

The Company 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 Company'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 Company 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.

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 Company's financial statements unless the Company 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 Company by JPMorgan Chase Bank N.A..

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 Company 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

The Firm has a country risk management framework for monitoring and assessing how financial, economic, political or other significant developments adversely affect the value of the Firm's exposures related to a particular country or set of countries. The Country Risk Management group actively monitors the various portfolios which may be impacted by these developments to ensure the Firm's and Company's exposures are diversified and that exposure levels are appropriate given the Firm and Company's strategy and risk tolerance relative to a country.

Country risk organisation and management

Country Risk Management is an independent risk management function that assesses, manages and monitors country risk originated across the Firm. The Firmwide Risk Executive for Country Risk reports to the Firm's CRO. The Firm's country risk Management function includes the following activities:

- Establishing policies, procedures and standards consistent with a comprehensive country risk framework
- Assigning sovereign ratings and assessing country risks and establishing risk tolerance relative to a country
- Measuring and monitoring country risk exposure and stress across the Firm
- Managing and approving country limits and reporting trends and limit breaches to senior management
- Developing surveillance tools, such as signalling models and ratings indicators for early identification of potential country risk concerns
- Providing country risk scenario analysis

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Country risk (continued)

Country risk sources and measurement

The Firm and Company are exposed to country risk through their 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's and Company'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 non-linear or index exposures. The use of different measurement approaches or assumptions could affect the amount of reported country exposure.

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

- 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

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's and Company's credit, market, and operational risk governance, rather than through Country Risk Management.

Country risk stress testing

Stress testing is an important component of the Firm's country risk management framework, which aims to estimate and limit losses arising from a country crisis by measuring the impact of adverse asset price movements to a country based on market shocks combined with counterparty specific assumptions. Country Risk Management periodically designs and runs tailored stress scenarios to test vulnerabilities to individual countries, or group of countries, in response to specific or potential market events, sector performance concerns and geopolitical risks.

Country risk reporting

The Company's top five country exposures as of 31 December 2017 are the United Kingdom, Spain, France, Belgium and Germany. The selection of countries represent the Company'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.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Liquidity risk (audited)

Liquidity risk is the risk that the Company will be unable to meet its contractual and contingent financial obligations as they arise 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"), who reports to the Firm's CRO, as part of the independent risk management function, is responsible for Firmwide Liquidity Risk Oversight. Liquidity Risk Oversight's responsibilities include:

- Establishing and monitoring limits, indicators, and thresholds, including liquidity risk appetite tolerances;
- Monitoring internal Firmwide and material legal entity stress tests, and monitoring and reporting regulatory defined liquidity stress testing;
- Approving or escalating for review liquidity stress assumptions;
- Monitoring liquidity positions, balance sheet variances and funding activities; and
- Conducting ad hoc analysis to identify potential emerging liquidity risks.

The Company leverages the Firmwide risk framework.

Liquidity management

Treasury and CIO are 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 and meet contractual and contingent obligations through normal economic cycles as well as during stress events; and
- Manage an 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 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;
- Developing internal liquidity stress testing assumptions;
- Defining and monitoring Firmwide and legal entity-specific liquidity strategies, policies, guidelines, reporting and contingency funding plans;
- Managing liquidity within approved liquidity risk appetite tolerances and limits;
- Managing compliance with regulatory requirements related to funding and liquidity risk; and
- Setting transfer pricing in accordance with underlying liquidity characteristics of balance sheet assets and liabilities as well as certain off-balance sheet items.

The Company is regulated by the PRA and, from 1 October 2015, was 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 Company in relation to estimated net liquidity outflows within a 30 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 2017, the Company 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. The Company is expected to comply with the EU NSFR at a level of 100% two years after the date of entry into force of the proposed regulation, as is permitted.

A regular internal assessment of the liquidity risk management framework is performed which informs the directors of the liquidity risks resulting from business activities in addition to the current and future funding needs of the Company.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Liquidity risk (audited) (continued)

Risk governance and measurement

Specific committees responsible for liquidity governance include the Firmwide Asset Liability Committee ("ALCO"), as well as line of business and regional ALCOs, Treasury and Corporate ("CTC") Risk Committee; and the Company's Directors' Risk Policy Committee ("DRPC") and EMEA Risk Committee.

Internal stress testing

Liquidity stress tests are intended to ensure that the Company has 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 the Company 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 Company's contractual financial obligations are met and take into consideration:

- Varying levels of access to unsecured and secured funding markets;
- Estimated non-contractual and contingent cash 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 currency dimensions and contemplate both market and idiosyncratic stress.

Results of stress tests are considered in the formulation of the Company's funding plan and assessment of its liquidity position.

Liquidity risk stress testing is established at the Firm and material legal entity level. The Company'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.

Contingency funding plan

The Firm's contingency funding plan ("CFP") is approved by the Firmwide ALCO and the DRPC. The Company's addendum to the CFP is approved by the JPMS plc DRPC and the Board. The CFP and the addendum is a compilation of procedures and action plans for managing liquidity through stress events. The CFP and the 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 Company's liquidity position. The CFP identifies the alternative contingent funding and liquidity resources available to the Company in a period of stress.

Funding

The Company's sources of short-term secured funding primarily consist of 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 Company's unsecured and secured funding capacity is sufficient to meet its on and off-balance sheet obligations.

Credit ratings

The Company is rated on a standalone non-guaranteed basis, independent credit ratings agencies Moody's Investors Service, Standard & Poor's and Fitch Ratings have rated the Company as 'A1/P-1', 'A+/A-1' and 'AA-/F1+' respectively. On 1 June 2017, JPMorgan Chase Bank, N.A. terminated its guarantee of the payment of all obligations of the Company, whose credit ratings previously reflected the benefit of this guarantee.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Liquidity risk (audited) (continued)

The table below presents the maturity details of all financial liabilities. Financial liabilities held for trading and financial liabilities designated at fair value through profit and loss have been disclosed at their fair values, consistent with how these financial liabilities are managed. Amounts greater than one year represent undiscounted cash flows. Due to the nature and contractual maturity of all other financial liabilities they are presented at the carrying amount, which is not materially different to the undiscounted cash flow.

| | Less than 1 year | More than 1 year | Total | Less than 1 year | More than 1 year | Total |
|---|---------------------|---------------------|-------------|---------------------|---------------------|-------------|
| | 2017 | 2017 | 2017 | 2016 | 2016 | 2016 |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Securities sold under agreements to repurchase | 74,937,158 | — | 74,937,158 | 61,127,630 | 529,641 | 61,657,271 |
| Securities loaned | 12,550,040 | — | 12,550,040 | 20,133,325 | — | 20,133,325 |
| Financial liabilities held for trading | 308,288,068 | — | 308,288,068 | 293,525,746 | — | 293,525,746 |
| Financial liabilities designated at fair value through profit or loss | 222,283 | 1,242,964 | 1,465,247 | — | — | — |
| Trade creditors | 30,479,035 | — | 30,479,035 | 29,755,510 | — | 29,755,510 |
| Amounts owed to JPMorgan Chase undertakings | 83,225,471 | 41,105,000 | 124,330,471 | 60,000,153 | 39,493,650 | 99,493,803 |
| Other liabilities | 25,271,893 | — | 25,271,893 | 23,844,456 | — | 23,844,456 |
| | 534,973,948 | 42,347,964 | 577,321,912 | 488,386,820 | 40,023,291 | 528,410,111 |

The majority of short term funding transactions by way of repurchase agreements and stock lending have short-dated maturities, typically less than one month. Trade creditors predominantly includes unsettled trades and other liabilities includes cash collateral received. Both have short-dated maturities. Financial liabilities designated at fair value through profit or loss represent a long term margin loan. 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 IFRS 7 'Financial Instruments: Disclosures'.

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 prepayment 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 Market Risk ("FRE") and LOB Chief Risk Officers ("CROs") are responsible for establishing an effective market risk organisation at the Firm level. The FRE and LOB Heads of Market Risk establish the framework to measure, monitor and control market risk within the Firm.

The Market Risk function is scaled and organised according to the amount and complexity of market risk arising from the business activity. Market risk management may be the responsibility of a dedicated Market Risk group or may be performed as part of the broader Risk Management function.

In addition to the Risk Governance framework detailed in the Risk Governance policy, additional senior Market Risk management risk oversight within the Firm is provided via the Firmwide Market Risk Forum and Market Risk Control forum which typically convene monthly.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Market risk (audited) (continued)

Market risk management (continued)

Company specific market risk governance is established in the Company's market risk policy, additional risk oversight is provided through the following committees:

- EMEA Risk Committee ("ERC"): The ERC provides oversight of the risks inherent in the Firm's business conducted or booked into EMEA entities and EMEA branches of ex-EMEA firms. As part of the risk governance the ERC receives information on the Company's headline exposures, Value-at risk ("VaR"), stress, core risks, Single Name Position Risk ("SNPR") exposures, limit breaches and approvals. The ERC, which convenes at least monthly, receives updates from sub-committees and any other items which require escalation.
- UK Market Risk Committee ("UK MRC"): The Company risk profile and market risk related items are reviewed and discussed at the UK MRC, which is a sub-committee of the ERC. The UK MRC convenes monthly and is attended by market risk representatives from each LOB, with invitation extended to other risk related groups as appropriate. Items covered include risk analysis on topical market events that could result in material losses for the Company, and significant items related to market risk methodology matters e.g. stress testing methodology changes. LOB representatives provide risk updates in relation to significant changes to legal entity specific risk profiles.

Market risk measurement

Multiple measures are used to capture market risk and set limits as appropriate. These measures include, but are not limited to, VaR, stress testing, non-statistical measures, profit & loss ("P&L") drawdowns/loss advisories and SNPR. As the appropriate set of risk measures utilised for a given business activity depends on business mandate, risk horizon, materiality, market volatility and other factors, not all measures are used in all cases.

VaR

The Firm utilises VaR, a statistical risk measure, to estimate the potential loss from adverse market moves in the current market environment. The Firm has a single VaR framework used as a basis for calculating Risk Management VaR and Regulatory VaR. The Company utilises the Firm's VaR methodology and considers local regulations and processes on the application of these Firmwide standards on VaR monitoring and calculation.

The framework is employed across the Firm (inclusive of the Company) using historical simulation based on data for the previous 12 months. The framework's approach assumes that historical changes in market values are representative of the distribution of potential outcomes in the immediate future. The Firm believes the use of Risk Management VaR provides a stable measure of VaR that closely aligns to the day-to-day risk management decisions made by the lines of business, and provides the necessary and appropriate information needed to respond to risk events on a daily basis.

Risk Management VaR assumes a one-day holding period and an expected tail-loss methodology which approximates a 95% confidence level. VaR provides a consistent framework to measure risk profiles and levels of diversification across product types and is used for aggregating risks across businesses and monitoring limits. The Company's VaR results are reported to the Company's senior management, Chief Executive Officer ("CEO"), CRO, Market Risk Officer ("MRO") and at the relevant risk governance committees.

The Firm's VaR model calculations are periodically evaluated and enhanced in response to changes in the composition of the Firm's portfolios, changes in market conditions, improvements in the Firm's modelling techniques and other factors. Such changes may also affect historical comparisons of VaR results. Model changes undergo a review and approval process by the Model Review Group prior to implementation into the operating environment. The Firm's model governance, enhancements and the results from model review are cascaded down to the Company level.

The Firm calculates separately a daily aggregated VaR in accordance with regulatory rules ("Regulatory VaR"), which is used to derive the Firm's Regulatory VaR-based capital requirements under Basel III. This Regulatory VaR model framework currently assumes a ten business-day holding period and an expected tail loss methodology which approximates a 99% confidence level. Regulatory VaR is applied to "covered" positions as defined by Basel III, which may be different than the positions included in the Firm's Risk Management VaR.

Monitoring of Regulatory VaR was introduced for the Company as part of its application to utilise VaR for calculation of model based regulatory capital under the Internal Models Approach. As with the Firmwide approach (outlined above), the Company specific regulatory VaR metric, VaR Based Measure ("VBM"), assumes a 10 day holding period under a 99% confidence interval. In addition to the Regulatory VaR, which models the impact from General Risk, VBM further incorporates impact from Specific Risk.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Market risk (audited) (continued)

VaR (continued)

While VBM models the VaR based impact from adverse market moves under current market environment, monitoring of impacts under stressed markets are monitored as Stressed VBM ("SVBM"). Monitoring of these measures is achieved through specific risk reports in daily/weekly distributions.

Stress testing

Along with VaR, stress testing is an important tool in measuring and controlling risk. While VaR reflects the risk of loss due to adverse changes in markets using recent historical market behaviour as an indicator of losses, stress testing is intended to capture the Firm's and Company's exposure to unlikely but plausible events in abnormal markets. Both the Firm and the Company run 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.

The Company uses a number of standard scenarios defined at the Firm level that capture different risk factors across asset classes including geographical factors, specific idiosyncratic factors and extreme tail events. The stress testing framework calculates multiple magnitudes of potential stress for both market rallies and market sell-offs for each risk factor and combines them in multiple ways to capture different market scenarios. For example, certain scenarios assess the potential loss arising from current exposures held by the Company due to a broad sell off in bond markets or an extreme widening in corporate credit spreads. The flexibility of the stress testing framework allows risk managers to construct new, specific scenarios that can be used to form decisions about future possible stress events. The stress testing framework is known as Firmwide Stress Infrastructure ("FSI"), established at the Firmwide level, and is a risk management tool that simulates changes to the prices of trading assets across a range of economic and market scenarios. It is used to measure the Company's vulnerability to losses under a range of stressed but plausible market environments and to understand the risk factors and assets responsible for those losses. In addition to the FSI scenarios, the Company defines bespoke scenarios which are designed to severely stress the Company's specific vulnerabilities and concentrations.

Non-statistical risk measures

Non-statistical risk measures include sensitivities to variables used to value positions, such as credit spread sensitivities, interest rate basis point values and market values. These measures provide granular information on the Firm's market risk exposure. They are aggregated by LOB and by risk type, and are also used for monitoring internal market risk limits.

P&L Drawdowns/ Loss advisories

P&L drawdowns and loss advisories are tools used to highlight trading losses above certain levels of risk tolerance. P&L drawdowns are defined as the decline in net profit and loss since the year-to-date peak revenue level.

SNPR

SNPR captures exposures to credit families (and entities within credit families) or standalone issuer/issuers families not part of credit families, assuming default of the issuer with zero recovery.

The Company follows a similar approach to the Firm's SNPR framework, with specific governance and approval aspects recorded in the Company's specific procedure documents, reviewed annually by the Company's Board. Limit approvals for SNPR limit changes in the Company are provided by the SNPR Lead Executive and other pre-designated Company Market Risk senior management.

Risk monitoring and control

Market risk is controlled primarily through a series of limits, established at both the Firm and the Company level, set in the context of the market environment and business strategy. In setting limits, the Company takes into consideration factors such as market volatility, product liquidity and accommodation of client business and management experience. The Company maintains different level of limits. Company level limits include VaR and Stress limits, which are under the governance and ownership of the Company's Board. As per policy/procedure guidance, the Company's Board can delegate its approval authority to the Company's CEO, CRO and MRO. Similarly, LOB limits, maintained at the Company, are established across VaR, Stress and Non-statistical measures and have pre-designated Business Heads and LOB Market Risk leads, as signatories.

Market Risk reviews Company level market risk limits at least semi-annually. Limit reviews appropriately consider the underlying trading, investing and hedging strategies of the business, along with the limit utilisation. If peak utilisation is less than 50% during a six month lookback period, the limit is either reduced or rationale for maintaining the limit at that level is documented.

Additional controls exist at the Firm level e.g. Authorised Instruments and LOB Pre-trade Transaction Guidelines. While these controls are operational at the Firm level, monitoring of activity and control breaches allows transparency at the Company level.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Market risk (audited) (continued)

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

| | 2017 | | | 2016 | | | At 31 December | |
|----------|--------|--------|--------------------|--------|--------|--------------------|----------------|--------|
| | Avg. | Min | Max ^(a) | Avg. | Min | Max ^(b) | 2017 | 2016 |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| 95 % VaR | 17,033 | 10,627 | 49,406 | 18,958 | 14,675 | 45,782 | 17,876 | 17,826 |

^(a) Maximum VaR (\$49.4 million) for 2017 was driven by a failed risk transfer process within the Global Commodities business which was resolved the next day. There was no breach at Firmwide level due to offsetting exposure within another JPMorgan Chase undertaking.

^(b) Maximum VaR (\$45.7 million) for 2016 was driven by a transaction booked within JPMS plc with offsetting risk booked in another JPMorgan Chase legal entity resulting in overall zero net risk across the Firm. Subsequently, JPMS plc booked an inter-entity hedge to bring JPMS plc's VaR back to normal utilisation levels.

The Company's market risk profile is net long risk across fixed income assets, commodities, local currency/short U.S. dollar foreign exchange markets and equity exposure. 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 the Company is subject to, the worst case stress loss during 2017 was primarily driven by the Credit Crisis scenario which models the extent and severity across a broad range of asset classes.

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 Company's assets or liabilities or future results.

The Company does not have material risks associated with foreign investments in subsidiaries. The Company 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 Company. 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 Company 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 ("IRR") in the Banking Book ("IRRBB") and is defined as Interest Rate Risk resulting from the Company'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.

Oversight and governance

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

- Reviews the IRR Management policy;
- Reviews the IRR profile of the Firm and compliance with IRR limits;
- Provides Governance on legal entity related exposures; and
- Reviews significant changes to IRR models and/or model assumptions.

IRR exposures, significant models and/or assumptions including the changes are reviewed by ALCO. 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.

In addition, oversight of structural interest rate risk is managed through IRR Management, a dedicated risk function reporting to the CTC CRO.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Structural interest rate risk (continued)

Oversight and governance (continued)

IRR Management is responsible for, but not limited to:

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

The Company leverages the Firmwide risk framework.

Risk Identification and Measurement

Treasury and Chief Investment Office ("T/CIO") manages IRRBB exposure on behalf of the Firm by identifying, measuring, modelling and monitoring IRR across the Firm's balance sheet. T/CIO identifies and understands material balance sheet impacts of new initiatives and products and executes market transactions to manage IRR through T/CIO investment portfolio's positions. Execution by T/CIO will be based on parameters established by senior management, per the T/CIO Investment Policy. Lines of businesses are responsible for developing and monitoring the appropriateness of LOB specific IRR modelling assumptions.

Measures to manage IRR include:

- Earnings-at-risk: Primary metric used to gauge the firm's shorter term IRR exposure is Earnings at Risk (EaR), or the sensitivity of pre-tax income to changes in interest rates over a rolling 12 months compared to a base scenario; 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.

Each line of business and functions within the Company are accountable for managing its compliance risk. The Firm's Compliance Organisation ("Compliance"), which is independent of the line of business, works closely with senior management to provide independent review, monitoring and oversight of business operations with a focus on compliance with 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.

Governance and oversight

Compliance is led by the Firms' Chief Compliance Officer ("CCO") who reports 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. At a Company level, in the UK the regional CCO is a member of the UK Management Committee (restructured from January 2018 to form the EMEA Management Committee) and the UK Audit & Compliance Committee.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Compliance risk (continued)

Governance and oversight (continued)

The Firm has in place a Code of Conduct (the "Code") which applies to the Company. 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

The risk that any action or inaction by an employee of the Company could lead to unfair client/customer outcome, compromise the Company's reputation, impact the integrity of the markets in which the Company operates, or reflect poorly on the Firm's culture.

Overview

Each line of business or function 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 Firm Board-level Committee with primary oversight for the Firm's culture and conduct programs. The Firm's Audit Committee is responsible for reviewing the program established by management to monitor 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. Finally, the Culture & Conduct Risk Committee provides oversight of certain culture and conduct risk initiatives at the Firm.

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. Businesses undertake annual Risk and Control Self-Assessment ("RCSA"); and, as part of these reviews, 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. Each LOB and designated corporate function completes an assessment of conduct risk quarterly, reviews metrics and issues which may involve conduct risk, and provides business conduct training as appropriate.

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 Company's approach mirrors the Firmwide approach.

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

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Legal risk

Legal risk is the risk of loss primarily caused by the actual or alleged failure to meet legal obligations that arise from the rule of law in jurisdictions in which the Firm and the Company operates, agreements with clients and customers, and products and services offered by the Company and the Firm.

Overview

The global Legal function ("Legal") provides legal services and advice to the Company and the Firm. Legal is responsible for:

- Managing actual and potential litigation and enforcement matters, including internal reviews and investigations related to such matters;
- Advising on products and services, including contract negotiation and documentation;
- Advising on offering and marketing documents and new business initiatives;
- Managing dispute resolution;
- Interpreting existing laws, rules and regulations, and advising on changes thereto;
- Advising on advocacy in connection with contemplated and proposed laws, rules and regulations; and
- Providing legal advice to the LOBs, inclusive of LOB aligned Operations, Technology and Oversight & Controls (the "first line of defense"), Risk Management and Compliance (the "second line of defense"), and the Internal Audit function (the "third line of defense").

Legal selects, engages and manages outside counsel on all matters in which outside counsel is engaged. In addition, Legal advises the Firm's Conflicts Office which reviews the Firm's wholesale transactions that may have the potential to create conflicts of interest for the Firm.

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 LOB's, 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.

The Firm's General Counsel and other members of Legal report on significant legal matters at each meeting of the Firm's Board of Directors, at least quarterly to the Audit Committee, and periodically to the DRPC.

Legal serves on and advises various committees (including new business initiative and reputation risk committees) and the Firm and Company's businesses to protect the Firm and Company's reputation beyond any particular legal requirements.

Model risk management

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

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

Risk management

A dedicated independent Model Risk function, Model Risk Governance and Review ("MRGR"), defines and governs the Firm's model risk management policy. MRGR reports to the Firm's CRO. Under the Firm's model risk management policy, the Model Risk function reviews and approves new models, as well as material changes to existing models, prior to implementation in the operating environment.

Model risks are owned by the users of the models within the various businesses and functions in the Firm based on the specific purposes of such models. Users and developers of models are responsible for developing, implementing and testing their models, as well as referring model to the Model Risk function for review and approval. Once models have been approved, model users and developers are responsible for maintaining a robust operating environment, and must monitor and evaluate the performance of the models on an ongoing basis.

The Company's approach mirrors the Firmwide approach.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Risk management (continued)

Operational risk

Operational risk is the risk associated with inadequate or failed internal processes, people and systems, or from external events; operational risk includes cybersecurity risk, business and technology resiliency risk, payment fraud risk, and third-party outsourcing risk.

Operational risk is inherent in the Company'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 Company and the Firm. The goal is to keep operational risk at appropriate levels in light of the Company's financial position, 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 has four main components: Governance, Risk Identification and Assessment, Measurement, and Monitoring and Reporting. The Company's approach mirrors the Firmwide approach.

Operational risk can manifest itself in various ways. Risks such as Compliance risk, Conduct risk, Legal Risk and Estimations 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

Cybersecurity risk is an important, continuous and evolving focus for the Firm and Company. The Firm and Company devotes significant resources to protecting and continuing to improve the security of the Firm and Company's computer systems, software, networks and other technology assets. These security efforts are intended to protect against, among other things, cybersecurity attacks by unauthorised 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 cyberdefense 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 operating environment, enhance defenses and improve resiliency against cybersecurity threats. The Firm actively participates in discussions of cybersecurity risks with law enforcement, government officials, peer and industry groups, and has significantly increased efforts to educate employees and clients on the topic.

Third parties with which the Company does business or that facilitate the Company's business activities (e.g. vendors, exchanges, clearing houses, central depositories, and financial intermediaries) could also be sources of cybersecurity risk to the Company. 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 Company or result in lost or compromised information of the Company or its clients. Clients can also be sources of cybersecurity risk to the Company, particularly when their activities and systems are beyond the Company's own security and control systems. As a result, the Company engages in regular and ongoing discussions with certain vendors and clients regarding cybersecurity risks and opportunities to improve security. 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 Company'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 and ongoing efforts to improve security, as well as its efforts regarding significant cybersecurity events.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Reputation risk

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

Risk management

Maintaining the Company'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. Because the types of events that could harm the Firm's reputation are so varied across the Firm's LOB, 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. Any matter giving rise to reputation risk that originates in a corporate function is required to be escalated directly to Firmwide Reputation Risk Governance ("FRRG") or to the relevant Risk Committee. 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 Company's accounting policies and use of estimates are integral to understanding its reported results. The Company's most complex accounting estimates require management's judgement to ascertain the appropriate carrying value of assets and liabilities. The Firm and the Company 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 Company'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 Company believes its estimates for determining the carrying value of its assets and liabilities are appropriate. A description of the Company's critical accounting estimates involving significant judgements is set out in note 4 to the financial statements.

Key corporate events

On 19 April 2017, the Company paid 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, during the year management undertook certain steps to simplify the UK legal entity structure. Two intermediary holding companies between JPMorgan Chase Bank, N.A. and the Company were eliminated and the share ownership structure of the Company was simplified as follows:

- On 14 June 2017, the Company redeemed 3,648 preferred ordinary shares of \$10,000 each and 7,000 preference shares of \$10,000 each comprising the entire shareholding of J.P. Morgan Capital Financing Limited; as a result the Company is wholly owned by J.P. Morgan Capital Holdings Limited.
- On 1 July 2017, J.P. Morgan Limited transferred its banking employees and related assets and liabilities to the Company for a total consideration of \$107 million.
- Through a series of corporate steps that occurred instantaneously on 11 September 2017, 31,000 preferred ordinary shares and 673,685 preference shares of \$10,000 each were converted into 205,081 ordinary shares of \$10,000 each and 499,604 deferred shares of \$10,000 each. The deferred shares had no voting rights or any rights to dividends or distributions and were cancelled immediately, resulting in recognition of \$4,996 million in capital redemption reserve.

Non-financial reporting

An overview of the environment and social, human rights, employee, anti-bribery and anti-corruption policy aspects of non-financial reporting is provided below. A detailed description of the policies and processes adopted by the Firm may be found on the JPMorgan Chase & Co. website.

Environment and social policy

The Firm recognises that business decisions have the potential to impact surrounding communities and the environment, and that it has a leadership role to play in creating solutions that protect the environment and grow the economy. As a global financial institution, the Firm aims to leverage their expertise and resources to help clients manage environmental and social risks and capitalise on the opportunities created by the transition to a more sustainable global economy. The Firm works to promote sustainability in their operations, including their corporate buildings, retail branches and data centers globally.

The Firm has designed policies so that environmental and human rights impacts are identified early, are carefully evaluated and managed appropriately. The Firm's Environment and Social Policy Framework provides details on how they integrate considerations of potential environmental and social impacts into corporate lending, advisory and capital markets transactions, along with the broader approach to key issues such as climate change, biodiversity and human rights.

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

Non-financial reporting (continued)

Environment and social policy (continued)

Within the Firms' global real estate portfolio, the strategy is focused on reducing energy use and greenhouse gas ("GHG") emissions. In 2017, the Firm established a goal to source renewable power for 100% of their global energy needs by 2020. The Firm strives to purchase sustainably certified paper and dispose of key waste streams in a responsible manner.

The Firm discloses relevant data and metrics on GHG emissions, energy consumption, paper and waste at the Firm-wide level in their Environmental, Social, and Governance Report, which is published annually and available at www.jpmorganchase.com/esg.

Human Rights

The Firm supports fundamental principles of human rights across all lines of business and in each region of the world in which they operate. The Firm believes it is the role of government in every country to protect human rights, and that the Firm has a role to play in promoting respect for human rights.

The Firms' respect for the protection and preservation of human rights is guided by the principles set forth in the United Nations Universal Declaration of Human Rights. Further, the Firm acknowledges the Guiding Principles on Business and Human Rights (also known as the Guiding Principles) as the recognised framework for corporations to respect human rights in their own operations and through their business relationships. The Firms' Human Rights Statement outlines their commitment to support human rights. In addition, the Firm-wide Code of Conduct communicates the expectation for conducting business ethically and in compliance with the law in every country in which they operate.

To view the Firms' Human Rights Statement, including the U.K. Modern Slavery Act Transparency Statement, please visit <https://www.jpmorganchase.com/corporate/About-JPMC/ab-human-rights.htm>.

Corporate employee policy

It is the policy of the Company 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, sexual orientation or any other basis. 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 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 Company as a whole. Communication with all employees continues through the intranet and other forums.

The Firm operates an employee share scheme for all employees, including those of the Company, to acquire a proprietary and vested interest in the growth and performance of the Firm.

Anti-bribery and Anti-corruption

The Firm has zero tolerance for bribery and corruption, and is deeply committed to participating in international efforts to combat corruption. The Firm has established an Anti-Corruption Policy that seeks to promote ethical business practices and requires compliance with applicable anti-corruption laws and regulation. This Anti-Corruption Policy ("the Policy") is referenced in the Firm's publicly available Code of Conduct, and is applicable to the Company.

The Firm has identified the key areas of corruption-related risk as including:

- the giving or receiving of anything of value
- third parties acting on the Firm's behalf; and
- transactions entered into by the Firm or by funds or accounts controlled or managed by the Firm

Independent auditors' report to the members of J.P. Morgan Securities plc

Report on the audit of the financial statements

Opinion

In our opinion, J.P. Morgan Securities plc's financial statements:

- give a true and fair view of the state of the company's affairs as at 31 December 2017 and of its profit and cash flows for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and
- have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements, included within the Annual Report, which comprise: the balance sheet as at 31 December 2017; the income statement, the statement of comprehensive income, the statement of cash flows, the statement of changes in equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Our opinion is consistent with our reporting to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

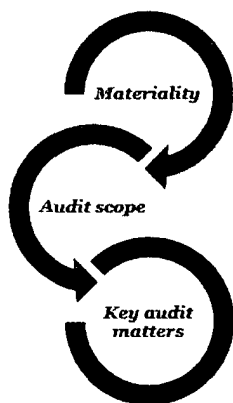
We remained independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided to the company.

Other than those disclosed in note 10 to the financial statements, we have provided no non-audit services to the company in the period from 1 January 2017 to 31 December 2017.

Our audit approach

Overview



- Overall materiality: \$401 million (2016: \$343 million), based on 1% of regulatory capital resources as required by the Prudential Regulatory Authority.
- We tailored the scope of our audit to ensure that we performed sufficient work to be able to give an opinion on the financial statements as a whole. Our scoping considered all account balances and was performed to ensure that specific and appropriate audit procedures were performed over material balances.
- Due to some business process and internal controls being performed in other geographical locations, PwC network firms were involved in the engagement.
- Valuation of complex financial instruments held at fair value.
- Cash and securities reconciliation system migration.

Independent auditors' report to the members of J.P. Morgan Securities plc

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain.

We gained an understanding of the legal and regulatory framework applicable to the company and the industry in which it operates, and considered the risk of acts by the company which were contrary to applicable laws and regulations, including fraud. We designed audit procedures to respond to the risk, recognising that the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. We focused on laws and regulations that could give rise to a material misstatement in the company's financial statements, including, but not limited to, Companies Act 2006, Pensions legislation, UK tax legislation, the Prudential Regulation Authority's regulations and Financial Conduct Authority's Client Asset Sourcebook. Our tests included, but were not limited to, review of the financial statement disclosures to underlying supporting documentation, review of correspondence with the regulators, enquiries of management, review of significant components auditors' work and review of internal audit reports in so far as they related to the financial statements. There are inherent limitations in the audit procedures described above and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we would become aware of it.

We did not identify any key audit matters relating to irregularities, including fraud. As in all of our audits we also addressed the risk of management override of internal controls, including testing journals and evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud.

Independent auditors' report to the members of J.P. Morgan Securities plc

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. This is not a complete list of all risks identified by our audit.

| Key audit matter | How our audit addressed the key audit matter |
|---|--|
| <p><i>Valuation of complex financial instruments held at fair value</i></p> <p>The fair value of certain financial instruments is determined using valuation methods that involve a varying degree of judgement. In exercising this judgement the directors determine the most appropriate assumptions and valuation methodologies.</p> <p>The valuation of complex financial instruments can have greater estimation uncertainty due to the lack of observable market prices for these instruments.</p> <p>Within this population of financial instruments we observed the most significant judgements relate to equity derivatives. These products are non-standard and often require more judgemental valuation methodologies and market information that is not readily available.</p> <p>Refer to Note 4 and Note 28 to the financial statements for further details of fair value measurement of financial instruments as a critical accounting estimate and judgement.</p> | <p>We tested the design and operating effectiveness of the key controls supporting the valuation of financial instruments.</p> <ul style="list-style-type: none">• Assessed the bank's standardised approach documents for independent valuation by comparing them to industry practice;• Inspected documentation of the independent price verification controls, independently corroborated the market inputs and assessed the pricing sources used;• Engaged our valuation experts to review model validation and approval controls; and• Evaluated controls over data feeds and market information. <p>Our substantive procedures included the following:</p> <ul style="list-style-type: none">• Analysed the population of financial instruments to identify those that have a heightened risk of material misstatement;• Utilised our valuation experts to re-price a sample of instruments using our models and pricing information from independent sources where possible. Any differences were assessed to confirm the valuation was within a reasonable range;• Recalculated adjustments made to the standard model results; and• Examined collateral disputes, significant gains or losses on disposals and other events which could provide evidence about the appropriateness of the valuations. <p>The results and conclusions of the testing were sufficient to confirm the appropriateness of the valuation of financial instruments within the financial statements.</p> |

Independent auditors' report to the members of J.P. Morgan Securities plc

Key audit matters (continued)

| <i>Key audit matter</i> | <i>How our audit addressed the key audit matter</i> |
|---|--|
| <p>Cash and securities reconciliation system migration</p> <p>During the year JPMorgan Chase implemented a new reconciliation system that matches transactions and reconciles positions for cash and securities with external agent banks and custodians.</p> <p>The matching and reconciliation of records between JPMorgan ledgers with corresponding third party statements for cash and securities transactions forms an important aspect of our audit.</p> <p>Accordingly, the migration of the reconciliation processes to a new system formed a key area of focus for this year's audit.</p> <p>The focus of our audit work was to obtain appropriate assurance over the design and operating effectiveness of the controls over reconciliations of cash and security transactions.</p> | <p>We focused on the following controls in the new reconciliation system:</p> <ul style="list-style-type: none"> • Tested IT General Controls over the new cash and securities reconciliation system to assess whether they are designed and operated effectively, specifically focusing on the review of change management, user access management and IT operations; • Assessed the configuration of a sample of the reconciliation matching rules in the new system to assess whether they had been appropriately set up; • Tested key automated controls embedded within the new system, to assess whether they are designed and operating effectively; <p>Additionally we performed the following substantive testing over the migration:</p> <ul style="list-style-type: none"> • Tested the completeness and accuracy of a sample of open cash and security breaks that were transferred from the legacy reconciliation system to the new reconciliation system at the date of migration; and • Understood and assessed the impact of post implementation issues. <p>The work performed and evidence obtained was sufficient for us to support the design and operating effectiveness assessment of the cash and security reconciliations.</p> |

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the company, the accounting processes and controls, and the industry in which it operates.

We first established an end-to-end picture of the key processes that supported material balances, classes of transactions and disclosures within the company's financial statements. We subdivided the account balances into different businesses to ensure that the audit procedures performed were specific and appropriate to the nature of the balance and underlying business.

We then determined the type of work that needed to be performed by us in the UK, or from other PwC network firms operating under our instruction. This reflects that certain operational processes which are critical to financial reporting are undertaken outside the UK. Where the work was performed by other PwC network firms, we determined the level of involvement we needed to have in their audit work to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the financial statements as a whole.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Independent auditors' report to the members of J.P. Morgan Securities plc

Materiality (continued)

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

| | |
|--|---|
| Overall materiality | \$401 million (2016: \$343 million). |
| How we determined it | 1% of regulatory capital resources as defined by the Prudential Regulatory Authority. |
| Rationale for benchmark applied | Given that the company is a wholly owned subsidiary of JPMorgan Chase & Co. group (the "Firm") and is a regulated bank entity, we considered the key users of its financial statements to be the Firm, regulators and creditors. The Firm run their business on a global basis and hence the profitability of individual subsidiaries on a standalone basis is not the primary, or sole, driver of business decision making in the context of the Firm's enterprise level objectives and strategy. The use of regulatory capital resources as a materiality benchmark is appropriate as it reflects the key area of focus of these stakeholders, who are focused on whether the company has maintained sufficient capital to meet minimum regulatory requirement, fulfil its future market obligations, and absorb any future losses when it arises. Capital resource is deemed as a good indicator of the company's balance sheet strength and liquidity position. |

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above \$20 million (2016: \$17 million) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which ISAs (UK) require us to report to you when:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the company's ability to continue as a going concern.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, ISAs (UK) require us also to report certain opinions and matters as described below.

Independent auditors' report to the members of J.P. Morgan Securities plc

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 December 2017 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

In light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report.

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Directors' Responsibilities Statement set out on page 28, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the 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.

Independent auditors' report to the members of J.P. Morgan Securities plc

Other required reporting

Companies Act 2006 exception reporting

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 company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the financial statements are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the audit committee, we were appointed by the directors on 1 May 1992 to audit the financial statements for the year ended 31 December 1992 and subsequent financial periods. The period of total uninterrupted engagement is 26 years, covering the years ended 31 December 1992 to 31 December 2017. The company became a credit institution in 2011, and hence is considered to be a European Union public-interest entity from 2011 onwards.

Duncan McNab (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
24 April 2018

J.P. MORGAN SECURITIES PLC

Income statement

| Year ended 31 December | | 2017 | 2016 |
|--|------|------------------|------------------|
| | Note | \$'000 | \$'000 |
| Interest and similar income | | 3,969,568 | 2,553,440 |
| Interest expense and similar charges | | (3,193,607) | (1,961,858) |
| Net interest income | 7 | 775,961 | 591,582 |
| Fee and commission income | | 2,863,023 | 2,516,922 |
| Fee and commission expense | | (718,748) | (848,261) |
| Trading profit | | 4,489,978 | 4,142,970 |
| Dividend income | | — | 600,000 |
| Total operating income | | 7,410,214 | 7,003,213 |
| Administrative expenses | | (3,661,928) | (2,897,111) |
| Impairment charge | 8 | (147,477) | (117,359) |
| Depreciation | | (1,760) | (1,290) |
| Profit on ordinary activities before taxation | 10 | 3,599,049 | 3,987,453 |
| Tax on profit on ordinary activities | 11 | (963,590) | (841,809) |
| Profit for the financial year | | 2,635,459 | 3,145,644 |

The profit for the financial year resulted from continuing operations.

Statement of comprehensive income

| Year ended 31 December | | 2017 | 2016 |
|--|------|------------------|------------------|
| | Note | \$'000 | \$'000 |
| Profit for the financial year | | 2,635,459 | 3,145,644 |
| Other comprehensive income: items that will not be reclassified to profit or loss | | | |
| Actuarial gain/(loss) on pension schemes | 30 | 31,871 | (74,362) |
| Tax effect of movement in pension reserve | 12 | (11,349) | 18,908 |
| Total comprehensive income for the year | | 2,655,981 | 3,090,190 |

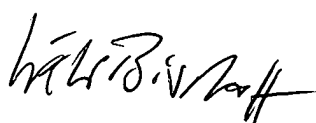
The notes on pages 45 - 83 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Balance sheet

| 31 December | | 2017 | 2016 |
|---|------|--------------------|--------------------|
| | Note | \$'000 | \$'000 |
| Assets | | | |
| Cash and balances at central banks | | 21,677,066 | 20,597,168 |
| Loans and advances to banks | 13 | 9,812,066 | 6,123,936 |
| Loans and advances to customers | 14 | 2,612,322 | 3,100,053 |
| Securities purchased under agreements to resell | 15 | 135,385,611 | 130,416,852 |
| Securities borrowed | 15 | 27,072,599 | 25,831,106 |
| Financial assets held for trading | 16 | 340,258,613 | 323,045,808 |
| Financial assets designated at fair value through profit or loss | 17 | 341,602 | 315,659 |
| Debtors | 18 | 79,646,622 | 56,473,025 |
| Other assets | 19 | 762,089 | 584,231 |
| Investments in JPMorgan Chase undertakings | 20 | 3,341,207 | 3,341,207 |
| Tangible fixed assets | | 4,938 | 3,582 |
| Total assets | | 620,914,735 | 569,832,627 |
| Liabilities | | | |
| Securities sold under agreements to repurchase | 15 | 74,937,158 | 61,657,271 |
| Securities loaned | 15 | 12,550,040 | 20,133,325 |
| Financial liabilities held for trading | 22 | 308,288,068 | 293,525,746 |
| Financial liabilities designated at fair value through profit or loss | | 1,465,247 | — |
| Trade creditors | 23 | 30,479,035 | 29,755,510 |
| Amounts owed to JPMorgan Chase undertakings | | 124,330,471 | 99,493,803 |
| Other liabilities | 23 | 27,350,196 | 25,819,149 |
| Total liabilities | | 579,400,215 | 530,384,804 |
| Equity | | | |
| Called-up share capital | 24 | 12,443,530 | 17,546,050 |
| Share premium account | | 9,950,724 | 9,950,724 |
| Capital redemption reserve | | 4,996,040 | — |
| Other reserves | | 1,701,590 | 1,797,872 |
| Retained earnings | | 12,422,636 | 10,153,177 |
| Total equity | | 41,514,520 | 39,447,823 |
| Total liabilities and equity funds | | 620,914,735 | 569,832,627 |

Approved and authorised for issue by the Board of Directors on 23 April 2018 and signed on its behalf by:



Sir Winfried Bischoff
Chairman & Non-Executive Director



Elena Korablina
Director & Chief Financial Officer

24 April 2018

The notes on pages 45 - 83 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Statement of changes in equity

| | Note | Called-up share capital | Share premium account | Capital contribution reserve | Capital redemption reserve | Pension reserve | Other reserves | Retained earnings | Total equity |
|---|------|-------------------------------|-----------------------------|------------------------------------|----------------------------------|--------------------|-------------------|----------------------|-------------------|
| | | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Balance as at 1 January 2016 | | 17,546,050 | 9,950,724 | 1,588,615 | — | 9,875 | 233,011 | 8,057,533 | 37,385,808 |
| Profit for the financial year | | — | — | — | — | — | — | 3,145,644 | 3,145,644 |
| Other comprehensive income for the year: | | | | | | | | | |
| Actuarial loss on pension schemes | 30 | — | — | — | — | (74,362) | — | — | (74,362) |
| Tax effect on movement in pension reserve | | — | — | — | — | 18,908 | — | — | 18,908 |
| Total comprehensive income for the year | | — | — | — | — | (55,454) | — | 3,145,644 | 3,090,190 |
| Dividends paid | 25 | — | — | — | — | — | — | (1,050,000) | (1,050,000) |
| Tax effect on share based payment awards | | — | — | — | — | — | 17,677 | — | 17,677 |
| Movement in other reserves | | — | — | — | — | — | 4,148 | — | 4,148 |
| Balance as at 31 December 2016 | | 17,546,050 | 9,950,724 | 1,588,615 | — | (45,579) | 254,836 | 10,153,177 | 39,447,823 |
| Profit for the financial year | | — | — | — | — | — | — | 2,635,459 | 2,635,459 |
| Other comprehensive income for the year: | | | | | | | | | |
| Actuarial gain on pension schemes | 30 | — | — | — | — | 31,871 | — | — | 31,871 |
| Tax effect on movement in pension reserve | | — | — | — | — | (11,349) | — | — | (11,349) |
| Total comprehensive income for the year | | — | — | — | — | 20,522 | — | 2,635,459 | 2,655,981 |
| Dividends paid | 25 | — | — | — | — | — | — | (366,000) | (366,000) |
| Share redemption | 24 | (106,480) | — | — | — | — | — | — | (106,480) |
| Share conversion | 24 | (4,996,040) | — | — | 4,996,040 | — | — | — | — |
| Movement in other reserves | | — | — | — | — | — | (116,804) | — | (116,804) |
| Balance as at 31 December 2017 | | 12,443,530 | 9,950,724 | 1,588,615 | 4,996,040 | (25,057) | 138,032 | 12,422,636 | 41,514,520 |

The notes on pages 45 - 83 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Statement of cash flows

| Year ended 31 December | | 2017 | 2016 |
|---|-------|---------------------|-------------------|
| | Notes | \$'000 | \$'000 |
| Cash flows from operating activities | | | |
| Cash (used in)/generated from operations | 26 | (20,915,074) | 3,464,344 |
| Income taxes paid | | (759,644) | (339,504) |
| Net cash (used in)/generated from operating activities | | (21,674,718) | 3,124,840 |
| Cash flow used in investing activities | | | |
| Purchase and disposals of tangible fixed assets | | (3,116) | (2,735) |
| Disposal of investments in JPMorgan Chase undertakings | | — | 517 |
| Net cash used in investing activities | | (3,116) | (2,218) |
| Cash flow from financing activities | | | |
| Redemption of share capital | 24 | (106,480) | — |
| Change in amounts owed to JPMorgan Chase undertakings | | 24,836,668 | 20,853,495 |
| Dividends paid | 25 | (366,000) | (1,050,000) |
| Net cash generated from financing activities | | 24,364,188 | 19,803,495 |
| Net increase in cash and cash equivalents | | 2,686,354 | 22,926,117 |
| Cash and cash equivalents at the beginning of the year | | 26,721,104 | 4,739,077 |
| Exchange gains/(losses) on cash and cash equivalents | | 2,081,674 | (944,090) |
| Cash and cash equivalents at the end of the year | | 31,489,132 | 26,721,104 |
| Cash and cash equivalents consist of: | | | |
| Cash and balances at central banks | | 21,677,066 | 20,597,168 |
| Loans and advances to banks, due within three months or less | | 9,812,066 | 6,123,936 |
| Cash and cash equivalents | | 31,489,132 | 26,721,104 |

The notes on pages 45 - 83 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements

1. General information

The Company is a public limited company and is incorporated and domiciled in England and Wales. The address of its registered office is 25 Bank Street, Canary Wharf, London, E14 5JP, England. The Company's immediate parent undertaking is J.P. Morgan Capital Holdings Limited, which is also the parent undertaking of the smallest group in which the Company's results are consolidated. The Company's ultimate parent undertaking and controlling party is JPMorgan Chase & Co. ("JPMorgan Chase" or the "Firm"), which is incorporated in the state of Delaware in the United States of America. JPMorgan Chase & Co. is also the parent undertaking of the largest group in which the results of the Company are consolidated. The largest and smallest parent groups' consolidated financial statements can be obtained from the Company's registered office.

2. Basis of preparation

These financial statements have been prepared in accordance with Financial Reporting Standard 101, 'Reduced Disclosure Framework' ("FRS 101"). FRS 101 applies the recognition and measurement requirements of International Financial Reporting Standards ("IFRS") as adopted by the European Union, with reduced disclosures.

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 from the requirements of IFRS as adopted by the EU have been applied in the preparation of these financial statements, in accordance with FRS 101:

- Certain share based payment disclosures in respect of Firm equity instruments (IFRS 2 'Share-based payment' paragraphs 45(b) and 46 to 52);
- Comparative information disclosures for the following (paragraph 38 of IAS 1 'Presentation of financial statements' ("IAS 1")):
 - reconciliation of share capital (paragraph 79(a)(iv) of IAS 1);
 - reconciliation of property, plant and equipment (paragraph 73(e) of IAS 16 'Property, plant and equipment');
 - reconciliation of intangible assets (paragraph 118(e) of IAS 38 'Intangible assets');
- Statement of compliance to IFRSs - Paragraph 16, IAS 1;
- Third balance sheet on retrospective accounting policy changes, restatements, or reclassifications (paragraph 40A-D, IAS 1);
- Disclosures in relation to new or revised standards issued but not yet effective (paragraph 30 and 31, IAS 8, 'Accounting policies, changes in accounting estimates and errors')¹;
- Key management compensation disclosures (paragraph 17, IAS 24 'Related Party Disclosures' ("IAS 24")); and
- Related party transactions with wholly owned Firm undertakings (IAS 24).

¹) To provide further detail to the users of the financial statements, the significant new standards, amendments and interpretations not yet adopted have been disclosed for IFRS 9 'Financial instruments' ("IFRS 9") and IFRS 15 'Revenue from Contracts with Customers' ("IFRS 15") (note 3).

3. Accounting and reporting developments

New standards, amendments and interpretations not yet adopted

IFRS 9 'Financial instruments' ("IFRS 9")

IFRS 9 was issued by the International Accounting Standards Board ("IASB") in July 2014 and replaces the existing guidance in IAS 39 'Financial Instruments: Recognition and Measurement' ("IAS 39"). The standard introduces new guidance on the classification and measurement of financial assets and a single, forward-looking expected credit loss ("ECL") impairment model. The standard also requires entities to provide users of financial statements with additional disclosures. 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 has adopted the new standard on 1 January 2018.

Implementation programme

The Company has a centrally managed IFRS 9 project team which is focused on ensuring compliance with the standard and any additional requirements associated thereof. Overall governance of the program's implementation is through the IFRS 9 Steering Committee which includes representation from senior leaders in Finance, Corporate Accounting Policy, Risk, Technology and Audit.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

3. Accounting and reporting developments (continued)

New standards, amendments and interpretations not yet adopted (continued)

IFRS 9 'Financial instruments' ("IFRS 9") (continued)

Classification and Measurement of Financial Assets and Liabilities

Under IFRS 9, new 'Business Model' and 'Cash Flow Characteristic' tests are introduced which classify financial assets to one of the following three measurement categories: amortised cost, fair value through other comprehensive income ("FVOCI") or fair value through profit or loss ("FVTPL"). Encompassing the guidance provided by IFRS 9 on classification and measurement, the Company has reviewed and deemed financial assets held within a business model with the intention to hold and collect contractual cash flow, and financial assets with the intention to hold and collect contractual cash flow or sell the asset as measured at amortised cost and FVOCI respectively under the condition that contractual cash flows also meet the solely payment of principal and interest ("SPPI") criteria. Financial assets which are not categorised with the intentions highlighted above are deemed to be measured at FVTPL. Additionally, the Company may elect the option to classify financial assets as measured at FVTPL upon initial recognition if such designation may eliminate or reduce an accounting mismatch. On initial adoption of IFRS 9 the Company may also elect the option to designate a currently recognised financial liability as measured at FVTPL to eliminate or reduce an accounting mismatch.

Upon initial assessment of the classification and measurement changes imposed by IFRS 9, the Company anticipates reclassifications to exist for certain populations falling under securities borrowed and securities purchased under agreements to resell which were previously measured at amortised cost but will be measured at FVTPL. Similarly, certain loans and advances to customers measured at amortised cost will be measured at FVOCI. These anticipated reclassifications reflect the business models used to manage these types of assets. In addition, the Company anticipates designating certain financial liability populations falling under securities loaned and securities sold under agreements to repurchase as measured at FVTPL to eliminate or reduce an accounting mismatch that would have otherwise arisen on adoption of IFRS 9. No further reclassifications were identified that were considered to bear a potential material impact on existing asset measurement bases, however, this represents preliminary results from which actual impacts measured from 1 January 2018 may deviate.

IFRS 9 retains most of the existing requirements for financial liabilities. Under the current requirements of IAS 39, the gains and losses attributable to changes in the Company's own credit risk ("DVA") for financial liabilities designated at FVTPL are recognised in profit or loss. However, upon implementation of IFRS 9, this DVA component will be recognised in other comprehensive income. While the standard allows for the early adoption of this recognition, the Company will implement on the effective date of 1 January 2018.

Impairment of Financial Assets

IFRS 9 impairment requirements apply to financial assets that are measured at amortised cost or FVOCI, and specified off-balance sheet lending-related commitments such as loan commitments and financial guarantee contracts.

The determination of impairment losses and allowance will change from an incurred credit loss model under IAS 39 to an ECL model under IFRS 9. In an ECL model, provisions for credit losses are recorded upon initial recognition of the financial asset based on expectations of potential credit losses at that time. The credit loss allowance includes ECLs for financial instruments that may default in the next 12-month period for financial instruments that have not observed a significant increase in credit risk since initial recognition ("stage 1") or over a lifetime period for financial instruments that have observed a significant increase in credit risk since initial recognition ("stage 2"). The allowance also adopts lifetime ECLs for financial instruments where there is objective evidence of credit-impairment at the reporting date ("stage 3"). In determining the appropriate stage for a financial instrument, the Company applies the definition of default consistent with the Basel definition of default to maintain uniformity of the definition across the Firm.

The stage determination for credit losses under the ECL model is dependent on the measurement of a significant increase in credit risk ("SICR"). In determining SICR, the Company plans to conduct quantitative tests taking into consideration, but not limited to, existing risk management indicators, credit rating changes and reasonable and supportable forward-looking information, the latter consisting of a range of scenarios incorporating macro-economic factors composed and monitored by an internal specialised economic forecasting team.

The key input components for the quantification of expected loss through the ECL model includes the probability of default ("PD"), loss given default ("LGD") and exposure at default ("EAD"). The Company seeks to efficiently and effectively leverage as much as possible from existing regulatory and capital frameworks where overlap is present for the implementation of IFRS 9. Differences observed between content in existing frameworks and requirements under IFRS 9 have been identified and are adjusted accordingly. The inputs to the ECL model capture historical datasets and a reasonable and supportable forecasting horizon to estimate expected credit losses.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

3. Accounting and reporting developments (continued)

New standards, amendments and interpretations not yet adopted (continued)

IFRS 9 'Financial instruments' ('IFRS 9') (continued)

Expected impact

Based on 31 December 2017 data, the Company estimates the adoption of the IFRS 9 impairment requirements to result in an immaterial impact on retained earnings. The degree to which the allowance for credit losses will change will depend on both the forward-looking information used on the day of implementation as well as the Company's portfolio composition. Based on 31 December 2017 data, the Company also estimates the adoption of the classification and measurement requirements in IFRS 9 to result in an immaterial impact to retained earnings and other reserves.

For the financial statements for the year ended 31 December 2018, the Company will provide reconciliations and illustrative transition disclosures between IAS 39 and IFRS 9 where required, however the Company will not restate prior periods.

IFRS 15 'Revenue from Contracts with Customers' ('IFRS 15')

IFRS 15 was released in May 2014 by the IASB. This standard requires that revenue from contracts with customers be recognised upon transfer of control of a good or service in the amount of consideration expected to be received. IFRS 15 also changes the accounting for certain contract costs, including whether they may be offset against revenue in the income statement, and requires additional disclosures about revenue and contract costs. IFRS 15 may be adopted using a full retrospective approach or a modified, cumulative effect approach wherein the guidance is applied only to existing contracts as of the date of initial application, and to new contracts transacted after that date. IFRS 15 is applicable retrospectively and must be applied in an entity's first annual IFRS financial statements for periods beginning on or after 1 January 2018. The Company has adopted the new standard on 1 January 2018, using the full retrospective method of adoption, where applicable.

Implementation programme

The Company's implementation efforts included the identification of revenue and associated costs within the scope of the guidance, as well as the evaluation of revenue contracts, and any changes to existing revenue recognition policies. The Company did not identify any material changes in the timing of revenue recognition or presentation of revenues and expenses.

4. 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 financial statements:

Fair value measurement

The Company 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 Company. For instruments valued using internally developed models that use significant unobservable inputs that are 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 Company'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 Company, see note 28.

The use of methodologies or assumptions different than those used by the Company could result in a different estimate of fair value at the reporting date. For a detailed discussion of the Company'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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. 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.

5.1 Consolidation

The Company is a subsidiary undertaking of J.P. Morgan Capital Holdings Limited, a company incorporated in England and Wales and of its ultimate parent, JPMorgan Chase & Co. a company incorporated in the United States of America. It is included in the consolidated financial statements of JPMorgan Chase & Co. which are publicly available. Therefore, the Company has elected not to prepare group financial statements in accordance with the dispensation set out in Section 401 of the Companies Act 2006.

5.2 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 United States ("U.S.") dollar equity and inter-entity financing arrangements with JPMorgan Chase Bank N.A., U.S. dollars is considered as the functional and presentation currency of the Company.

5.3 Foreign currency translation

Monetary assets and monetary liabilities in foreign currencies are translated into 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 income statement.

Non-monetary items denominated in foreign currencies that are stated at historical cost are translated into U.S. dollars at the exchange rate ruling 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 income statement except for differences arising on available-for-sale non-monetary financial assets, which are included in the financial assets available-for-sale reserve.

5.4 Income and expense recognition

Interest income and expense are recognised on an effective interest rate basis, refer note 7. Interest generated as a result of 'negative' interest rates is recognised gross, as interest income or interest expense. 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 include advisory and underwriting fees. Advisory fees are recognised when the related services have been performed and the fee has been earned. Underwriting fees are recognised when the Company has rendered all services and is entitled to collect the fee, and there are no other contingencies associated with the fee.

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, including related transaction costs but excluding the associated interest.

5.5 Dividend recognition

Dividend income is recognised when the right to receive payment is established. Dividends in the form of non-cash assets are recognised at their fair values by the transferee and derecognised at their book value by the transferor. Where the asset received is an investment in the share capital of an entity, the fair value is determined by the market value of the underlying net assets and businesses of the investee, unless the transaction is a combination of businesses under common control where predecessor accounting is applied (refer note 5.16).

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

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.6 Financial assets and financial liabilities

The Company classifies its financial assets and financial liabilities in the following categories on initial recognition: financial assets and financial liabilities held for trading, financial assets and financial liabilities designated at fair value through profit or loss, and loans and receivables and financial liabilities held at amortised cost. The Company recognises derivatives on its balance sheet when it becomes a party to the contractual provisions of the instruments. Loans and receivables and financial liabilities at amortised cost are recognised when the Company becomes a party to the contractual provisions of the instrument. Regular way purchases and sales of financial assets are recognised on the trade-date, the date on which the Company commits to purchase or sell the asset.

i. Financial assets and financial liabilities held for trading

The Company 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, loans 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 and financial liabilities held for trading, are unrealised trading gains and losses. Financial instruments held for trading 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 income statement. Subsequently, they are measured at fair value with movement included in trading profit and loss.

The Firm manages cash instruments, in the form of debt and equity securities, and derivatives on a unified basis as part of the trading strategy, including hedging relationships between cash securities and derivatives. Accordingly the Firm reports the gains and losses on the cash instruments and the gains and losses on the derivatives on a net basis in trading profits.

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

Financial assets and financial liabilities that the Company 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 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 profit or loss 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 reclassified.

Financial assets or financial liabilities are designated 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 Company manages and evaluates on a fair value basis; or (c) relates to an instrument that 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 Company 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. 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 at fair value through profit or loss. Loans and receivables include loans and advances to banks, loans and advances to customers and debtors

Loans and receivables are initially recognised at fair value including directly related incremental transaction costs. They are subsequently measured at amortised cost, including any provision for 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 method is used to calculate the amortised cost of a financial asset or financial liability (or a group of financial assets or financial liabilities). It is a method 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.7 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.

The Company classifies its assets and liabilities according to a hierarchy that has been established under IFRS for disclosure of fair value measurements. 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.

Further details on fair value measurements are provided in note 28 to the financial statements.

5.8 Recognition of deferred day one profit and loss

The Company enters 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.

5.9 Derecognition of financial assets and financial liabilities

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

- a) the Company has transferred substantially all the risks and rewards of ownership of the asset; or
- b) the Company 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 Company 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 Company 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 Company from selling or pledging the underlying financial asset.

5.10 Impairment of financial assets

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

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.10 Impairment of financial assets (continued)

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 loans and receivables when the Company 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 receivables 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 loans and receivables 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 decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss shall be reversed in the income statement. The amount of reversal shall not result in a carrying amount of the financial asset that exceeds what the amortised cost would have been had the impairment not been recognised at the date the impairment is reversed.

5.11 Impairment of non-financial assets

Non-financial assets that are subject to amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are largely independent cash inflows (cash-generating units). Prior impairments of non-financial assets (other than goodwill) are reviewed for possible reversal at each reporting date.

5.12 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 consideration for the transaction can be in the form of cash or securities. If the consideration for the purchase or sale of securities is given in cash the transaction is recorded on the balance sheet within securities purchased/sold under agreement to resell/repurchase. If the consideration is received or given in the form of securities the transaction is recorded off balance sheet. The difference between the sales and repurchase price is treated as interest and accrued over the life of the agreements using the effective interest method.

5.13 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 consideration 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.

5.14 Offsetting financial assets and liabilities

Financial assets and financial liabilities are offset and the net amount reported in the balance sheet when there is currently 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 Company or the counterparty.

5.15 Investments in JPMorgan Chase undertakings

Investments in JPMorgan Chase undertakings are stated at cost less impairment. Where the investments in the share capital of JPMorgan Chase undertakings are acquired by way of a dividend in kind, these are initially recognised at fair value, unless the transaction is a combination of business under common control where predecessor accounting is applied (refer note 5.16). Investments in JPMorgan Chase undertakings are subsequently measured at cost less provision for impairment.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.16 Business combinations

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.

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 from the business combination.

5.17 Cash and cash equivalents

Cash and cash equivalents include cash and balances at central banks and loans and advances to banks with maturities of three months or less.

5.18 Current and deferred income 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 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 are recognised directly in equity if the tax relates to items that are recognised in the same or a different period in equity.

5.19 Provisions and contingent liabilities

Provisions are recognised when the Company 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.

A contingent liability is a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one of more uncertain future events not wholly within the control of the Company, or a present obligation that arises from past events but is not recognised because either an outflow of economic benefits is not probable or the amount of the obligation cannot be reliably measured. Contingent liabilities are not recognised in the financial statements; however disclosure is made unless the probability of settlement is remote.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.20 Pensions and other post-retirement benefits

The Company operates both defined benefit and defined contribution schemes for its employees. The Company also operates defined benefit and defined contribution schemes for employees in the European branches.

i. Defined contribution scheme

A defined contribution plan is a pension plan under which the Company pays fixed contributions into a separate entity. The Company has no legal or constructive obligations 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 income statement on an accrual basis.

ii. Defined benefit scheme

For defined benefit schemes, the service cost of providing retirement benefits to employees during the year is charged to the income statement in accordance with IAS 19 'Employee benefits'. 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 in equity in the period in which they occur.

5.21 Share-based payment awards

Share-based payment awards may be made to employees of the Company 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 Company 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 Company 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.

6. Segmental analysis

The Company is not in scope of IFRS 8 'Operating segments' and therefore has not provided any segmental analysis. The Company has one class of business, the provision of international Corporate and Investment Banking services within Europe, the Middle East and Africa ("EMEA"). The Company operates six branches outside of the UK, but these do not generate material revenues.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

7. Net Interest income and interest expense

Interest income and interest expense includes the current-period interest accruals within interest income or interest expense, as applicable.

Details of interest income and interest expense were as follows:

| | 2017 | 2016 |
|--|----------------|----------------|
| | \$'000 | \$'000 |
| Net interest income/(expense) | | |
| Financial assets and liabilities held for trading | 850,553 | 472,739 |
| Securities purchased under agreements to resell and securities sold under agreements to repurchase | 730,117 | 400,577 |
| Securities borrowed and securities loaned | (281,976) | (275,811) |
| Other interest income and expense* | (522,733) | (5,923) |
| Net interest income | 775,961 | 591,582 |

* 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 ended 31 December 2017 includes \$864 million income and \$1,349 million expense from and to JPMorgan Chase undertakings (2016: \$413 million income, \$497 million expense).

In 2016, an amount of \$317 million included within interest and similar income, representing 'negative' interest income, has been reclassified to interest expense and similar charges and an amount of \$306 million included within interest expense and similar charges, representing 'negative' interest expense, has been reclassified to interest and similar income. These amounts have been reclassified to correctly reflect the nature of the balance.

8. Impairment

| | 2017 | 2016 |
|---|----------------|----------------|
| | \$'000 | \$'000 |
| Write down of investments in JPMorgan Chase undertakings | | |
| Opening balance as at 1 January | 117,359 | — |
| Increase during the year | — | 117,359 |
| Closing balance as at 31 December | 117,359 | 117,359 |
| Allowance for loan losses | | |
| Opening balance as at 1 January | 2,733 | 2,733 |
| Increase/(decrease) during the year | 127,251 | — |
| Impairment write off | (28,789) | — |
| Closing balance as at 31 December | 101,195 | 2,733 |
| Allowance for lending-related commitments | | |
| Opening balance as at 1 January | 380 | 380 |
| Increase during the year | 20,226 | — |
| Closing balance as at 31 December | 20,606 | 380 |
| Net impairment increase | 147,477 | 117,359 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

9. Directors' emoluments

| | 2017 | 2016 |
|---|--------|--------|
| | \$'000 | \$'000 |
| Emoluments | 1,475 | 4,461 |
| Total contributions to a defined contribution plan | 9 | 14 |
| Total value of long term incentive plans for all directors | 27 | 3,784 |
| Compensation to non-executive directors | 773 | 851 |
| <hr/> | | |
| Number of directors who exercised share options | 2 | 4 |
| Number of directors with shares received or receivable under LTIPs | 1 | 2 |
| Number of directors to whom defined contribution pension rights accrued | 4 | 5 |

In accordance with the Companies Act 2006, the directors' emoluments above represent the proportion paid or payable in respect of qualifying services to the Company only. Directors also received emoluments for non-qualifying services, which are not required to be disclosed.

Highest paid director

The emoluments (excluding amounts paid or due to directors under long-term incentive plans ("LTIP's") and the value of share options granted or exercised by directors) of the highest paid director were \$668,860 (2016: \$3,091,725).

The contribution to the defined contribution scheme for the highest paid director during 2017 was \$7,630 (2016: \$5,101). The highest paid director did not exercise share options during the year (the highest paid director exercised share options in 2016). During the year, no shares were received or are receivable by the highest paid director under long-term incentive plans (shares were received or receivable by the highest paid director under long term incentive plans during 2016).

10. Profit on ordinary activities before taxation

| | 2017 | 2016 |
|---|---------|---------|
| | \$'000 | \$'000 |
| Profit on ordinary activities before taxation is stated after charging: | | |
| Depreciation of tangible fixed assets | 1,760 | 1,290 |
| Auditors' remuneration for the audit of the Company's annual financial statements | 2,874 | 2,468 |
| Audit-related assurance services | 2,168 | 849 |
| Wages and salaries | 882,633 | 733,942 |
| Social security costs | 215,222 | 138,753 |
| Other pension and benefits costs | 66,270 | 59,262 |
| Share-based awards | 309,688 | 249,203 |

The average monthly number of persons providing services to the Company during the year was 1,959 (2016: 1,586). The average monthly number of staff employed by the European branches during the year was 241 (2016: 138).

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

11. Tax on profit on ordinary activities

| | 2017 | 2016 |
|---|----------------|----------------|
| | \$'000 | \$'000 |
| (a) Analysis of tax charge for the year | | |
| Current taxation | | |
| UK Corporation tax on profit for the year | 960,531 | 831,585 |
| Overseas taxation | 322,719 | 169,405 |
| Less: Double tax relief | (289,736) | (180,277) |
| Adjustments in respect of previous years | (61,266) | 25,385 |
| Current tax expense for the year | 932,248 | 846,098 |
| Deferred tax (note 12): | | |
| Origination and reversal of temporary differences | 14,825 | 8,137 |
| Adjustment in respect of previous year | 19,341 | (11,844) |
| Effect of rate change on opening balance | (2,824) | (582) |
| Deferred tax credit for the year | 31,342 | (4,289) |
| Total tax expense for the year | 963,590 | 841,809 |

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

The current tax charge for the year differs from the standard rate of corporation tax in the UK including banking surcharge (27.25%). The differences are explained below:

| | 2017 | 2016 |
|---|----------------|----------------|
| | \$'000 | \$'000 |
| Profit on ordinary activities before taxation | 3,599,049 | 3,987,453 |
| Profit on ordinary activities before taxation multiplied by standard rate of corporation tax in UK of 27.25% (2016: 28%). | 980,741 | 1,116,487 |
| Effects of: | | |
| Non-deductible expenses | 9,101 | 77,817 |
| Income not taxable | (14,827) | (52,792) |
| Dividend income | — | (168,000) |
| Transfer pricing adjustments | 18,233 | 10,381 |
| Other adjustment | — | 2,577 |
| Adjustments in respect of previous years | (41,924) | 13,541 |
| Group relief claimed for nil consideration | (25,956) | (146,748) |
| Foreign taxation suffered | 32,983 | (10,873) |
| Impact of change in rate on deferred tax | 5,239 | (581) |
| Total tax expense for the year | 963,590 | 841,809 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

12. Deferred tax

The analysis of deferred tax assets and deferred tax liabilities is as follows:

| | 2017 | 2016 |
|---|----------|---------|
| | \$'000 | \$'000 |
| Deferred tax assets: | | |
| Deferred tax assets to be recovered after more than 12 months | 104,605 | 96,747 |
| Deferred tax asset to be recovered within 12 months | 40,300 | 48,373 |
| | 144,905 | 145,120 |
| Deferred tax liabilities: | | |
| Deferred tax liability to be reversed after more than 12 months | (39,075) | (8,213) |
| Deferred tax liability to be reversed within 12 months | (1,196) | (1,173) |
| | | |
| Deferred tax asset (net) | 104,634 | 135,734 |

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

| | 2017 | 2016 |
|--|----------|---------|
| | \$'000 | \$'000 |
| As at 1 January | 135,734 | 94,590 |
| Depreciation in excess of capital allowances | (167) | (576) |
| Deferral of share-based payments | 7,790 | 24,152 |
| Other adjustment | (38,723) | 17,568 |
| | | |
| As at 31 December | 104,634 | 135,734 |

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

| Deferred tax asset | Accelerated capital allowances | Share-based payments | Other | Total |
|---|--------------------------------|----------------------|----------|----------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 1 January 2016 | 3,643 | 81,173 | 9,774 | 94,590 |
| (Charged)/credited to the income statement | (576) | 6,475 | (1,610) | 4,289 |
| Credited directly to equity | — | 17,677 | 270 | 17,947 |
| Credited directly to other comprehensive income | — | — | 18,908 | 18,908 |
| | | | | |
| At 31 December 2016 | 3,067 | 105,325 | 27,342 | 135,734 |
| (Charged)/credited to the income statement | (167) | (3,801) | (27,374) | (31,342) |
| Credited directly to equity | — | 11,591 | — | 11,591 |
| Credited directly to other comprehensive income | — | — | (11,349) | (11,349) |
| | | | | |
| At 31 December 2017 | 2,900 | 113,115 | (11,381) | 104,634 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

13. Loans and advances to banks

| | 2017 | 2016 |
|-----------------------------|-----------|-----------|
| | \$'000 | \$'000 |
| Loans and advances to banks | 9,812,066 | 6,123,936 |

Included within loans and advances to banks is \$7.1 billion (2016: \$4.3 billion) held with JPMorgan Chase undertakings.

The Company 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 Company 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 \$13.9 billion (2016: \$12.5 billion) have been derecognised from the Company's balance sheet, \$7.0 billion (2016: \$4.5 billion) from loans and advances to banks and \$7.2 billion (2016: \$8.0 billion) from debtors respectively.

14. Loans and advances to customers

The Company's loan portfolio is within the wholesale loan segment. Wholesale loans include loans made to a variety of customers, such as large corporates and institutional clients.

| | 2017 | 2016 |
|---------------------------------|-----------|-----------|
| | \$'000 | \$'000 |
| Loans and advances to customers | 2,713,517 | 3,102,786 |
| Provision for impairment | (129,984) | (2,733) |
| Impairment write off | 28,789 | — |
| | 2,612,322 | 3,100,053 |

The credit quality and analysis of concentration 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

JPMS plc enters into resale agreements, repurchase agreements, securities borrowed and securities loaned transactions (collectively, "securities financing agreements") primarily to finance the Company'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 Company to credit and liquidity risk. To manage these risks, the Company 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.

In resale agreements and securities borrowed transactions, the Company 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 Company typically enters 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 Company'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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

15. Securities financing activities (continued)

| | 2017 | 2016 |
|---|-------------|-------------|
| | \$'000 | \$'000 |
| Securities purchased under agreements to resell | 135,385,611 | 130,416,852 |
| Securities borrowed | 27,072,599 | 25,831,106 |
| | 162,458,210 | 156,247,958 |
| Securities sold under agreements to repurchase | 74,937,158 | 61,657,271 |
| Securities loaned | 12,550,040 | 20,133,325 |
| | 87,487,198 | 81,790,596 |

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

| | 2017 | 2016 |
|---|------------|------------|
| | \$'000 | \$'000 |
| Securities purchased under agreements to resell | 42,694,037 | 41,017,708 |
| Securities borrowed | 11,761,045 | 20,449,114 |
| | 54,455,082 | 61,466,822 |
| Securities sold under agreements to repurchase | 13,909,031 | 12,366,287 |
| Securities loaned | 10,007,640 | 18,205,412 |
| | 23,916,671 | 30,571,699 |

16. Financial assets held for trading

Within its client-driven market-making activities, the Company transacts in debt and equity instruments and derivatives.

| | 2017 | 2016 |
|-----------------------------|-------------|-------------|
| | \$'000 | \$'000 |
| Debt and equity instruments | 107,884,895 | 89,327,429 |
| Derivative receivables | 232,373,718 | 233,718,379 |
| | 340,258,613 | 323,045,808 |

Financial assets held for trading includes \$122 billion held with JPMorgan Chase undertakings (2016:\$124.9 billion).

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

| | 2017 | 2016 |
|--------------------|---------|---------|
| | \$'000 | \$'000 |
| Equity instruments | 164,384 | 144,728 |
| Loans | 177,218 | 170,931 |
| | 341,602 | 315,659 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

18. Debtors

| | 2017 | 2016 |
|---------------|------------|------------|
| | \$'000 | \$'000 |
| Trade debtors | 30,394,066 | 22,534,256 |
| Other debtors | 49,252,556 | 33,938,769 |
| | 79,646,622 | 56,473,025 |

Trade debtors mainly consists of unsettled trades. Other debtors includes \$45.9 billion of cash collateral provided on derivatives (2016: \$33.5 billion).

Debtors includes the following balances from JPMorgan Chase undertakings:

| | 2017 | 2016 |
|---------------|------------|------------|
| | \$'000 | \$'000 |
| Trade debtors | 13,952,580 | 10,641,074 |
| Other debtors | 29,329,759 | 14,189,512 |
| | 43,282,339 | 24,830,586 |

Trade debtors mainly consists of accounts receivable from JPMorgan Chase undertakings and unsettled trades. Other debtors includes \$29 billion of cash collateral provided on derivatives (2016: \$14.1 billion).

19. Other assets

| | 2017 | 2016 |
|-------------------|---------|---------|
| | \$'000 | \$'000 |
| Deferred taxation | 104,634 | 135,734 |
| Prepayments | 5,427 | 508 |
| Accrued income | 652,028 | 447,989 |
| | 762,089 | 584,231 |

20. Investments in JPMorgan Chase undertakings

| | 2017 | 2016 |
|---|-----------|-----------|
| | \$'000 | \$'000 |
| Investments in JPMorgan Chase undertakings at cost | | |
| At 1 January | 3,341,207 | 3,458,789 |
| Write down - see below | — | (117,359) |
| Realisation of investments - see below | — | (223) |
| At 31 December | 3,341,207 | 3,341,207 |

In the prior year, on review of the carrying amount of the Company's investment in Cazenove Group Limited, the investment has been written down by \$117.4 million.

During the first quarter of 2016, the Company received a final cash distribution of \$517,000 from its subsidiary, Bank One Europe Limited, of which \$294,000 was recognised as a gain on disposal in the Income statement. Bank One Europe Limited was dissolved shortly thereafter.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

20. Investments in JPMorgan Chase undertakings (continued)

The holdings of the Company are as follows:

| Name | Address of subsidiary | Principal activity | Holding | Shares held % |
|---|--|--------------------|----------|---------------|
| Greenwood Nominees Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Nominee company | Direct | 100 |
| J.P. Morgan Europe Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Banking | Direct | 100 |
| Cazenove Group Limited | JPMorgan House, Grenville Street, St. Helier, JE4 8QH, Jersey | Holding company | Direct | 100 |
| J.P. Morgan Prime Nominees Ltd. | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Nominee company | Direct | 100 |
| J.P. Morgan Services LLP | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Dormant company | Direct | 57 |
| CP Group Holding Cooperatief U.A. | Strawinskylaan 1135, Tower B, 11th Floor, Amsterdam, 1077, Netherlands | Investment company | Direct | 100 |
| Chase Securities International Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 100 |
| Chase International Securities (C.I.) Limited | Forum 4, Grenville Street, St. Helier, JE2 4UF, Jersey | Investment company | Indirect | 100 |
| Chemical Nominees Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 100 |
| Cazenove Holdings Limited | JPMorgan House, Grenville Street, St. Helier, JE4 8QH, Jersey | Holding company | Indirect | 100 |
| Cazenove IP Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 100 |
| JPMorgan Cazenove Holdings | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Holding company | Indirect | 51 |
| J.P. Morgan Cazenove Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 51 |
| JPMorgan Cazenove Service Company | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Service company | Indirect | 51 |
| Cheyne Capital Guaranteed S.A. Series 2007-1 ^(a) | 2 Boulevard Konrad Adenauer, Luxembourg, L-1115, Luxembourg | Notes issuer | Direct | 100 |

(a) The above entity is a special purpose entity which meets the definition (per section 1162 of the Companies Act 2006) of a subsidiary undertaking.

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

All shares held in the above subsidiaries are ordinary shares.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

21. Unconsolidated structured entities

Structured entities

A structured entity is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as, when any voting rights relate to administrative tasks only and the relevant activities are directed by means of other contractual arrangements.

Typically, structured entities have one or more of the following characteristics:

- an insufficient amount of at-risk equity to permit the entity to finance its activities without additional subordinated financial support;
- equity at-risk owners that, as a group, are not able to make significant decisions relating to the entity's activities through voting rights or similar rights; or
- equity at-risk owners that do not absorb the entity's losses or receive the entity's residual returns.

The most common type of structured entities is a special purpose entity ("SPE"). SPE's are commonly used in securitisation transactions in order to isolate certain assets and distribute the cash flows from those assets to investors. The party that has power to direct the most significant activities of the entity and an exposure to the risks of the entity (together constituting control of the entity) is required to consolidate the assets and liabilities of the structured entity. The structured entities in which the Company has control are consolidated into the parent undertakings of the Company, as set out in note 20 to these financial statements.

The Company has involvement with various structured entities, originated within the Firm or by third parties. These typically include securitisations, credit protection purchased credit linked notes, collateralised loan and debt obligations, and other structured financings.

Material interests held in SPE's include residential and commercial mortgage-backed securities and other asset-backed securities. These interests relate to securitisation bonds where the underlying assets are residential and commercial mortgages, consumer loans, student loans, trade receivables, and credit card receivables.

Interest in unconsolidated structured entities

The Company's interest in an unconsolidated structured entity is considered as the contractual and non-contractual involvement that exposes the Company to variability of returns from the performance of the structured entity but not deemed a subsidiary.

The following table shows, by type of structured entity, the carrying amounts of the Company's interest in unconsolidated structured entities recognised on the balance sheet. The maximum exposure to loss is considered as approximate to the carrying amounts. It also provides an indication of the size of the structured entities, measured by the total assets held in the structured entity. The carrying amounts do not necessarily reflect the risks faced by the Company, as factors such as economic hedges and effect of collateral held by the Company are not included.

| | Interest in unconsolidated structured entities | | | | |
|--|--|---|---------------------------------|---------------|------------------|
| | Fair value of assets held by SPE | Financial assets and liabilities held for trading | Loans and advances to customers | Other | Total |
| 31 December 2017 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Residential mortgage-backed securities | 41,499,967 | 946,036 | — | — | 946,036 |
| Commercial mortgage-backed securities | 3,326,241 | 49,690 | — | — | 49,690 |
| Other asset-backed securities | 34,832,976 | 490,698 | — | — | 490,698 |
| Credit-related notes and asset swap vehicles | 73,776,415 | 255,094 | — | — | 255,094 |
| Covered Bonds | 122,148,567 | 75,266 | — | — | 75,266 |
| Other | 167,451,690 | 1,653,563 | — | — | 1,653,563 |
| Total assets | 443,035,856 | 3,470,347 | — | — | 3,470,347 |
| Maximum exposure to loss | 443,035,856 | 3,470,347 | — | — | 3,470,347 |
| Total liabilities | — | 533,309 | — | — | 533,309 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

21. Unconsolidated structured entities (continued)

| | Fair value of assets held by SPE | Interest in unconsolidated structured entities | | | Total |
|--|----------------------------------|---|---------------------------------|--------|-----------|
| | | Financial assets and liabilities held for trading | Loans and advances to customers | Other | |
| 31 December 2016 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Residential mortgage-backed securities | 128,093,000 | 750,000 | — | — | 750,000 |
| Commercial mortgage-backed securities | 21,654,000 | 95,000 | 365,000 | — | 460,000 |
| Other asset-backed securities | 27,923,000 | 174,000 | 50,000 | — | 224,000 |
| Credit-related notes and asset swap vehicles | 47,022,000 | 227,000 | — | — | 227,000 |
| Collateralised debt obligations | 6,883,000 | 101,000 | — | — | 101,000 |
| Covered Bonds | 394,504,000 | 171,000 | — | — | 171,000 |
| Other | 280,160,000 | 1,807,000 | — | — | 1,807,000 |
| Total assets | 906,239,000 | 3,325,000 | 415,000 | — | 3,740,000 |
| Maximum exposure to loss | 906,239,000 | 3,325,000 | 415,000 | — | 3,740,000 |
| Total liabilities | — | — | — | 52,000 | 52,000 |

22. Financial liabilities held for trading

| | 2017 | 2016 |
|-----------------------------|-------------|-------------|
| | \$'000 | \$'000 |
| Debt and equity instruments | 46,215,803 | 42,248,042 |
| Derivative payables | 241,407,619 | 235,757,064 |
| Other financial liabilities | 20,664,646 | 15,520,640 |
| | 308,288,068 | 293,525,746 |

Financial liabilities held for trading includes \$166 billion held with JPMorgan Chase undertakings (2016: \$152.1 billion).

23. Trade creditors and other liabilities

| | 2017 | 2016 |
|---|------------|------------|
| | \$'000 | \$'000 |
| Trade creditors ^(a) | 30,479,035 | 29,755,510 |
| Other liabilities: | | |
| Accruals and deferred income | 1,766,668 | 1,399,456 |
| Taxation and social security ^(b) | 311,635 | 575,237 |
| Other ^(c) | 25,271,893 | 23,844,456 |
| Total other liabilities | 27,350,196 | 25,819,149 |
| Total trade creditors and other liabilities | 57,829,231 | 55,574,659 |

(a) Trade creditors predominantly consists of unsettled trades, brokerage fees payable and liabilities in respect of assets transferred but not derecognised (note 32) and includes \$3.5 billion with other JPMorgan Chase undertakings (2016: \$2.6 billion). Amounts owed to JPMorgan Chase undertakings presented on the balance sheet represents financing and collateral arrangements with other JPMorgan Chase undertakings.

(b) Taxation and social security includes provisions for corporate tax, overseas tax and bank levy.

(c) Other includes \$25.2 billion (2016: \$23.5 billion) of cash collateral received related to OTC derivatives.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

24. Called-up share capital

| | 2017 | 2016 |
|--|-------------|------------|
| | \$'000 | \$'000 |
| Issued and fully paid share capital | | |
| At 1 January | | |
| 1,039,262 ordinary shares (2016: 1,039,262) of \$10,000 each | 10,392,620 | 10,392,620 |
| 34,648 preferred ordinary shares (2016: 34,648) of \$10,000 each | 346,480 | 346,480 |
| 680,685 preference shares (2016: 680,685) of \$10,000 each | 6,806,850 | 6,806,850 |
| 50,000 ordinary shares (2016: 50,000) of £1.24 each | 100 | 100 |
| 2 ordinary shares (2016: 2) of £1 each | — | — |
| Movements during the year | | |
| 205,081 ordinary shares issued of \$10,000 each | 2,050,810 | — |
| 34,648 preferred ordinary shares (2016: 34,648) of \$10,000 each | (346,480) | — |
| 680,685 preference shares (2016: 680,685) of \$10,000 each | (6,806,850) | — |
| At 31 December | | |
| 1,244,343 ordinary shares (2016: 1,039,262) of \$10,000 each | 12,443,430 | 10,392,620 |
| 0 preferred ordinary shares (2016: 34,648) of \$10,000 each | — | 346,480 |
| 0 preference shares (2016: 680,685) of \$10,000 each | — | 6,806,850 |
| 50,000 ordinary shares (2016: 50,000) of £1.24 each | 100 | 100 |
| 2 ordinary shares (2016: 2) of £1 each | — | — |
| | 12,443,530 | 17,546,050 |
| | | |
| | 2017 | 2016 |
| | \$'000 | \$'000 |
| Preference shares in issue | | |
| 5-year floating rate of \$10,000 each* | — | 2,650,000 |
| 10-year fixed rate of \$10,000 each* | — | 2,156,850 |
| 20-year fixed rate of \$10,000 each* | — | 2,000,000 |
| | — | 6,806,850 |

* Additional disclosure on the terms per tranche of preference shares and preferred ordinary shares is provided under note 25.

On 14 June 2017, the Company redeemed 3,648 preferred ordinary shares of \$10,000 each and 7,000 preference shares \$10,000 each comprising the entire shareholding of J.P. Morgan Capital Financing Limited; as a result the Company is wholly owned by J.P. Morgan Capital Holdings Limited.

Through a series of corporate steps that occurred instantaneously on 11 September 2017, 31,000 preferred ordinary shares and 673,685 preference shares of \$10,000 each were converted into 205,081 ordinary shares of \$10,000 each and 499,604 deferred shares of \$10,000 each. The deferred shares had no voting rights or any rights to dividends or distributions and were cancelled immediately, resulting in recognition of \$4,996 million in capital redemption reserve.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

25. Dividends

As at 11 September 2017, the Company no longer had any preference shares or preferred ordinary shares in issue. Interim dividends of \$359,303,501 were paid on the preference shares (2016: \$358,107,690) and \$6,696,499 on the preferred ordinary shares of the Company in 2017 (2016: \$5,261,655). An interim dividend of nil (2016: \$686,630,655) was paid on the ordinary shares of the Company for 2017. No final dividend was paid or proposed for 2017 (2016: nil).

The dividend rate on the preferred ordinary shares was 0.9% over 12 month U.S. dollar LIBOR on the nominal amount, and, if resolved to be distributed, was payable in priority to any dividend payable on ordinary shares, with no right to accumulation in the event of a deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company could redeem at its option any preferred ordinary share at par, together with accrued dividend due, at any time after 26 March 2007. The preferred ordinary shares carried no voting rights at a general meeting of the Company. The ordinary shares carry 100% of the voting rights.

The dividend rate on the 5-year floating rate preference shares was 0.9% over 12 month U.S. dollar LIBOR on the nominal amount, and, if resolved to be distributed, was payable in priority to any dividend payable on ordinary shares, but *pari passu* to any payment to the holders of the preferred ordinary shares or any other preference shares, with no right to accumulation in the event of a deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company could redeem at its option any 5-year floating rate preference share at par, together with accrued dividend due, at any time after 9 June 2009. The 5-year floating rate preference shares carried no voting rights at general meetings.

The dividend rate on the 10-year fixed rate preference shares was a fixed rate of 2.75% and 2.85% per series, above the 10-year U.S. Treasury Rate as at the date of issue, and, if resolved to be distributed, was payable in priority to any dividend payable on the ordinary shares, but *pari passu* to any payment to the holders of the preferred ordinary shares or any other preference shares, with no right to accumulation in the event of deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company could redeem any series of the 10-year fixed rate preference shares at par at any time after the 10th anniversary of the date of issue of that series provided that the Company could only redeem exactly 20 per cent of the total number of preference shares issued in that series at par. The preference shares carried no voting rights at general meetings.

The dividend rate on the 20-year fixed rate preference shares was a fixed rate of 8% and, if resolved to be distributed, was payable in priority to any payment of dividend or other distribution to the holders of any junior obligations, but *pari passu* to any payment of dividend or other distribution to the holders of any parity obligations, with no right to accumulation in the event of deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company could redeem at its option any 20-year fixed rate preference share at par, together with accrued dividend due, at any time after 20 years and one month of the date of issue of that series. The preference shares carried no voting rights at general meetings.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

26. Notes to the statement of cash flows

| | 2017 | 2016 |
|---|---------------------|---------------------|
| | \$'000 | \$'000 |
| Profit before income taxation | 3,599,049 | 3,987,453 |
| Adjustments for: | | |
| Depreciation of tangible fixed assets | 1,760 | 1,290 |
| Impairment of investments in JPMorgan Chase undertakings | — | 117,359 |
| Other non-cash movements | (2,554,965) | 681,129 |
| Operating cash flows before changes in operating assets and liabilities | 1,045,844 | 4,787,231 |
| Changes in operating assets | | |
| Decrease in loans and advances to customers | 487,731 | 192,771 |
| (Increase)/decrease in securities purchased under resale agreements | (4,968,759) | 6,419,632 |
| Increase in securities borrowed | (1,241,493) | (10,792,219) |
| Increase in financial assets held for trading | (17,212,805) | (23,437,986) |
| Increase in financial assets designated at fair value through profit or loss | (25,943) | (190,374) |
| Increase in debtors and other assets | (23,259,302) | (18,329,453) |
| (Increase)/decrease in prepayments and accrued income | (208,958) | 38,987 |
| | (46,429,529) | (46,098,642) |
| Changes in operating liabilities | | |
| Increase/(decrease) in securities sold under repurchase agreements | 13,279,887 | (3,864,900) |
| (Decrease)/increase in securities loaned | (7,583,285) | 8,817,628 |
| Increase in financial liabilities held for trading | 14,762,322 | 30,167,276 |
| Increase in financial liabilities designated at fair value through profit or loss | 1,465,247 | — |
| Increase in trade creditors | 723,525 | 4,269,179 |
| Increase in other liabilities | 1,453,703 | 6,128,016 |
| Increase/(decrease) in accruals and deferred income | 367,212 | (741,444) |
| | 24,468,611 | 44,775,755 |
| Cash (used in)/generated from operating activities | (20,915,074) | 3,464,344 |

27. Commitments

Lending-related commitments and guarantees

The Company 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 Company should the counterparty draw upon the commitment or the Company 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 Company's view, representative of its actual future credit exposure or funding requirements.

| | 2017 | 2016 |
|--|-------------------|-------------------|
| | \$'000 | \$'000 |
| Unused commitments on loans | 18,615,564 | 15,180,394 |
| Standby letters of credit and guarantees | 1,839,881 | 126,391 |
| | 20,455,445 | 15,306,785 |

There are no lending commitments to other JPMorgan Chase undertakings (2016: nil).

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

28. Assets and liabilities measured at fair value

Fair value

Valuation process

The Company 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 valuation models and other valuation techniques that consider relevant transaction characteristics (such as maturity) and use as inputs observable or unobservable market parameters, including 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 Company 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 Company's businesses and portfolios. The use of different methodologies or assumptions to those used by the Company 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 Company'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 Company, 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 Company by JPMorgan Chase Bank, N.A. and therefore the Company takes account of these arrangements in estimating the fair value of its derivative portfolio.

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 Company.

Fair value hierarchy

The Company 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.

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Notes to the financial statements (continued)

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

Valuation methodologies

The following table describes the valuation methodologies used by the Company 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 | <p>Quoted market prices are used where available.</p> <p>In the absence of quoted market prices, securities are valued based on:</p> <ul style="list-style-type: none"> • Observable market prices for similar securities • Relevant broker quotes • Discounted cash flows <p>In addition, the following inputs to discounted cash flows are used for the following products:</p> <p><i>Mortgage and asset-backed securities specific inputs:</i></p> <ul style="list-style-type: none"> • Collateral characteristics • Deal-specific payment and loss allocations • Current market assumptions related to yield, prepayment speed, conditional default rates and loss severity | <p>Level 1</p> <p>Level 2 or 3</p> |
| Derivatives and fully funded OTC instruments | <p>Exchange-traded derivatives that are actively traded and valued using the exchange price.</p> <p>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 as well as considering the contractual terms.</p> <p>The key valuation inputs used will depend on the type of derivative and the nature of the underlying instruments and may include equity prices, commodity prices, interest rate yield curves, foreign exchange rates, volatilities, correlations, credit default swaps ("CDS") spreads and recovery rates. Additionally, the credit quality of the counterparty and of the Company as well as market funding levels may also be considered.</p> <p>In addition, the following specific inputs are used for the following derivatives that are valued based on models with significant unobservable inputs are as follows:</p> <p><i>Structured credit derivatives specific inputs include:</i></p> <ul style="list-style-type: none"> • CDS spreads and recovery rates • Credit correlation between the underlying debt instruments <p><i>Equity option specific inputs include:</i></p> <ul style="list-style-type: none"> • Equity volatilities • Equity correlation • Equity - foreign exchange ("FX") correlation • Equity - interest rate correlation <p><i>Interest rate and FX exotic options specific inputs include:</i></p> <ul style="list-style-type: none"> • Interest rate spread volatility • Interest rate correlation • Foreign exchange correlation • Interest rate - FX correlation <p><i>Commodity derivatives specific inputs include:</i></p> <ul style="list-style-type: none"> • Commodity volatility • Forward commodity price | <p>Level 1</p> <p>Level 2 or 3</p> |
| Financial instruments held for trading - loans | <p>Where observable market data is available, valuations are based on:</p> <ul style="list-style-type: none"> • Observed market prices (circumstances are infrequent) • Relevant broker quotes • Observed market prices for similar instruments <p>Where observable market data is unavailable or limited, valuations are based on discounted cash flows, which consider the following:</p> <ul style="list-style-type: none"> • Credit spreads derived from the cost of CDS; or benchmark credit curves developed by the Company, by industry and credit rating • Prepayment speed • Collateral characteristics | <p>Level 2 or 3</p> |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Valuation methodologies (continued)

| Product/instrument | Valuation methodology, inputs and assumptions | Classifications in the valuation hierarchy |
|---|--|--|
| Loans and advances to customers and lending-related commitments | <p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> Credit spreads, derived from the cost of CDS; or benchmark credit curves developed by the Company, by industry and credit rating Prepayment speed <p>Lending-related commitments are valued similar to loans and reflect the portion of an unused commitment expected, based on the Company's average portfolio historical experience, to become funded prior to an obligor default</p> | Predominantly level 3 |
| Securities financing agreements | <p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> Derivative features. For further information refer to the discussion of derivatives above Market rates for the respective maturity Collateral characteristics | Level 2 |

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 2017 and 2016, by major product category and fair value hierarchy.

| | Level 1 \$'000 | Level 2 \$'000 | Level 3 \$'000 | Total \$'000 |
|--|-------------------|--------------------|-------------------|--------------------|
| At 31 December 2017 | | | | |
| Securities financing agreements: | | | | |
| Securities purchased under agreements to resell | — | 1,799,061 | — | 1,799,061 |
| Securities borrowed | — | 3,049,423 | — | 3,049,423 |
| Financial assets held for trading: | | | | |
| Debt and equity instruments | 50,259,349 | 56,288,802 | 1,336,743 | 107,884,894 |
| Derivative receivables | 158,218 | 228,171,775 | 4,043,726 | 232,373,719 |
| Financial assets designated at fair value through profit or loss: | | | | |
| Debt and equity instruments | — | — | 341,602 | 341,602 |
| Total financial assets | 50,417,567 | 289,309,061 | 5,722,071 | 345,448,699 |
| Securities financing agreements: | | | | |
| Securities sold under agreements to repurchase | — | 3,052,613 | — | 3,052,613 |
| Financial liabilities held for trading: | | | | |
| Debt and equity instruments | 32,709,118 | 13,505,976 | 712 | 46,215,806 |
| Derivative payables | 543,061 | 234,225,800 | 6,638,758 | 241,407,619 |
| Other financial liabilities | — | 13,671,674 | 6,992,969 | 20,664,643 |
| Financial assets designated at fair value through profit or loss: | | | | |
| Debt and equity instruments | — | 1,465,247 | — | 1,465,247 |
| Other liabilities: | | | | |
| Deposits | — | 108,101 | — | 108,101 |
| Total financial liabilities | 33,252,179 | 266,029,411 | 13,632,439 | 312,914,029 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Assets and liabilities measured at fair value on a recurring basis (continued)

| | Level 1 | Level 2 | Level 3 | Total |
|--|-------------------|--------------------|------------------|--------------------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2016 | | | | |
| Financial assets held for trading: | | | | |
| Debt and equity instruments | 48,988,614 | 39,530,046 | 808,769 | 89,327,429 |
| Derivative receivables | 76,571 | 227,134,018 | 6,507,790 | 233,718,379 |
| Financial assets designated at fair value through profit or loss: | | | | |
| Debt and equity instruments | — | — | 315,659 | 315,659 |
| Total financial assets | 49,065,185 | 266,664,064 | 7,632,218 | 323,361,467 |
| Financial liabilities held for trading: | | | | |
| Debt and equity instruments | 31,033,923 | 11,213,696 | 423 | 42,248,042 |
| Derivative payables | 76,358 | 230,220,052 | 5,460,654 | 235,757,064 |
| Other financial liabilities | — | 11,557,637 | 3,963,003 | 15,520,640 |
| Total financial liabilities | 31,110,281 | 252,991,385 | 9,424,080 | 293,525,746 |

Level 3 valuations

The Firm has established well structured 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 Company. For instruments valued using internally developed valuation models and other valuation techniques 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 valuation model or other valuation technique to use. Second, due to the lack of observability of significant inputs, management must assess all relevant empirical data in deriving valuation inputs including, 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 Company'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 Company's view, the input range and the weighted average value do not reflect the degree of input uncertainty or an assessment of the reasonableness of the Company's estimates and assumptions. Rather, they reflect the characteristics of the various instruments held by the Company 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 Company at each balance sheet date.

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Notes to the financial statements (continued)

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 2017 | \$'000 | \$'000 | \$'000 | | | | |
| Debt and equity instruments | 1,678,345 | (712) | 1,677,633 | | | | |
| Corporate debt securities and other | | | | Market comparables | Price | \$3 - \$111 | \$82 |
| Residential mortgage-backed securities and loans | | | | Discounted cash flows | Yield Prepayment speed Conditional default rate Loss severity | 3% - 16% 0% - 13% 0% - 5% 0% - 84% | 6% 9% 1% 3% |
| Commercial mortgage-backed securities and loans | | | | Market comparables | Price | \$0 - \$100 | \$94 |
| Loans | | | | Market comparables | Price | \$4 - \$103 | \$84 |
| Derivatives | 4,043,726 | (6,638,758) | (2,595,032) | | | | |
| Net interest rate derivatives | | | | Option pricing | Interest rate spread volatility Interest rate correlation Interest rate - FX correlation | 27bps - 38bps (50)% - 98% 60% - 70% | |
| | | | | Discounted cash flows | Prepayment speed | 0% - 30% | |
| Net credit derivatives | | | | Discounted cash flows | Credit correlation Credit spread Recovery rate Yield Prepayment speed Conditional default rate Loss severity | 40% - 75% 6bps - 1,489bps 20% - 70% 1% - 20% 4% - 21% 0% - 100% 4% - 100% | |
| | | | | Market comparables | Price | \$10 - \$98 | |
| Net foreign exchange derivatives | | | | Option pricing | Interest rate - FX correlation | (50)% - 70% | |
| | | | | Discounted cash flows | Prepayment speed | 7% | |
| Net equity derivatives | | | | Option pricing | Equity volatility Equity correlation Equity - FX correlation Equity - interest rate correlation | 20% - 55% 0% - 85% (50)% - 30% 10% - 40% | |
| Net commodity derivatives | | | | Option pricing | Forward commodity price Commodity volatility Commodity correlation | \$54 - \$68 per barrel 5% - 46% (40%) - 70% | |
| Other financial liabilities | — | (6,992,969) | (6,992,969) | Option pricing | Interest rate spread volatility Interest rate correlation Interest rate - FX correlation Equity correlation Equity - FX correlation Equity - interest rate correlation | 27bps - 38bps (50)% - 98% (50)% - 70% 0% - 85% (50)% - 30% 10% - 40% | |
| Total | 5,722,071 | (13,632,439) | (7,910,368) | | | | |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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 | \$'000 | \$'000 | \$'000 | | | | |
| Debt and equity instruments | 1,124,428 | (423) | 1,124,005 | | | | |
| Corporate debt securities and other | | | | Discounted cash flows Market comparables | Credit spread Yield Price | 40bps – 375bps 1% - 17% \$0 - \$121 | 96bps 9% \$91 |
| Residential mortgage-backed securities and loans | | | | Discounted cash flows | Yield Prepayment speed Conditional default rate Loss severity | 4% - 18% 0% - 20% 0% - 34% 0% - 90% | 5% 8% 15% 37% |
| Commercial mortgage-backed securities and loans | | | | Discounted cash flows | Yield Conditional default rate Loss severity | 1% - 32% 0% - 100% 40% | 8% 69% 40% |
| Derivatives | 6,507,790 | (5,460,654) | 1,047,136 | | | | |
| Net interest rate derivatives | | | | Option pricing | Interest rate correlation Interest rate spread volatility | (30)% – 100% 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 | — | (3,963,003) | (3,963,003) | | | | |
| | | | | Option pricing | Interest rate correlation Interest rate spread volatility Foreign exchange correlation Equity correlation | (30)% – 100% 3% – 38% (30)% – 65% (50)% – 80% | |
| | | | | Discounted cash flows | Credit correlation | 30% – 85% | |
| Total | 7,632,218 | (9,424,080) | (1,791,862) | | | | |

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.

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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Changes in and ranges of unobservable inputs (continued)

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.

Fair value financial instruments valued using techniques that incorporate unobservable inputs

The potential impact as at 31 December of using reasonable possible alternative assumptions for the valuations including significant unobservable inputs have been quantified in the following table:

| Sensitivity analysis of valuations using unobservable inputs | Fair Value | | | Favourable change | Unfavourable change |
|--|------------------|---------------------|--------------------|-------------------|---------------------|
| | Asset | Liability | Net | Income statement | |
| At 31 December 2017 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Debt and equity instruments | | | | | |
| Corporate debt securities and other | 1,664,449 | (712) | 1,663,737 | 83,031 | (83,031) |
| Residential mortgage-backed securities | 11,565 | — | 11,565 | 328 | (328) |
| Commercial mortgage-backed securities | 2,331 | — | 2,331 | 503 | (503) |
| Total debt and equity instruments | 1,678,345 | (712) | 1,677,633 | 83,862 | (83,862) |
| Derivatives* | 4,043,726 | (6,638,758) | (2,595,032) | 39,996 | (39,996) |
| Other financial liabilities* | — | (6,992,969) | (6,992,969) | 107,781 | (107,781) |
| Total | 5,722,071 | (13,632,439) | (7,910,368) | 231,639 | (231,639) |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Fair value financial instruments valued using techniques that incorporate unobservable inputs (continued)

| Sensitivity analysis of valuations using unobservable inputs | Fair Value | | Net | Favourable change | Unfavourable change |
|--|------------------|--------------------|--------------------|-------------------|---------------------|
| | Asset | Liability | | Income statement | |
| At 31 December 2016 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Debt and equity instruments | | | | | |
| Corporate debt securities and other | 1,116,836 | (423) | 1,116,413 | 20,471 | (20,471) |
| Residential mortgage-backed securities | 1,550 | — | 1,550 | 155 | (155) |
| Commercial mortgage-backed securities | 6,042 | — | 6,042 | 778 | (778) |
| Total debt and equity instruments | 1,124,428 | (423) | 1,124,005 | 21,404 | (21,404) |
| Derivatives* | 6,507,790 | (5,460,654) | 1,047,136 | 13,305 | (13,305) |
| Other financial liabilities* | — | (3,963,003) | (3,963,003) | 19,667 | (19,667) |
| Total | 7,632,218 | (9,424,080) | (1,791,862) | 54,376 | (54,376) |

* Given significant hedging between derivatives and other financial liabilities the net risk is considered to calculate the favourable/unfavourable changes with the result then allocated to the two lines individually.

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 Company within level 3 of the fair value hierarchy.

Movement in assets and liabilities in Level 3 during year ended 31 December 2017

| Financial assets | Debt and equity instruments | Derivative receivables | Total financial assets |
|--|-----------------------------|------------------------|------------------------|
| | \$'000 | \$'000 | \$'000 |
| At 1 January 2017 | 1,124,428 | 6,507,790 | 7,632,218 |
| Total gains recognised in profit or loss | 82,639 | 2,143,878 | 2,226,517 |
| Purchases | 1,885,131 | 2,225,648 | 4,110,779 |
| Sales | (1,369,048) | (3,541,844) | (4,910,892) |
| Issuances | — | 1,157 | 1,157 |
| Settlements | (103,870) | (2,370,600) | (2,474,470) |
| Transfers in to Level 3 | 490,559 | 987,507 | 1,478,066 |
| Transfers out of Level 3 | (431,494) | (1,909,810) | (2,341,304) |
| At 31 December 2017 | 1,678,345 | 4,043,726 | 5,722,071 |
| Change in unrealised gains related to financial instruments held at 31 December 2017 | 134,692 | 729,155 | 863,847 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Movement in assets and liabilities in Level 3 during year ended 31 December 2017 (continued)

| Financial liabilities | Debt and equity instruments | Derivative payables | Other financial liabilities | Total financial liabilities |
|---|-----------------------------|---------------------|-----------------------------|-----------------------------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 1 January 2017 | 423 | 5,460,654 | 3,963,003 | 9,424,080 |
| Total (gains)/loss recognised in profit or loss | (614) | 1,674,657 | 675,116 | 2,349,159 |
| Purchases | (39,710) | (1,437,553) | — | (1,477,263) |
| Sales | 41,804 | 2,508,171 | 18,932 | 2,568,907 |
| Issuances | — | 3,588 | 5,350,163 | 5,353,751 |
| Settlements | (399) | (2,991,676) | (3,515,814) | (6,507,889) |
| Transfers in to Level 3 | — | 3,422,465 | 705,568 | 4,128,033 |
| Transfers out of Level 3 | (792) | (2,001,548) | (203,999) | (2,206,339) |
| At 31 December 2017 | 712 | 6,638,758 | 6,992,969 | 13,632,439 |
| Change in unrealised losses related to financial instruments held at 31 December 2017 | (72) | (40,029) | (22,878) | (62,979) |

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

| Financial assets | Debt and equity instruments | Derivative receivables | Total financial assets |
|--|-----------------------------|------------------------|------------------------|
| | \$'000 | \$'000 | \$'000 |
| At 1 January 2016 | 1,427,012 | 5,175,306 | 6,602,318 |
| Total (loss)/gains recognised in profit or loss | (84,711) | 1,200,083 | 1,115,372 |
| Purchases | 1,578,086 | (185,641) | 1,392,445 |
| Sales | (1,303,679) | 513,914 | (789,765) |
| Issuances | 14,927 | 298 | 15,225 |
| Settlements | (106,648) | (219,772) | (326,420) |
| Transfers in to Level 3 | 147,701 | 263,403 | 411,104 |
| Transfers out of Level 3 | (548,260) | (239,801) | (788,061) |
| At 31 December 2016 | 1,124,428 | 6,507,790 | 7,632,218 |
| Change in unrealised gains related to financial instruments held at 31 December 2016 | (47,977) | 1,080,402 | 1,032,425 |

| Financial liabilities | Debt and equity instruments | Derivative payables | Other financial liabilities | Total financial liabilities |
|---|-----------------------------|---------------------|-----------------------------|-----------------------------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 1 January 2016 | 5,073 | 4,906,458 | 3,136,824 | 8,048,355 |
| Total (gains)/loss recognised in profit or loss | 8,098 | 796,473 | 177,779 | 982,350 |
| Purchases | (1,865) | 18,979 | — | 17,114 |
| Sales | 21,264 | 720,003 | — | 741,267 |
| Issuances | — | 1,491 | 2,302,540 | 2,304,031 |
| Settlements | (32,598) | (938,435) | (1,656,106) | (2,627,139) |
| Transfers in to Level 3 | 1,288 | 243,760 | 56,015 | 301,063 |
| Transfers out of Level 3 | (837) | (288,075) | (54,049) | (342,961) |
| At 31 December 2016 | 423 | 5,460,654 | 3,963,003 | 9,424,080 |
| Change in unrealised losses related to financial instruments held at 31 December 2016 | (145) | 681,963 | 74,124 | 755,942 |

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

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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 2017 and 2016, there were no significant transfers between levels 1 and 2.

During the year ended 31 December 2017, transfers in to and out of level 3 included the following:

- \$1.1 billion of assets and \$1.2 billion of liabilities transferred out of level 3 driven by an increase in observability of credit default swaps;
- \$0.5bn of assets and \$0.5bn of liabilities transferred out of level 3 driven by an increase in observability of equity options;
- \$0.2bn of assets transferred out of level 3 driven by an increase in observability of trading loans and corporate debt;
- \$0.2bn of liabilities transferred out of level 3 driven by an increase in other financial liabilities;
- \$0.6bn of assets and \$3.0bn of liabilities transferred in to level 3 driven by a decrease in observability of equity options;
- \$0.2bn of assets transferred in to level 3 driven by a decrease in observability of trading loans; and
- \$0.6bn of liabilities transferred in to level 3 driven by a decrease in other financial liabilities.

During the year ended 31 December 2016, transfers in to 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 in to level 3 driven by a decrease in observability of credit default swaps.

All transfers are assumed to occur at the beginning of the period 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 securities purchased under agreements to resell, cash and balances at central banks, debtors, other assets, trade creditors and other liabilities.

The Company has \$272.0 billion (2016: \$246.5 billion) of current financial assets and \$266.1 billion (2016: \$236.2 billion) of current financial liabilities that are not measured at fair value, including loans and advances to customers of \$2.6 billion (2016: \$3.1 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.

J.P. MORGAN SECURITIES PLC

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 IAS 32 'Financial Instruments: Presentation' ("IAS 32") 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 | Master netting agreements and other | Cash & security collateral | Net amount |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2017 | | | | | | |
| Financial assets: | | | | | | |
| Securities purchased under agreements to resell ^(a) | 284,606,993 | (149,221,382) | 135,385,611 | (11,525,344) | (114,161,493) | 9,698,774 |
| Securities borrowed ^(a) | 27,072,599 | — | 27,072,599 | (9,100,106) | (15,846,294) | 2,126,199 |
| Financial assets held for trading ^(b) | 362,065,083 | (21,806,470) | 340,258,613 | (190,867,129) | (24,340,531) | 125,050,953 |
| Total | 673,744,675 | (171,027,852) | 502,716,823 | (211,492,579) | (154,348,318) | 136,875,926 |
| Financial liabilities: | | | | | | |
| Securities sold under agreements to repurchase ^(a) | 224,158,540 | (149,221,382) | 74,937,158 | (11,525,344) | (61,149,668) | 2,262,146 |
| Securities loaned ^(a) | 12,550,040 | — | 12,550,040 | (9,104,687) | (3,170,688) | 274,665 |
| Financial liabilities held for trading ^(b) | 330,722,398 | (22,434,330) | 308,288,068 | (182,391,533) | (20,120,713) | 105,775,822 |
| Total | 567,430,978 | (171,655,712) | 395,775,266 | (203,021,564) | (84,441,069) | 108,312,633 |

| | Effects of offsetting on balance sheet | | | Related amounts not offset | | |
|---|--|----------------------|---------------------------------------|-------------------------------------|----------------------------|--------------------|
| | Gross amounts | Amounts offset | Net amounts reported on balance sheet | Master netting agreements and other | Cash & security collateral | Net amount |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2016 | | | | | | |
| Financial assets: | | | | | | |
| Securities purchased under agreements to resell | 244,294,408 | (113,877,556) | 130,416,852 | (6,449,414) | (119,614,194) | 4,353,244 |
| Securities borrowed ^(a) | 25,831,106 | — | 25,831,106 | (17,174,407) | (6,518,661) | 2,138,038 |
| Financial assets held for trading ^(b) | 342,284,385 | (19,238,577) | 323,045,808 | (191,509,111) | (19,626,339) | 111,910,358 |
| Total | 612,409,899 | (133,116,133) | 479,293,766 | (215,132,932) | (145,759,194) | 118,401,640 |
| Financial liabilities: | | | | | | |
| Securities sold under agreements to repurchase ^(a) | 175,534,827 | (113,877,556) | 61,657,271 | (6,449,414) | (53,019,937) | 2,187,920 |
| Securities loaned ^(a) | 20,133,325 | — | 20,133,325 | (17,174,407) | (2,101,111) | 857,807 |
| Financial liabilities held for trading ^(b) | 313,994,831 | (20,469,085) | 293,525,746 | (191,509,111) | (17,046,020) | 84,970,615 |
| Total | 509,662,983 | (134,346,641) | 375,316,342 | (215,132,932) | (72,167,068) | 88,016,342 |

(a) The fair value of securities purchased under agreements to resell and securities borrowed accepted as collateral that the Company is permitted to sell or re-pledge in the absence of default, prior to netting adjustments, is \$312,126 million (2016: \$270,255 million). The fair value of securities sold under agreements to repurchase and securities loaned pledged to secure liabilities, prior to netting adjustments, is \$223,997 million (2016: \$188,793 million).

(b) Included within 'amounts offset' are the respective collateral payable and receivables with certain clearing counterparties.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions

During the year, the Company was involved in the following pension schemes in the UK:

- JPMorgan UK Pension Plan ("UKP") - a defined contribution scheme (as a participating employer);
- JPMC UK Retirement Plan - a defined benefit scheme; and
- JPMorgan Cazenove (1987) Pension Scheme ("UKS") - a defined benefit scheme (as a participating employer).

In Europe, the Company also operates defined benefit and defined contribution schemes for its employers in the overseas branches 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 as at 31 December 2017 amounted to \$4,178,000 (2016: \$9,488,000). The charge for the year through the income statement was \$2,941,000 (2016: \$2,094,000), and total gain recognised through statement of comprehensive income was \$4,542,000 (2016: loss of 1,636,000).

JPMorgan UK Pension Plan

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

JPMC UK Retirement Plan

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, it 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 JPMorgan Chase undertaking which had previously been a participating employer in the plan. Under the terms of this agreement, the Company became responsible for 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. The Company 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 Company 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 the Company; or
- Any other date agreed between the Company and the Trustee of the Plan.

JPMorgan Cazenove (1987) Pension Scheme

The JPMorgan Cazenove (1987) Pension Scheme ("UKS") is an ongoing defined benefit plan. The Company has been a principal employer in relation to the UKS plan since August 2012. In May 2016, the Company agreed to and became responsible for 97.24% of the liabilities in respect of the UKS, taking over the obligation from its indirect subsidiary, JPMorgan Cazenove Service Company.

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

| | 2017 | 2016 |
|---------------------------|-------------|-------------|
| | % per annum | % per annum |
| Discount rate | 2.4 | 2.5 |
| Rate of salary increase | N/A* | N/A* |
| Rate of price inflation | 3 | 3.5 |
| Rate of pension increases | 3.4 | 3 |

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

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions (continued)

JPMorgan Cazenove (1987) Pension Scheme (continued)

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

| | 2017 | 2016 |
|--|--------------|--------------|
| | years | years |
| Longevity at age 65 for current pensioners | | |
| - Male | 24.2 | 24.1 |
| - Female | 25.2 | 25.1 |
| Longevity at age 65 for future pensioners | | |
| - Male | 26.9 | 26.7 |
| - Female | 27 | 26.9 |

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

| | 2017 | 2016 |
|---|---------------|---------------|
| | \$'000 | \$'000 |
| Benefit obligation at beginning of the year | 534,817 | 496,540 |
| Current service costs | — | 775 |
| Interest costs | 13,721 | 16,273 |
| Actuarial (gain)/ loss | (8,736) | 138,244 |
| Benefits paid from plan/Company | (32,222) | (23,140) |
| Exchange rate changes | 49,763 | (93,875) |
| Benefit obligation at end of the year | 557,343 | 534,817 |

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

| | 2017 | 2016 |
|---|---------------|---------------|
| | \$'000 | \$'000 |
| Fair value of plan assets at beginning of year | 434,806 | 450,857 |
| Expected return on plan assets | 11,156 | 14,891 |
| Actuarial gain on plan assets | 18,594 | 65,518 |
| Employer contributions (including employer direct benefit payments) | 4,330 | 7,866 |
| Administrative expenses paid from plan assets | (293) | (566) |
| Benefits paid from plan/Company | (32,222) | (23,140) |
| Exchange rate changes | 41,327 | (80,620) |
| Fair value of plan assets at end of the year | 477,698 | 434,806 |

The equity investments and bonds which are held in the plan assets are quoted and are valued at the current bid price in accordance with IAS 19.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions (continued)

JPMorgan Cazenove (1987) Pension Scheme (continued)

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

| | 2017 | | | 2016 | | |
|--------------------------------------|----------------------|------------------------|------------------------|----------------------|------------------------|------------------------|
| | Change in assumption | Increase in assumption | Decrease in assumption | Change in assumption | Increase in assumption | Decrease in assumption |
| At 31 December | % | % per annum | % per annum | % | % per annum | % per annum |
| Discount rate | 0.25% | (5.49)% | 5.77 % | 0.25% | (5.44)% | 5.72 % |
| Rate of salary increase | 0.25% | N/A* | N/A* | 0.25% | N/A* | N/A* |
| Rate of pension increase | 0.25% | 1.89 % | (1.85)% | 0.25% | 3.59 % | (3.53)% |
| Rate of price inflation | 0.25% | 3.16 % | (3.17)% | 0.25% | 3.16 % | (3.17)% |
| Post-retirement mortality assumption | Increase by one year | 3.87 % | — | Increase by one year | 3.87 % | — |

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

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

The expected return on scheme assets is determined by considering the expected returns available on the assets underlying the current investment policy. Expected yields on fixed interest investments are based on gross redemption yields as at the balance sheet date. Expected returns on equity investments reflect long-term real rates of return experienced in the respective markets.

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:

| | 2017 | 2016 |
|--|----------|----------|
| | \$'000 | \$'000 |
| Present value of wholly or partly funded obligations | 557,343 | 534,817 |
| Fair value of plan assets | 477,698 | 434,806 |
| Deficit for funded plans - net liability | 79,645 | 100,011 |
| Experience adjustments on plan assets | (18,594) | (65,518) |
| Experience adjustments on plan liabilities | (13,548) | (6,661) |

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

| | 2017 | 2016 |
|---|----------|----------|
| | \$'000 | \$'000 |
| Current service cost | — | 775 |
| Interest cost | 13,721 | 16,273 |
| Expected return on plan assets | (11,156) | (14,891) |
| Administrative expenses paid from plan assets | 293 | 566 |
| Total pension cost recognised in the income statement | 2,858 | 2,723 |
| Exchange rate changes | 8,436 | (13,255) |
| Net amount recognised in the income statement | 11,294 | (10,532) |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions (continued)

JPMorgan Cazenove (1987) Pension Scheme (continued)

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

| | 2017 | 2016 |
|--|--------|----------|
| | \$'000 | \$'000 |
| Actuarial gain/(loss) immediately recognised | 27,329 | (72,726) |

The asset allocation of the UKS defined benefit schemes was as follows:

| | 2017 | 2016 |
|-------------------|------------------------------|------------------------------|
| | Percentage of plan assets | Percentage of plan assets |
| | (%) | (%) |
| Equity securities | 38.4 | 35.6 |
| Bond securities | 61.2 | 62.4 |
| Cash | 0.4 | 2 |
| | 100 | 100 |

31. Share based payments

The Firm 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 2017, 67 million shares of common stock were available for issuance through May 2019 (2016: 78 million shares). The LTIP is the only active plan under which the Firm is currently granting stock-based incentive awards. The LTIP, plus prior Firm plans and plans assumed as the result of acquisitions, are referred to collectively as the "LTI Plans" and such plans constitute the Firm'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 of the Company 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, 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

31. 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. The 2013 grants of SARs to key employees vest ratably 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 and SARs outstanding as at 31 December:

| | 31 December 2017 | | | 31 December 2016 | | |
|--------------------------|---------------------|---|--|---------------------|---|--|
| | Outstanding '000 | Weighted average exercise price \$ | Weighted average remaining contractual life (in years) | Outstanding '000 | Weighted average exercise price \$ | Weighted average remaining contractual life (in years) |
| Range of exercise prices | | | | | | |
| \$min - \$20.00 | 175 | 19.49 | 1.05 | 75 | 19.49 | 2.05 |
| \$20.01 - \$35.00 | — | — | — | — | — | — |
| \$35.01 - \$50.00 | 806 | 43.56 | 3.00 | 1,144 | 43.32 | 4.08 |
| \$50.01 and above | — | — | — | — | — | — |
| Total | 981 | 39.27 | 2.65 | 1,219 | 41.86 | 3.96 |

Broad-based employee stock options

No broad-based employee stock options were granted in 2017 or 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 become exercisable over various periods and generally expire 10 years after the grant date.

The weighted average share price during the year ended 31 December 2017 was \$92.01 (2016: \$65.62).

The total expense for the year relating to share based payments was \$310 million (2016: \$249 million), all of which relates to equity settled share based payments.

32. Transfers of financial assets

In the course of its normal business activities, the Company 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, and 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. In substance, these transactions constitute 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 Company remains exposed to interest and credit risk on these instruments which they are contractually required to repurchase at a later date. 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.

The Company 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 Company 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

32. Transfers 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

| | Fair value of the assets | | Carrying amount of the related liability | |
|-----------------------------------|--------------------------|-----------|--|-----------|
| | 2017 | 2016 | 2017 | 2016 |
| | \$'000 | \$'000 | \$'000 | \$'000 |
| Financial assets held for trading | 1,467,000 | 5,720,000 | 1,303,000 | 5,268,000 |

Continuing involvement in financial assets that have been derecognised

In some cases, the Company transfers financial assets that it derecognises entirely even though it may have continuing involvement in them. This typically happens when the Company has sold a financial asset to a SPE with limited other assets and enters into a derivative with the SPE 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 Company with such SPEs (including those with such SPEs to which the Company did not transfer any financial assets) amounted to \$14.3 billion and \$982 million as of 2017 (\$13.2 billion and \$722 million as of 2016).

33. Financial risk management

Disclosures in relation to the Company's risk management and capital management have been presented in the Strategic report on pages 2 - 26 which forms part of these financial statements.

APPENDIX II

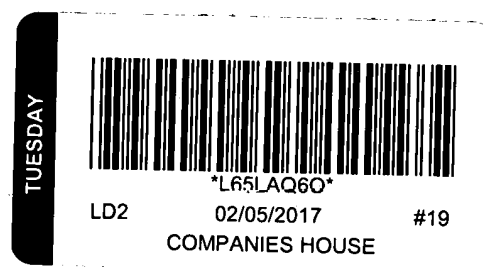
Annual Report of J.P. Morgan Securities plc for the financial year ended 2016

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J.P. MORGAN SECURITIES PLC

(Registered Number: 02711006)

Annual report for the year ended 31 December 2016



Independent auditors' report to the members of J.P. Morgan Securities plc

Report on the financial statements

Our opinion

In our opinion J.P. Morgan Securities plc's financial statements (the "financial statements"):

- give a true and fair view of the state of the company's affairs as at 31 December 2016 and of its 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 Annual report (the "Annual Report"), comprise:

- the Balance sheet as at 31 December 2016;
- the Income statement and Statement of comprehensive income for the year then ended;
- the Statement of cash flows for the year then ended;
- the Statement 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 101 "Reduced Disclosure Framework", 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.

Opinions on other matters 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, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

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.

Independent auditors' report to the members of J.P. Morgan Securities plc

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 25, 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 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 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 (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors

London

24 April 2017

J.P. MORGAN SECURITIES PLC

Income statement

| Year ended 31 December | | 2016 | 2015 |
|--|-----------|------------------|------------------|
| | Notes | \$'000 | \$'000 |
| Interest and similar income | 7 | 1,930,673 | 1,927,039 |
| Interest expense and similar charges | 7 | (1,339,091) | (1,372,400) |
| Net interest income | 7 | 591,582 | 554,639 |
| Fee and commission income | | 2,516,922 | 2,593,499 |
| Fee and commission expense | 8 | (848,261) | (736,165) |
| Trading profit | | 4,142,970 | 3,387,897 |
| Dividend income | | 600,000 | 500,000 |
| Total operating income | | 7,003,213 | 6,299,870 |
| Administrative expenses | | (2,897,111) | (3,160,833) |
| Impairment charge | 20 | (117,359) | — |
| Depreciation | | (1,290) | (803) |
| Profit on ordinary activities before taxation | 10 | 3,987,453 | 3,138,234 |
| Tax on profit on ordinary activities | 11 | (841,809) | (463,288) |
| Profit for the financial year | | 3,145,644 | 2,674,946 |

The profit for the year resulted from continuing operations.

Statement of comprehensive income

| Year ended 31 December | | 2016 | 2015 |
|--|-------|------------------|------------------|
| | Notes | \$'000 | \$'000 |
| Profit for the financial year | | 3,145,644 | 2,674,946 |
| Other comprehensive income: items that will not be reclassified to profit or loss | | | |
| Actuarial (loss)/gain on pension schemes | 30 | (74,362) | 20,166 |
| Tax effect of movement in pension reserve | 12 | 18,908 | (270) |
| Total comprehensive income for the year | | 3,090,190 | 2,694,842 |

The notes on pages 35 - 72 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Balance sheet

| 31 December | | 2016 | 2015 |
|--|-------|--------------------|--------------------|
| | Notes | \$'000 | \$'000 |
| Assets | | | |
| Cash and balances at central banks | | 20,597,168 | 65,809 |
| Loans and advances to banks | 13 | 6,123,936 | 4,673,268 |
| Loans and advances to customers | 14 | 3,100,053 | 3,292,824 |
| Securities purchased under agreements to resell | 15 | 130,416,852 | 136,836,484 |
| Securities borrowed | 15 | 25,831,106 | 15,038,887 |
| Financial assets held for trading | 16 | 323,045,808 | 299,607,822 |
| Financial assets designated at fair value through profit or loss | 17 | 315,659 | 125,285 |
| Debtors | 18 | 56,473,025 | 38,162,891 |
| Other assets | 19 | 584,231 | 582,074 |
| Investments in JPMorgan Chase undertakings | 20 | 3,341,207 | 3,458,789 |
| Tangible fixed assets | | 3,582 | 2,137 |
| Total assets | | 569,832,627 | 501,846,270 |
| Liabilities | | | |
| Securities sold under agreements to repurchase | 15 | 61,657,271 | 65,522,171 |
| Securities loaned | 15 | 20,133,325 | 11,315,697 |
| Financial liabilities held for trading | 22 | 293,525,746 | 263,358,470 |
| Trade creditors | 23 | 29,755,510 | 25,486,331 |
| Amounts owed to JPMorgan Chase undertakings | | 99,493,803 | 78,640,308 |
| Other liabilities | 23 | 25,819,149 | 20,137,485 |
| Total liabilities | | 530,384,804 | 464,460,462 |
| Equity | | | |
| Called-up share capital | 24 | 17,546,050 | 17,546,050 |
| Share premium account | | 9,950,724 | 9,950,724 |
| Other reserves | | 1,797,872 | 1,831,501 |
| Retained earnings | | 10,153,177 | 8,057,533 |
| Total equity | | 39,447,823 | 37,385,808 |
| Total liabilities and equity funds | | 569,832,627 | 501,846,270 |

Approved and authorised for issue by the Board of Directors on 19 April 2017 and signed on its behalf by:



Sir Winfried Bischoff
Chairman & Non-Executive Director



Daniel Pinto
Chief Executive Officer & Director

24 April 2017

The notes on pages 35 - 72 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Statement of changes in equity

| | Note | Called-up share capital \$'000 | Share premium account \$'000 | Capital contribution reserve \$'000 | Pension reserve \$'000 | Other reserves \$'000 | Retained earnings \$'000 | Total equity \$'000 |
|---|------|---|---------------------------------------|--|------------------------------|-----------------------------|--------------------------------|---------------------------|
| Balance as at 1 January 2015 | | 16,884,410 | 8,117,257 | 1,583,800 | (10,021) | 221,404 | 6,262,587 | 33,059,437 |
| Profit for the financial year | | — | — | — | — | — | 2,674,946 | 2,674,946 |
| Other comprehensive income for the year: | | | | | | | | |
| Actuarial gain on pension schemes | 30 | — | — | — | 20,166 | — | — | 20,166 |
| Tax effect on movement in pension reserve | | — | — | — | (270) | — | — | (270) |
| Total comprehensive income for the year | | — | — | — | 19,896 | — | 2,674,946 | 2,694,842 |
| Issuance of shares ^(a) | 24 | 661,640 | 1,833,467 | — | — | — | — | 2,495,107 |
| Capital contribution | 20 | — | — | 4,815 | — | — | — | 4,815 |
| Dividends paid | 25 | — | — | — | — | — | (880,000) | (880,000) |
| Movement in other reserves ^{(a)(b)} | | — | — | — | — | 11,607 | — | 11,607 |
| Balance as at 31 December 2015 | | 17,546,050 | 9,950,724 | 1,588,615 | 9,875 | 233,011 | 8,057,533 | 37,385,808 |
| Profit for the financial year | | — | — | — | — | — | 3,145,644 | 3,145,644 |
| Other comprehensive income for the year: | | | | | | | | |
| Actuarial loss on pension schemes | 30 | — | — | — | (74,362) | — | — | (74,362) |
| Tax effect on movement in pension reserve | | — | — | — | 18,908 | — | — | 18,908 |
| Total comprehensive income for the year | | — | — | — | (55,454) | — | 3,145,644 | 3,090,190 |
| Dividends paid | 25 | — | — | — | — | — | (1,050,000) | (1,050,000) |
| Tax effect on share based payment awards | | — | — | — | — | 17,677 | — | 17,677 |
| Movement in other reserves | | — | — | — | — | 4,148 | — | 4,148 |
| Balance as at 31 December 2016 | | 17,546,050 | 9,950,724 | 1,588,615 | (45,579) | 254,836 | 10,153,177 | 39,447,823 |

(a) Amount includes \$4 million reclassification from share premium account to other reserves to better reflect the substance of the balance.

(b) An amount of \$3 million of current and deferred tax was credited to other reserves in 2015.

The notes on pages 35 - 72 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Statement of cash flows

| Year ended 31 December | | 2016 | 2015 |
|--|-------|-------------------|--------------------|
| | Notes | \$'000 | \$'000 |
| Cash flows from operating activities | | | |
| Cash generated from/(used in) operations | 26 | 3,464,344 | (5,479,384) |
| Income taxes paid | | (339,504) | (128,673) |
| Net cash generated from/(used in) operating activities | | 3,124,840 | (5,608,057) |
| Cash flow used in investing activities | | | |
| Purchase and disposals of tangible fixed assets | | (2,735) | (715) |
| Disposal/(acquisition) of investments in JPMorgan Chase undertakings | | 517 | (223) |
| Net cash used in investing activities | | (2,218) | (938) |
| Cash flow from financing activities | | | |
| Capital contribution | 20 | — | 4,815 |
| Issuance of share capital | 24 | — | 2,495,107 |
| Amounts owed to JPMorgan Chase undertakings | | 20,853,495 | 3,255,692 |
| Dividends paid | 25 | (1,050,000) | (880,000) |
| Net cash generated from financing activities | | 19,803,495 | 4,875,614 |
| Net increase/(decrease) in cash and cash equivalents | | 22,926,117 | (733,381) |
| Cash and cash equivalents at the beginning of the year | | 4,739,077 | 5,459,050 |
| Exchange (losses)/gains on cash and cash equivalents | | (944,090) | 13,408 |
| Cash and cash equivalents at the end of the year | | 26,721,104 | 4,739,077 |
| Cash and cash equivalents consist of: | | | |
| Cash and balances at central banks | | 20,597,168 | 65,809 |
| Loans and advances to banks, due within three months or less | | 6,123,936 | 4,673,268 |
| Cash and cash equivalents | | 26,721,104 | 4,739,077 |

The notes on pages 35 - 72 form an integral part of these financial statements.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements

1. General information

The Company is a public limited company and is incorporated and domiciled in England and Wales. The address of its registered office is 25 Bank Street, Canary Wharf, London, E14 5JP, England. The Company's immediate parent undertaking is J.P. Morgan Chase International Holdings, incorporated in England and Wales. The parent undertaking of the smallest group in which the Company's results are consolidated is J.P. Morgan Chase (UK) Holdings Limited. The Company's ultimate parent undertaking and controlling party is JPMorgan Chase & Co. ("JPMorgan Chase" or the "Firm"), which is incorporated in the state of Delaware in the United States of America. JPMorgan Chase & Co. is also the parent undertaking of the largest group in which the results of the Company are consolidated. The largest and smallest parent groups' consolidated financial statements can be obtained from the Company's registered office.

2. Basis of preparation

These financial statements have been prepared in accordance with Financial Reporting Standard 101, 'Reduced Disclosure Framework' ("FRS 101"). FRS 101 applies the recognition and measurement requirements of International Financial Reporting Standards ("IFRS") as adopted by the European Union, with reduced disclosures.

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 from the requirements of IFRS as adopted by the EU have been applied in the preparation of these financial statements, in accordance with FRS 101:

- Certain share based payment disclosures in respect of Firm equity instruments (IFRS 2 'Share-based payment' paragraphs 45(b) and 46 to 52);
- Comparative information disclosures for the following (paragraph 38 of IAS 1 'Presentation of financial statements' ("IAS 1")):
 - reconciliation of share capital (paragraph 79(a)(iv) of IAS 1);
 - reconciliation of property, plant and equipment (paragraph 73(e) of IAS 16 'Property, plant and equipment');
 - reconciliation of intangible assets (paragraph 118(e) of IAS 38 'Intangible assets');
- Statement of compliance to IFRSs - Paragraph 16, IAS 1;
- Third balance sheet on retrospective accounting policy changes, restatements, or reclassifications (paragraph 40A-D, IAS 1);
- Disclosures in relation to new or revised standards issued but not yet effective (paragraph 30 and 31, IAS 8, 'Accounting policies, changes in accounting estimates and errors');
- Key management compensation disclosures (paragraph 17, IAS 24 'Related Party Disclosures' ("IAS 24")); and
- Related party transactions with wholly owned Firm undertakings (IAS 24).

J.P. MORGAN SECURITIES PLC

Strategic report (continued)

3. 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.

4. 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 financial statements:

Fair value measurement

The Company 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 Company. For instruments valued using internally developed models that use significant unobservable inputs are 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 Company'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 Company, see note 28.

The use of methodologies or assumptions different than those used by the Company could result in a different estimate of fair value at the reporting date. For a detailed discussion of the Company'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 30.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. 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.

5.1 Consolidation

The Company is a subsidiary undertaking of J.P. Morgan Capital Holdings Limited, a company incorporated in England and Wales and of its ultimate parent, JPMorgan Chase & Co. a company incorporated in the United States of America. It is included in the consolidated financial statements of JPMorgan Chase & Co. which are publicly available. Therefore, the Company has elected not to prepare group financial statements in accordance with the dispensation set out in Section 401 of the Companies Act 2006.

5.2 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 income statement.

Non-monetary items denominated in foreign currencies that are stated at historical cost are translated into U.S. dollars at the exchange rate ruling 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 income statement except for differences arising on available-for-sale non-monetary financial assets, which are included in the financial assets available-for-sale reserve.

5.3 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.

5.4 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.

5.5 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. Such dividends are recognised in other comprehensive income.

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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.6 Financial assets and financial liabilities

The Company classifies its financial assets and financial liabilities in the following categories on initial recognition: financial assets and financial liabilities held for trading, financial assets and financial liabilities designated at fair value through profit or loss, and loans and receivables and financial liabilities held at amortised cost. The Company recognises derivatives on its balance sheet when it becomes a party to the contractual provisions of the instruments. Loans and receivables and financial liabilities at amortised cost are recognised when the Company becomes a party to the contractual provisions of the instrument. Regular way purchases and sales of financial assets are also recognised on the trade-date, the date on which the Company commits to purchase or sell the asset.

i. Financial assets and financial liabilities held for trading

The Company 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, loans 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 unrealised trading gains and in financial liabilities held for trading are unrealised trading 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 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 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.

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

Financial assets and financial liabilities that the Company 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 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 profit or loss 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 reclassified.

Financial assets or financial liabilities are designated 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 Company manages and evaluates on a fair value basis; or (c) relates to an instrument that 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 Company 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. Loans and receivables and financial liabilities at amortised cost

Loans and receivables includes loans and advances to banks, loans and advances to customers and debtors and 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 at 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, less any provision for impairment losses. Interest is recognised in the income statement as 'Interest and similar income' using the effective interest rate method.

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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.7 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 Company classifies its assets and liabilities according to a hierarchy that has been established under IFRS for disclosure of fair value measurements. 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.

Further details on fair value measurements are provided in note 28 to the financial statements.

5.8 Derecognition of financial assets and financial liabilities

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

- a) the Company has transferred substantially all the risks and rewards of ownership of the asset; or
- b) the Company 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 Company 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 Company 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 Company from selling or pledging the underlying financial asset.

5.9 Impairment of financial assets

The Company assesses at each balance sheet date whether there is any objective evidence that a financial asset or group of financial assets is impaired. A financial asset or portfolio of financial assets is deemed to be impaired if, and only if, there is objective evidence of impairment as a result of one or more events that has occurred after the initial recognition of the asset and that 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.

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 loans and advances to customers when the Company 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.9 Impairment of financial assets (continued)

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 income statement.

5.10 Impairment of non-financial assets

Non-financial assets that are subject to amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are largely independent cash inflows (cash-generating units). Prior impairments of non-financial assets (other than goodwill) are reviewed for possible reversal at each reporting date.

5.11 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.

5.12 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.

5.13 Offsetting financial assets and liabilities

Financial assets and financial liabilities are offset and the net amount reported in the balance sheet when there is currently 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 Company or the counterparty.

5.14 Recognition of deferred day one profit and loss

The Company enters 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.15 Investments in JPMorgan Chase undertakings

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

5.16 Business combinations

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.

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.

5.17 Cash and cash equivalents

Cash and cash equivalents include cash and balances at central banks and loans and advances to banks with maturities of three months or less.

5.18 Current and deferred income 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 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.

5.19 Provisions and contingent liabilities

Provisions are recognised when the Company 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.

A contingent liability is a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the company, or a present obligation that arises from past events but is not recognised because either an outflow of economic benefits is not probable or the amount of the obligation cannot be reliably measured. Contingent liabilities are not recognised in the financial statements; however disclosure is made unless the probability of settlement is remote.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

5. Significant accounting policies (continued)

5.20 Pensions and other post-retirement benefits

The Company operates both defined benefit and defined contribution schemes for its employees. The Company also operates defined benefit and defined contribution schemes for employees in the European branches.

i. Defined contribution scheme

A defined contribution plan is a pension plan under which the Company pays fixed contributions into a separate entity. The Company has no legal or constructive obligations 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 income statement on an accrual basis.

ii. Defined benefit scheme

For defined benefit schemes, the service cost of providing retirement benefits to employees during the year is charged to the income statement in accordance with IAS 19 'Employee benefits'. 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 in equity in the period in which they occur.

5.21 Share-based payment awards

Share-based payment awards may be made to employees of the Company 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 Company 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 Company 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.

6. Segmental analysis

The Company is not in scope of IFRS 8 'Operating segments' and therefore has not provided any segmental analysis. The Company has one class of business, the provision of international Corporate and Investment Banking services within Europe, the Middle East and Africa ("EMEA"). The Company operates six branches outside of the UK, but these do not generate material revenues.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

7. Interest income and interest expense

Interest income and interest expense are recorded in the Income statement and classified based on the nature of the underlying asset or liability. Interest income and interest expense includes the current-period interest accruals within interest income or interest expense, as applicable.

Details of interest income and interest expense were as follows:

| | 2016 | 2015 |
|--|----------------|----------------|
| | \$'000 | \$'000 |
| Net interest income/(expense) | | |
| Financial assets and liabilities held for trading | 472,739 | 514,909 |
| Securities purchased under agreements to resell and securities sold under agreements to repurchase | 400,577 | 279,492 |
| Securities borrowed and securities loaned | (275,811) | (168,486) |
| Other interest income and expense * | (5,923) | (71,276) |
| Net interest income | 591,582 | 554,639 |

* 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 ended 31 December 2016 includes \$286 million income and \$370 million expense from and to JPMorgan Chase undertakings (2015: \$223 million income, \$318 million expense).

8. 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 Company 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

9. Directors' emoluments

| | 2016 | 2015 |
|---|--------|--------|
| | \$'000 | \$'000 |
| Emoluments | 4,461 | 6,322 |
| Total contributions to a defined contribution plan | 14 | 17 |
| Total value of long term incentive plans for all directors | 3,784 | 2,033 |
| Compensation to non-executive directors | 851 | 768 |
| Number of directors who exercised share options | 4 | 2 |
| Number of directors with shares received or receivable under LTIPs | 2 | 1 |
| Number of directors to whom defined contribution pension rights accrued | 5 | 4 |

In accordance with the Companies Act 2006, the directors' emoluments above represent the proportion paid or payable in respect of qualifying services to the Company only. Directors also received emoluments for non-qualifying services, which are not required to be disclosed.

Highest paid director

The emoluments (excluding amounts paid or due to directors under long-term incentive plans ("LTIP's") and the value of share options granted or exercised by directors) of the highest paid director were \$3,091,725 (2015: \$4,413,241).

The contribution to the defined contribution scheme for the highest paid director during 2016 was \$5,101 (2015: \$7,540). The highest paid director exercised share options during 2016 and 2015. Shares were received or are receivable by the highest paid director under long-term incentive plans during 2016 (shares were received or receivable by the highest paid director under long term incentive plans during 2015).

10. Profit on ordinary activities before taxation

| | 2016 | 2015 |
|---|---------|---------|
| | \$'000 | \$'000 |
| Profit on ordinary activities before taxation is stated after charging: | | |
| Depreciation of tangible fixed assets | 1,290 | 803 |
| Auditors' remuneration for the audit of the Company's annual financial statements | 2,468 | 2,794 |
| Audit-related assurance services | 849 | 50 |
| Wages and salaries | 733,942 | 717,530 |
| Social security costs | 138,753 | 129,935 |
| Other pension and benefits costs | 59,262 | 62,358 |
| Share-based awards | 249,203 | 231,034 |

The average monthly number of persons providing services to the Company during the year was 1,586 (2015: 1,501). The average monthly number of staff employed by the European branches during the year was 138 (2015: 134).

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

11. Tax on profit on ordinary activities

| | 2016 | 2015 |
|---|----------------|-----------------|
| | \$'000 | \$'000 |
| (a) Analysis of tax charge for the year | | |
| Current taxation | | |
| UK Corporation tax on profit for the year | 831,585 | 359,549 |
| Overseas taxation | 169,405 | 230,551 |
| Less: Double tax relief | (180,277) | (170,608) |
| Adjustments in respect of previous years | 25,385 | 57,836 |
| Current tax expense for the year | 846,098 | 477,328 |
| Deferred tax (note 12): | | |
| Origination and reversal of temporary differences | 8,137 | 5,697 |
| Adjustment in respect of previous period | (11,844) | — |
| Effect of rate change on opening balance | (582) | (19,737) |
| Deferred tax credit for the year | (4,289) | (14,040) |
| Total tax expense for the year | 841,809 | 463,288 |

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

The current tax charge for the year differs from the standard rate of corporation tax in the UK including banking surcharge (28%). The differences are explained below:

| | 2016 | 2015 |
|--|----------------|----------------|
| | \$'000 | \$'000 |
| Profit on ordinary activities before taxation | 3,987,453 | 3,138,234 |
| Profit on ordinary activities before taxation multiplied by standard rate of corporation tax in UK of 28.00% (2015: 20.25%). | 1,116,487 | 635,385 |
| Effects of: | | |
| Non-deductible expenses | 77,817 | 46,624 |
| Income not taxable | (52,792) | (4,781) |
| Dividend income | (168,000) | (101,250) |
| Transfer pricing adjustments | 10,381 | (53,195) |
| Other adjustment | 2,577 | (93) |
| Adjustments in respect of previous years | 13,541 | 57,836 |
| Group relief claimed for nil consideration | (146,748) | (157,444) |
| Foreign taxation suffered | (10,873) | 59,943 |
| Impact of change in rate on deferred tax | (581) | (19,737) |
| Total tax expense for the year | 841,809 | 463,288 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

12. Deferred tax

The analysis of deferred tax assets and deferred tax liabilities is as follows:

| | 2016 | 2015 |
|---|---------|---------|
| | \$'000 | \$'000 |
| Deferred tax assets: | | |
| Deferred tax assets to be recovered after more than 12 months | 96,747 | 73,809 |
| Deferred tax asset to be recovered within 12 months | 48,373 | 31,340 |
| | 145,120 | 105,149 |
| Deferred tax liabilities: | | |
| Deferred tax liability to be reversed after more than 12 months | (8,213) | (9,386) |
| Deferred tax liability to be reversed within 12 months | (1,173) | (1,173) |
| Deferred tax asset (net) | 135,734 | 94,590 |

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

| | 2016 | 2015 |
|--|---------|---------|
| | \$'000 | \$'000 |
| As at 1 January | 94,590 | 68,150 |
| Depreciation (in excess)/short of capital allowances | (576) | 1,073 |
| Deferral of share-based payments | 24,152 | 29,089 |
| Other adjustment | 17,568 | (3,722) |
| As at 31 December | 135,734 | 94,590 |

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

| Deferred tax asset | Accelerated capital allowances | Share-based payments | Other | Total |
|---|--------------------------------|----------------------|---------|---------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 1 January 2015 | 2,570 | 52,084 | 13,496 | 68,150 |
| Credited/(charged) to the income statement | 1,073 | 16,419 | (3,452) | 14,040 |
| Credited directly to equity | — | 12,670 | — | 12,670 |
| Charged directly to other comprehensive income | — | — | (270) | (270) |
| At 31 December 2015 | 3,643 | 81,173 | 9,774 | 94,590 |
| (Charged)/credited to the income statement | (576) | 6,475 | (1,610) | 4,289 |
| Credited directly to equity | — | 17,677 | 270 | 17,947 |
| Credited directly to other comprehensive income | — | — | 18,908 | 18,908 |
| At 31 December 2016 | 3,067 | 105,325 | 27,342 | 135,734 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

13. Loans and advances to banks

| | 2016 | 2015 |
|-----------------------------|-----------|-----------|
| | \$'000 | \$'000 |
| Loans and advances to banks | 6,123,936 | 4,673,268 |

Included within loans and advances to banks is \$4.3 billion (2015: \$1.8 billion) held with JPMorgan Chase undertakings.

The Company 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 Company 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) of which \$4.5 billion is included in loans and advances to banks and \$8.0 billion included in Debtors.

14. Loans and advances to customers

The Company's loan portfolio is within the wholesale loan segment. Wholesale loans include loans made to a variety of customers, such as large corporates and institutional clients.

| | 2016 | 2015 |
|---------------------------------|-----------|-----------|
| | \$'000 | \$'000 |
| Loans and advances to customers | 3,100,053 | 3,292,824 |

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

JPMS plc enters into resale agreements, repurchase agreements, securities borrowed transactions and securities loaned transactions (collectively, "securities financing agreements") primarily to finance the Company'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 Company to credit and liquidity risk. To manage these risks, the Company 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.

In resale agreements and securities borrowed transactions, the Company 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 Company typically enters 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 Company'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.

J.P. MORGAN SECURITIES PLC
Notes to the financial statements (continued)

15. Securities financing activities (continued)

| | 2016 | 2015 |
|---|--------------------|--------------------|
| | \$'000 | \$'000 |
| Securities purchased under agreements to resell | 130,416,852 | 136,836,484 |
| Securities borrowed | 25,831,106 | 15,038,887 |
| | 156,247,958 | 151,875,371 |
| Securities sold under agreements to repurchase | 61,657,271 | 65,522,171 |
| Securities loaned | 20,133,325 | 11,315,697 |
| | 81,790,596 | 76,837,868 |

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

| | 2016 | 2015 |
|---|-------------------|-------------------|
| | \$'000 | \$'000 |
| Securities purchased under agreements to resell | 41,017,708 | 66,901,757 |
| Securities borrowed | 20,449,114 | 10,305,219 |
| | 61,466,822 | 77,206,976 |
| Securities sold under agreements to repurchase | 12,366,287 | 27,579,858 |
| Securities loaned | 18,205,412 | 8,869,782 |
| | 30,571,699 | 36,449,640 |

16. Financial assets held for trading

In connection with its client-driven market-making activities, the Company transacts in debt and equity instruments and derivatives.

| | 2016 | 2015 |
|-----------------------------|--------------------|--------------------|
| | \$'000 | \$'000 |
| Debt and equity instruments | 89,327,429 | 90,975,293 |
| Derivative receivables | 233,718,379 | 208,632,529 |
| | 323,045,808 | 299,607,822 |

Financial assets held for trading includes \$124.9 billion held with JPMorgan Chase undertakings (2015:\$125.9 billion).

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

| | 2016 | 2015 |
|--------------------|----------------|----------------|
| | \$'000 | \$'000 |
| Equity instruments | 144,728 | 125,285 |
| Loans | 170,931 | — |
| | 315,659 | 125,285 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

18. Debtors

| | 2016 | 2015 |
|---------------|------------|------------|
| | \$'000 | \$'000 |
| Trade debtors | 22,534,256 | 17,857,938 |
| Other debtors | 33,938,769 | 20,304,953 |
| | 56,473,025 | 38,162,891 |

Trade debtors mainly consists of unsettled trades. Other debtors includes \$33.5 billion of cash collateral provided on derivatives (2015: \$19.0 billion). A review of the Company's debtors and trade creditors (note 23) identified that offsetting control accounts were incorrectly presented as gross on the balance sheet in 2015. Accordingly, \$4.8 billion has now been netted.

Debtors includes the following balances from JPMorgan Chase undertakings:

| | 2016 | 2015 |
|---------------|------------|------------|
| | \$'000 | \$'000 |
| Trade debtors | 10,641,074 | 6,884,083 |
| Other debtors | 14,189,512 | 4,603,319 |
| | 24,830,586 | 11,487,402 |

Trade debtors mainly consists of accounts receivable from JPMorgan Chase undertaking and unsettled trades. Other debtors includes \$14.1 billion of cash collateral provided on derivatives (2015: \$4.6 billion).

19. Other assets

| | 2016 | 2015 |
|-------------------|---------|---------|
| | \$'000 | \$'000 |
| Deferred taxation | 135,734 | 94,590 |
| Prepayments | 508 | 9,640 |
| Accrued income | 447,989 | 477,844 |
| | 584,231 | 582,074 |

20. Investments in JPMorgan Chase undertakings

| | 2016 | 2015 |
|---|-----------|-------------|
| | \$'000 | \$'000 |
| Investments in JPMorgan Chase undertakings at cost | | |
| At 1 January | 3,458,789 | 3,458,566 |
| Write down - see below | (117,359) | — |
| Realisation of investments - see below | (223) | (2,494,884) |
| Additions - see below | — | 2,495,107 |
| At 31 December | 3,341,207 | 3,458,789 |

During the year, on review of the carrying amount of the Company's investment in Cazenove Group Limited, the investment has been written down by \$117.4 million.

During the first quarter of 2016, the Company received a final cash distribution of \$517,000 from its subsidiary, Bank One Europe Limited, of which \$294,000 was recognised as a gain on disposal in the Income statement. Bank One Europe Limited was dissolved shortly thereafter.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

20. Investments in JPMorgan Chase undertakings (continued)

In the third quarter of 2015, as part of an internal re-organisation, the Company entered into certain transactions with other JPMorgan Chase undertakings, namely:

- 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 C.V., 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.
- The Company received cash distributions from CP Group Holding Cooperatief U.A and Asselijn Finance C.V, in the amount of \$1,073 million, and \$1,229 million respectively, thereby realising its investment in the above companies. Asselijn Finance C.V. was dissolved shortly thereafter. The Company also received a cash distribution of \$193 million from Bank One Europe Limited.
- The Company received an additional cash contribution of \$5 million from its parent, J.P. Morgan Chase International Holdings.

The holdings of the Company are as follows:

| Name | Address of subsidiary | Principal activity | Holding | Shares held % |
|---|--|--------------------|----------|---------------|
| Greenwood Nominees Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Nominee company | Direct | 100 |
| J.P. Morgan Europe Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Banking | Direct | 100 |
| Cazenove Group Limited | JPMorgan House, Grenville Street, St. Helier, JE4 8QH, Jersey | Holding company | Direct | 100 |
| J.P. Morgan Prime Nominees Ltd. | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Nominee company | Direct | 100 |
| J.P. Morgan Services LLP | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Dormant company | Direct | 57 |
| CP Group Holding Cooperatief U.A. | Strawinskylaan 1135, Tower B, 11th Floor, Amsterdam, 1077, Netherlands | Investment company | Direct | 100 |
| Chase Securities International Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 100 |
| Chase International Securities (C.I.) Limited | Forum 4, Grenville Street, St. Helier, JE2 4UF, Jersey | Investment company | Indirect | 100 |
| Chemical Nominees Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 100 |
| Cazenove Holdings Limited | JPMorgan House, Grenville Street, St. Helier, JE4 8QH, Jersey | Holding company | Indirect | 100 |
| Cazenove IP Limited | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 100 |
| JPMorgan Cazenove Holdings ^(a) | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Holding company | Indirect | 51 |
| J.P. Morgan Cazenove Limited ^(a) | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Investment company | Indirect | 51 |
| JPMorgan Cazenove Service Company ^(a) | 25 Bank Street, Canary Wharf, London, E14 5JP, England | Service company | Indirect | 51 |
| Cheyne Capital Guaranteed S.A. Series 2007-1 ^(b) | 2 Boulevard Konrad Adenauer, Luxembourg, L-1115, Luxembourg | Notes issuer | Direct | 100 |

(a) Although JPMS plc has majority ownership interest in these companies, majority voting interest and therefore control is held by another JPMorgan Chase group undertaking.

(b) The above entity is a special purpose entity which meets the definition (per section 1162 of the Companies Act 2006) of a subsidiary undertaking.

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

All shares held in the above subsidiaries are ordinary shares.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

21. Unconsolidated structured entities

Structured entities

A structured entity is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as, when any voting rights relate to administrative tasks only and the relevant activities are directed by means of other contractual arrangements.

Typically, structured entities have one or more of the following characteristics:

- an insufficient amount of at-risk equity to permit the entity to finance its activities without additional subordinated financial support;
- equity at-risk owners that, as a group, are not able to make significant decisions relating to the entity's activities through voting rights or similar rights; or
- equity at-risk owners that do not absorb the entity's losses or receive the entity's residual returns.

The most common type of structured entities is a special purpose entity ("SPE"). SPE's are commonly used in securitisation transactions in order to isolate certain assets and distribute the cash flows from those assets to investors. The party that has power to direct the most significant activities of the entity and an exposure to the risks of the entity (together constituting control of the entity) is required to consolidate the assets and liabilities of the structured entity. The structured entities in which the Company has control are consolidated into the parent undertakings of the Company, as set out in note 20 to these financial statements.

The Company has involvement with various structured entities, originated within the Firm or by third parties. These typically include securitisations, credit protection purchased credit linked notes, collateralised loan and debt obligations, and other structured financings.

Material interests held in SPE's include residential and commercial mortgage-backed securities and other asset-backed securities. These interests relate to securitisation bonds where the underlying assets are residential and commercial mortgages, consumer loans, student loans, trade receivables, and credit card receivables.

Interest in unconsolidated structured entities

The Company's interest in an unconsolidated structured entity is considered as the contractual and non-contractual involvement that exposes the Company to variability of returns from the performance of the structured entity but not deemed a subsidiary.

The following table shows, by type of structured entity, the carrying amounts of the Company's interest in unconsolidated structured entities recognised on the balance sheet. The maximum exposure to loss is considered as approximate to the carrying amounts. It also provides an indication of the size of the structured entities, measured by the total assets held in the structured entity. The carrying amounts do not necessarily reflect the risks faced by the Company, as factors such as economic hedges and effect of collateral held by the Company are not included.

| | Fair value of assets held by SPE | Interest in unconsolidated structured entities | | | |
|--|----------------------------------|---|---------------------------------|---------------|------------------|
| | | Financial assets and liabilities held for trading | Loans and advances to customers | Other | Total |
| 31 December 2016 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Residential mortgage-backed securities | 128,093,000 | 750,000 | — | — | 750,000 |
| Commercial mortgage-backed securities | 21,654,000 | 95,000 | 365,000 | — | 460,000 |
| Other asset-backed securities | 27,923,000 | 174,000 | 50,000 | — | 224,000 |
| Credit-related notes and asset swap vehicles | 47,022,000 | 227,000 | — | — | 227,000 |
| Collateralised debt obligations | 6,883,000 | 101,000 | — | — | 101,000 |
| Other | 674,664,000 | 1,978,000 | — | — | 1,978,000 |
| Total assets | 906,239,000 | 3,325,000 | 415,000 | — | 3,740,000 |
| Maximum exposure to loss | 906,239,000 | 3,325,000 | 415,000 | — | 3,740,000 |
| Total liabilities | — | — | — | 52,000 | 52,000 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

21. Unconsolidated structured entities (continued)

| | Fair value of assets held by SPE | Interest in unconsolidated structured entities | | | |
|--|----------------------------------|---|---------------------------------|---------|-----------|
| | | Financial assets and liabilities held for trading | Loans and advances to customers | Other | Total |
| 31 December 2015 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Residential mortgage-backed securities | 170,236,000 | 739,000 | — | — | 739,000 |
| Commercial mortgage-backed securities | 42,645,000 | 245,000 | 324,000 | — | 569,000 |
| Other asset-backed securities | 47,035,000 | 991,000 | — | — | 991,000 |
| Credit-related notes and asset swap vehicles | 12,369,000 | 76,000 | — | — | 76,000 |
| Collateralised debt obligations | 1,326,000 | 4,000 | — | — | 4,000 |
| Other | 447,471,000 | 1,645,000 | — | 4,000 | 1,649,000 |
| Total assets | 721,082,000 | 3,700,000 | 324,000 | 4,000 | 4,028,000 |
| Maximum exposure to loss | 721,082,000 | 3,700,000 | 324,000 | 4,000 | 4,028,000 |
| Total liabilities | — | 1,000 | — | 262,000 | 263,000 |

22. Financial liabilities held for trading

| | 2016 | 2015 |
|-----------------------------|-------------|-------------|
| | \$'000 | \$'000 |
| Debt and equity instruments | 42,248,042 | 32,835,296 |
| Derivative payables | 235,757,064 | 214,396,540 |
| Other financial liabilities | 15,520,640 | 16,126,634 |
| | 293,525,746 | 263,358,470 |

Financial liabilities held for trading includes \$152.1 billion held with JPMorgan Chase undertakings (2015: \$150.9 billion).

23. Trade creditors and other liabilities

| | 2016 | 2015 |
|---|------------|------------|
| | \$'000 | \$'000 |
| Trade creditors ^(a) | 29,755,510 | 25,486,331 |
| Other liabilities: | | |
| Accruals and deferred income | 1,399,456 | 2,140,900 |
| Taxation and social security ^(b) | 575,237 | 391,940 |
| Other ^(c) | 23,844,456 | 17,604,645 |
| Total Other liabilities | 25,819,149 | 20,137,485 |
| Total Trade creditors and Other liabilities | 55,574,659 | 45,623,816 |

(a) Trade creditors predominantly consists of unsettled trades, brokerage fees payable and liabilities in respect of assets transferred but not derecognised (note 32) and includes \$2.6 billion with other JPMorgan Chase undertakings (2015: \$1.8 billion). 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.

(b) Taxation and social security includes provisions for Corporate tax, Overseas tax and Bank levy.

(c) Other includes \$23.5 billion (2015: \$17.2 billion) of cash collateral received related to OTC derivatives.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

24. Called-up share capital

| | 2016 | 2015 |
|--|------------|------------|
| | \$'000 | \$'000 |
| Issued and fully paid share capital | | |
| At 1 January | | |
| 1,039,262 ordinary shares (2015: 973,098) of \$10,000 each | 10,392,620 | 9,730,980 |
| 34,648 preferred ordinary shares (2015: 34,648) of \$10,000 each | 346,480 | 346,480 |
| 680,685 preference shares (2015: 680,685) of \$10,000 each | 6,806,850 | 6,806,850 |
| 50,000 ordinary shares (2015: 50,000) of £1.24 each | 100 | 100 |
| Movements during the year | | |
| 66,164 ordinary shares issued of \$10,000 each | — | 661,640 |
| At 31 December | | |
| 1,039,262 ordinary shares (2015: 1,039,262) of \$10,000 each | 10,392,620 | 10,392,620 |
| 34,648 preferred ordinary shares (2015: 34,648) of \$10,000 each | 346,480 | 346,480 |
| 680,685 preference shares (2015: 680,685) of \$10,000 each | 6,806,850 | 6,806,850 |
| 50,000 ordinary shares (2015: 50,000) of £1.24 each | 100 | 100 |
| 2 ordinary shares (2015: 2) of £1 each | — | — |
| | 17,546,050 | 17,546,050 |
| | | |
| | 2016 | 2015 |
| | \$'000 | \$'000 |
| Preference shares in issue | | |
| 5-year floating rate of \$10,000 each* | 2,650,000 | 2,650,000 |
| 10-year fixed rate of \$10,000 each* | 2,156,850 | 2,156,850 |
| 20-year fixed rate of \$10,000 each* | 2,000,000 | 2,000,000 |
| | 6,806,850 | 6,806,850 |

* Additional disclosure on the terms per tranche of preference shares and preferred ordinary shares is provided under note 25.

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Notes to the financial statements (continued)

25. Dividends

Interim dividends of \$358,107,690 were paid on the preference shares (2015: \$357,645,559) and \$5,261,655 on the preferred ordinary shares of the Company in 2016 (2015: \$5,201,233). An interim dividend of \$686,630,655 (2015: \$517,153,208) was paid on the ordinary shares of the Company for 2016. No final dividend was paid or proposed for 2016 (2015: nil).

The dividend rate on the preferred ordinary shares is 0.9% over 12 month U.S. dollar LIBOR on the nominal amount, and, if resolved to be distributed, is payable in priority to any dividend payable on ordinary shares, with no right to accumulation in the event of a deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company may redeem at its option any preferred ordinary share at par, together with accrued dividend due, at any time after 26 March 2007. In the event of a winding-up the preferred ordinary shareholders shall be repaid both capital and any accrued dividend due in priority to any payment to the ordinary shareholders. The preferred ordinary shares carry no voting rights at a general meeting of the Company. The ordinary shares carry 100% of the voting rights.

The dividend rate on the 5-year floating rate preference shares is 0.9% over 12 month U.S. dollar LIBOR on the nominal amount, and, if resolved to be distributed, is payable in priority to any dividend payable on ordinary shares, but *pari passu* to any payment to the holders of the preferred ordinary shares or any other preference shares, with no right to accumulation in the event of a deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company may redeem at its option any 5-year floating rate preference share at par, together with accrued dividend due, at any time after 9 June 2009. In the event of a winding-up the preference shareholders shall be repaid both capital and any accrued dividend due in priority to any payment to the ordinary shareholders but *pari passu* to any payment to the holders of preferred ordinary shares or other preference shares. The 5-year floating rate preference shares carry no voting rights at general meetings.

The dividend rate on the 10-year fixed rate preference shares is a fixed rate of 2.75% and 2.85% per series, above the 10-year U.S. Treasury Rate as at the date of issue, and, if resolved to be distributed, is payable in priority to any dividend payable on the ordinary shares, but *pari passu* to any payment to the holders of the preferred ordinary shares or any other preference shares, with no right to accumulation in the event of deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company may redeem any series of the 10-year fixed rate preference shares at par at any time after the 10th anniversary of the date of issue of that series provided that the Company may only redeem exactly 20 per cent of the total number of preference shares issued in that series at par. In the event of a winding-up, the 10-year fixed rate preference shareholder shall be repaid both capital and any accrued dividend due in priority to any payment to the ordinary shareholder but *pari passu* to any payment to the holders of the preferred ordinary shares and any other preference shares. The preference shares carry no voting rights at general meetings.

The dividend rate on the 20-year fixed rate preference shares is a fixed rate of 8% and, if resolved to be distributed, is payable in priority to any payment of dividend or other distribution to the holders of any junior obligations, but *pari passu* to any payment of dividend or other distribution to the holders of any parity obligations, with no right to accumulation in the event of deficiency of profits nor any further entitlement to participation in the profits of the Company. Subject to approval from the PRA, the Company may redeem at its option any 20-year fixed rate preference share at par, together with accrued dividend due, at any time after 20 years and one month of the date of issue of that series. In the event of a winding-up, the 20-year fixed rate preference shareholder shall be repaid both capital and any accrued dividend due in priority to any payment to the holders of ordinary shares and any other securities issued by the Company, but *pari passu* to any payment to the holders of any other series of preference shares issued by the Company. The preference shares carry no voting rights at general meetings.

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Notes to the financial statements (continued)

26. Notes to the statement of cash flows

| | 2016 | 2015 |
|--|---------------------|---------------------|
| | \$'000 | \$'000 |
| Profit before income tax | 3,987,453 | 3,138,234 |
| Adjustments for: | | |
| Depreciation of tangible fixed assets | 1,290 | 803 |
| Impairment of investments in JPMorgan Chase undertakings | 117,359 | — |
| Other non-cash movements | 681,129 | (216,324) |
| Operating cash flows before changes in operating assets and liabilities | 4,787,231 | 2,922,713 |
| Changes in operating assets | | |
| Decrease/(increase) in loans and advances to customers | 192,771 | (1,234,654) |
| Decrease in securities purchased under resale agreements | 6,419,632 | 8,605,651 |
| (Increase)/decrease in securities borrowed | (10,792,219) | 1,523,377 |
| (Increase)/decrease in financial assets held for trading | (23,437,986) | 4,925,993 |
| Increase in financial assets designated at fair value through profit or loss | (190,374) | (54,397) |
| (Increase)/decrease in debtors and other assets | (18,329,453) | 823,232 |
| Decrease in prepayments and accrued income | 38,987 | 113,204 |
| | (46,098,642) | 14,702,406 |
| Changes in operating liabilities | | |
| (Decrease)/increase in securities sold under repurchase agreements | (3,864,900) | 7,970,980 |
| Increase/(decrease) in securities loaned | 8,817,628 | (10,189,502) |
| Increase/(decrease) in financial liabilities held for trading | 30,167,276 | (2,721,865) |
| Increase/(decrease) in trade creditors | 4,269,179 | (12,796,489) |
| Increase/(decrease) in other liabilities | 6,128,016 | (7,033,403) |
| (Decrease)/increase in accruals and deferred income | (741,444) | 1,665,776 |
| | 44,775,755 | (23,104,503) |
| Cash generated from/(used in) operations | 3,464,344 | (5,479,384) |

27. Commitments and contingent liabilities

Lending-related commitments and guarantees

The Company 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 Company should the counterparty draw upon the commitment or the Company 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 Company's view, representative of its actual future credit exposure or funding requirements.

| | 2016 | 2015 |
|--|-------------------|-------------------|
| | \$'000 | \$'000 |
| Unused commitments on loans | 15,180,394 | 14,019,175 |
| Standby letters of credit and guarantees | 126,391 | 73,858 |
| | 15,306,785 | 14,093,033 |

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

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

27. Commitments and contingent liabilities (continued)

Contingent liabilities

The Company, together with certain other JPMorgan Chase undertakings and third party entities, has been named in a claim brought by the Ente Nazionale di Previdenza ed Assistenza Medici E Degli Odontoiatri ("ENPAM") in the Milan courts in relation to certain alleged breaches of Italian conduct rules. The claim seeks damages against named parties of between EUR 111 and 222 million. The court has set a hearing for 17 May 2017 for the next round of submissions.

Management believe that no provision is required in line with the requirements of IAS 37 'Provisions, contingent liabilities and contingent assets', as the relevant criteria are not met.

28. Assets and liabilities measured at fair value

Fair value

Valuation process

The Company 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 Company 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 Company's businesses and portfolios. The use of different methodologies or assumptions to those used by the Company 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 Company'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 Company, 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 Company by JPMorgan Chase Bank, N.A. and therefore the Company takes account of these arrangements in estimating the fair value of its derivative portfolio.

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 Company.

Fair value hierarchy

The Company 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.

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Notes to the financial statements (continued)

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

Valuation methodologies

The following table describes the valuation methodologies used by the Company 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. | Level 1 |
| | <p>In the absence of quoted market prices, securities are valued based on:</p> <ul style="list-style-type: none"> • Observable market prices for similar securities • Relevant broker quotes • Discounted cash flows <p>In addition, the following inputs to discounted cash flows are used for the following products:</p> <p><i>Mortgage and asset-backed securities specific inputs:</i></p> <ul style="list-style-type: none"> • Collateral characteristics • Deal-specific payment and loss allocations • Current market assumptions related to yield, prepayment speed, conditional default rates and loss severity | Level 2 or 3 |
| Derivatives and fully funded OTC instruments | Exchange-traded derivatives that are actively traded and valued using the exchange price. | Level 1 |
| | <p>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:</p> <ul style="list-style-type: none"> • Contractual terms including the period to maturity • Readily observable parameters including interest rates and volatility • Credit quality of the counterparty and of the Company • Market funding levels • Correlation levels <p>In addition, the following specific inputs are used for the following derivatives that are valued based on models with significant unobservable inputs:</p> <p><i>Structured credit derivatives specific inputs include:</i></p> <ul style="list-style-type: none"> • 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 <p><i>Certain interest rate and foreign exchange ("FX") exotic options specific inputs include:</i></p> <ul style="list-style-type: none"> • 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 <p><i>Certain commodity derivatives specific inputs include:</i></p> <ul style="list-style-type: none"> • Commodity volatility • Forward commodity price | Level 2 or 3 |
| Financial instruments held for trading - loans | <p>Where observable market data is available, valuations are based on:</p> <ul style="list-style-type: none"> • Observed market prices (circumstances are infrequent) • Relevant broker quotes • Observed market prices for similar instruments <p>Where observable market data is unavailable or limited, valuations are based on discounted cash flows, which consider the following:</p> <ul style="list-style-type: none"> • Credit spreads derived from the cost of CDS; or benchmark credit curves developed by the Company, by industry and credit rating • Prepayment speed | Level 2 or 3 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Valuation methodologies (continued)

| Product/instrument | Valuation methodology, inputs and assumptions | Classifications in the valuation hierarchy |
|--|--|--|
| Loans and advances to customers and lending-related commitments | <p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> Credit spreads, derived from the cost of CDS; or benchmark credit curves developed by the Company, by industry and credit rating Prepayment speed <p>Lending-related commitments are valued similar to loans and reflect the portion of an unused commitment expected, based on the Company's average portfolio historical experience, to become funded prior to an obligor default</p> | Predominantly level 3 |
| <ul style="list-style-type: none"> Securities purchased under agreements to resell; Securities borrowed; Securities sold under agreements to repurchase; Securities loaned | <p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> Derivative features. For further information refer to the discussion of derivatives above Market rates for the respective maturity Collateral | Level 2 |

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 |
|--|-------------------|--------------------|------------------|--------------------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2016 | | | | |
| Financial assets held for trading: | | | | |
| Debt and equity instruments | 48,988,614 | 39,530,046 | 808,769 | 89,327,429 |
| Derivative receivables | 76,571 | 227,134,018 | 6,507,790 | 233,718,379 |
| Financial assets designated at fair value through profit or loss: | | | | |
| Debt and equity instruments | — | — | 315,659 | 315,659 |
| Total financial assets | 49,065,185 | 266,664,064 | 7,632,218 | 323,361,467 |
| Financial liabilities held for trading: | | | | |
| Debt and equity instruments | 31,033,923 | 11,213,696 | 423 | 42,248,042 |
| Derivative payables | 76,358 | 230,220,052 | 5,460,654 | 235,757,064 |
| Other financial liabilities | — | 11,557,637 | 3,963,003 | 15,520,640 |
| Total financial liabilities | 31,110,281 | 252,991,385 | 9,424,080 | 293,525,746 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Assets and liabilities measured at fair value on a recurring basis (continued)

| | Level 1 | Level 2 | Level 3 | Total |
|--|-------------------|--------------------|------------------|--------------------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2015 | | | | |
| Financial assets held for trading: | | | | |
| Debt and equity instruments | 49,028,796 | 40,644,770 | 1,301,727 | 90,975,293 |
| Derivative receivables | 51,076 | 203,406,147 | 5,175,306 | 208,632,529 |
| Financial assets designated at fair value through profit or loss: | | | | |
| Equity instruments | — | — | 125,285 | 125,285 |
| Total financial assets | 49,079,872 | 244,050,917 | 6,602,318 | 323,361,467 |
| Financial liabilities held for trading: | | | | |
| Debt and equity instruments | 20,434,283 | 12,395,940 | 5,073 | 32,835,296 |
| Derivative payables | 50,925 | 209,439,157 | 4,906,458 | 214,396,540 |
| Other financial liabilities | — | 12,989,810 | 3,136,824 | 16,126,634 |
| Total financial liabilities | 20,485,208 | 234,824,907 | 8,048,355 | 263,358,470 |

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 Company. 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 Company'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 Company's view, the input range and the weighted average value do not reflect the degree of input uncertainty or an assessment of the reasonableness of the Company's estimates and assumptions. Rather, they reflect the characteristics of the various instruments held by the Company 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 Company at each balance sheet date.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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 | \$'000 | \$'000 | \$'000 | | | | |
| Debt and equity instruments | 1,124,428 | (423) | 1,124,005 | | | | |
| Corporate debt securities and other | | | | Discounted cash flows Market comparables | Credit spread Yield Price | 40bps – 375bps 1% - 17% \$0 - \$121 | 96bps 9% \$91 |
| Residential mortgage-backed securities and loans | | | | Discounted cash flows | Yield Prepayment speed Conditional default rate Loss severity | 4% - 18% 0% - 20% 0% - 34% 0% - 90% | 5% 8% 15% 37% |
| Commercial mortgage-backed securities and loans | | | | Discounted cash flows | Yield Conditional default rate Loss severity | 1% - 32% 0% - 100% 40% | 8% 69% 40% |
| Derivatives | 6,507,790 | (5,460,654) | 1,047,136 | | | | |
| Net interest rate derivatives | | | | Option pricing | Interest rate correlation Interest rate spread volatility | (30)% – 100% 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 | — | (3,963,003) | (3,963,003) | Option pricing | Interest rate correlation Interest rate spread volatility Foreign exchange correlation Equity correlation | (30)% – 100% 3% – 38% (30)% – 65% (50)% – 80% | |
| | | | | Discounted cash flows | Credit correlation | 30% – 85% | |
| Total assets and liabilities | 7,632,218 | (9,424,080) | (1,791,862) | | | | |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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 | \$'000 | \$'000 | \$'000 | | | | |
| Debt and equity instruments | 1,427,012 | (5,073) | 1,421,939 | | | | |
| Corporate debt securities and other | | | | Discounted cash flows Market comparables | Credit spread Yield Price | 60bps – 225bps 1% - 20% \$0 - \$168 | 146bps 5% \$89 |
| Residential mortgage-backed securities and loans | | | | Discounted cash flows | Yield Prepayment speed Conditional default rate Loss severity | 3% - 26% 0% - 20% 0% - 33% 0% - 100% | 6% 6% 2% 28% |
| Commercial mortgage-backed securities and loans | | | | Discounted cash flows | Yield Conditional default rate Loss severity | 1% - 25% 0% - 91% 40% | 6% 29% 40% |
| Derivatives | 5,175,306 | (4,906,458) | 268,848 | | | | |
| Net interest rate derivatives | | | | Option pricing | Interest rate correlation Interest rate spread volatility | (52)% – 99% 3% – 38% | |
| Net credit derivatives | | | | Discounted cash flows | Credit correlation | 35 % – 90% | |
| Net foreign exchange derivatives | | | | Option pricing | Foreign exchange correlation | 0 % – 60% | |
| Net equity derivatives | | | | Option pricing | Equity volatility | 20% – 65% | |
| Net commodity derivatives | | | | Discounted cash flows | Forward commodity price | \$22 – \$46 per barrel | |
| Other financial liabilities | — | (3,136,824) | (3,136,824) | | | | |
| | | | | Option pricing | Interest rate correlation Interest rate spread volatility Foreign exchange correlation Equity correlation | (52)% – 99% 3% – 38% 0 % – 60% (50)% – 80% | |
| | | | | Discounted cash flows | Credit correlation | 35 % – 90% | |
| Total assets and liabilities | 6,602,318 | (8,048,355) | (1,446,037) | | | | |

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.

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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Changes in and ranges of unobservable inputs (continued)

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.

Fair value financial instruments valued using techniques that incorporate unobservable inputs

The potential impact as at 31 December of using reasonable possible alternative assumptions for the valuations including significant unobservable inputs have been quantified in the following table:

| Sensitivity analysis of valuations using unobservable inputs | Fair Value | | Favourable change | Unfavourable change | |
|--|------------------|--------------------|--------------------|---------------------|-----------------|
| | Asset | Liability | Net | Income statement | |
| At 31 December 2016 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Debt and equity instruments | | | | | |
| Corporate debt securities and other | 1,116,836 | (423) | 1,116,413 | 20,471 | (20,471) |
| Residential mortgage-backed securities | 1,550 | — | 1,550 | 155 | (155) |
| Commercial mortgage-backed securities | 6,042 | — | 6,042 | 778 | (778) |
| Total debt and equity instruments | 1,124,428 | (423) | 1,124,005 | 21,404 | (21,404) |
| Derivatives* | 6,507,790 | (5,460,654) | 1,047,136 | 13,305 | (13,305) |
| Other financial liabilities* | — | (3,963,003) | (3,963,003) | 19,667 | (19,667) |
| Total | 7,632,218 | (9,424,080) | (1,791,862) | 54,376 | (54,376) |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

Fair value financial instruments valued using techniques that incorporate unobservable inputs (continued)

| Sensitivity analysis of valuations using unobservable inputs | Fair Value | | | Favourable change | Unfavourable change |
|--|------------------|--------------------|--------------------|-------------------|---------------------|
| | Asset | Liability | Net | Income statement | |
| At 31 December 2015 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Debt and equity instruments | | | | | |
| Corporate debt securities and other | 1,415,687 | (5,073) | 1,410,614 | 9,010 | (9,010) |
| Residential mortgage-backed securities | 5,852 | — | 5,852 | 222 | (222) |
| Commercial mortgage-backed securities | 5,473 | — | 5,473 | 467 | (467) |
| Total debt and equity instruments | 1,427,012 | (5,073) | 1,421,939 | 9,699 | (9,699) |
| Derivatives* | 5,175,306 | (4,906,458) | 268,848 | 15,167 | (15,167) |
| Other financial liabilities* | — | (3,136,824) | (3,136,824) | 27,475 | (27,475) |
| Total | 6,602,318 | (8,048,355) | (1,446,037) | 52,341 | (52,341) |

* Given significant hedging between derivatives and other financial liabilities the net risk is considered to calculate the favourable/unfavourable changes with the result then allocated to the two lines individually.

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 Company within level 3 of the fair value hierarchy.

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

| Financial assets | Debt and equity instruments | Derivative receivables | Total financial assets |
|--|-----------------------------|------------------------|------------------------|
| | \$'000 | \$'000 | \$'000 |
| At 1 January 2016 | 1,427,012 | 5,175,306 | 6,602,318 |
| Total (loss)/gains recognised in profit or loss | (84,711) | 1,200,083 | 1,115,372 |
| Purchases | 1,578,086 | (185,641) | 1,392,445 |
| Sales | (1,303,679) | 513,914 | (789,765) |
| Issuances | 14,927 | 298 | 15,225 |
| Settlements | (106,648) | (219,772) | (326,420) |
| Transfers in to Level 3 | 147,701 | 263,403 | 411,104 |
| Transfers out of Level 3 | (548,260) | (239,801) | (788,061) |
| At 31 December 2016 | 1,124,428 | 6,507,790 | 7,632,218 |
| Change in unrealised gains related to financial instruments held at 31 December 2016 | (47,977) | 1,080,402 | 1,032,425 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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

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

| Financial liabilities | Debt and equity instruments | Derivative payables | Other financial liabilities | Total financial liabilities |
|---|-----------------------------|---------------------|-----------------------------|-----------------------------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 1 January 2016 | 5,073 | 4,906,458 | 3,136,824 | 8,048,355 |
| Total (gains)/loss recognised in profit or loss | 8,098 | 796,473 | 177,779 | 982,350 |
| Purchases | (1,865) | 18,979 | — | 17,114 |
| Sales | 21,264 | 720,003 | — | 741,267 |
| Issuances | — | 1,491 | 2,302,540 | 2,304,031 |
| Settlements | (32,598) | (938,435) | (1,656,106) | (2,627,139) |
| Transfers in to Level 3 | 1,288 | 243,760 | 56,015 | 301,063 |
| Transfers out of Level 3 | (837) | (288,075) | (54,049) | (342,961) |
| At 31 December 2016 | 423 | 5,460,654 | 3,963,003 | 9,424,080 |
| Change in unrealised losses related to financial instruments held at 31 December 2016 | (145) | 681,963 | 74,124 | 755,942 |

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

| Financial assets | Debt and equity instruments | Derivative receivables | Total financial assets |
|--|-----------------------------|------------------------|------------------------|
| | \$'000 | \$'000 | \$'000 |
| At 1 January 2015 | 5,709,113 | 6,542,644 | 12,251,757 |
| Total (loss)/gains recognised in profit or loss | (377,980) | 982,562 | 604,582 |
| Purchases | 4,549,375 | 944,290 | 5,493,665 |
| Sales | (3,693,458) | (258,056) | (3,951,514) |
| Issuances | 7,220 | 18,082 | 25,302 |
| Settlements | (1,744,194) | (1,670,248) | (3,414,442) |
| Transfers in to Level 3 | 472,002 | 256,649 | 728,651 |
| Transfers out of Level 3 | (3,495,066) | (1,640,617) | (5,135,683) |
| At 31 December 2015 | 1,427,012 | 5,175,306 | 6,602,318 |
| Change in unrealised gains related to financial instruments held at 31 December 2015 | 165,394 | 281,628 | 447,022 |

| Financial liabilities | Debt and equity instruments | Derivative payables | Other financial liabilities | Total financial liabilities |
|---|-----------------------------|---------------------|-----------------------------|-----------------------------|
| | \$'000 | \$'000 | \$'000 | \$'000 |
| At 1 January 2015 | 2,079 | 5,515,017 | 3,627,635 | 9,144,731 |
| Total (gains)/loss recognised in profit or loss | (1,315) | 1,326,194 | 383,267 | 1,708,146 |
| Purchases | (127,169) | (1,261,352) | — | (1,388,521) |
| Sales | 130,229 | 2,254,885 | — | 2,385,114 |
| Issuances | — | 52,928 | 3,279,089 | 3,332,017 |
| Settlements | (1,260) | (2,141,654) | (2,991,020) | (5,133,934) |
| Transfers in to Level 3 | 5,252 | 210,651 | 246,678 | 462,581 |
| Transfers out of Level 3 | (2,743) | (1,050,211) | (1,408,825) | (2,461,779) |
| At 31 December 2015 | 5,073 | 4,906,458 | 3,136,824 | 8,048,355 |
| Change in unrealised losses related to financial instruments held at 31 December 2015 | 126 | 122,604 | 127,683 | 250,413 |

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

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

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 in to 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 in to 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 period 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 securities purchased under agreements to resell, cash and balances at central banks, debtors, other assets, fixed assets, trade creditors and other liabilities.

The Company has \$246.5 billion (2015: \$206.9 billion) of current financial assets and \$236.2 billion (2015: \$205.9 billion) of current financial liabilities that are not measured at fair value, including loans and advances to customers of \$3.1 billion (2015: \$3.3 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.

J.P. MORGAN SECURITIES PLC

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 IAS 32 'Financial Instruments: Presentation' ("IAS 32") 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 | Net amount |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2016 | | | | | | |
| Financial assets: | | | | | | |
| Securities purchased under agreements to resell ^(a) | 244,294,408 | (113,877,556) | 130,416,852 | (125,057,222) | (1,006,386) | 4,353,244 |
| Securities borrowed ^(a) | 25,831,106 | — | 25,831,106 | (23,693,068) | — | 2,138,038 |
| Financial assets held for trading ^(b) | 342,284,385 | (19,238,577) | 323,045,808 | (191,509,111) | (19,626,339) | 111,910,358 |
| Total | 612,409,899 | (133,116,133) | 479,293,766 | (340,259,401) | (20,632,725) | 118,401,640 |
| Financial liabilities: | | | | | | |
| Securities sold under agreements to repurchase ^(a) | 175,534,827 | (113,877,556) | 61,657,271 | (59,283,948) | (185,403) | 2,187,920 |
| Securities loaned ^(a) | 20,133,325 | — | 20,133,325 | (19,275,518) | — | 857,807 |
| Financial liabilities held for trading | 313,994,831 | (20,469,085) | 293,525,746 | (191,509,111) | (17,046,020) | 84,970,615 |
| Total | 509,662,983 | (134,346,641) | 375,316,342 | (270,068,577) | (17,231,423) | 88,016,342 |

| | Effects of offsetting on balance sheet | | | Related amounts not offset | | |
|--|--|---------------------|---------------------------------------|----------------------------|---------------------|--------------------|
| | Gross amounts | Amounts offset | Net amounts reported on balance sheet | Financial Instruments | Cash | Net amount |
| | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| At 31 December 2015 | | | | | | |
| Financial assets: | | | | | | |
| Securities purchased under agreements to resell ^(a) | 193,758,751 | (56,922,267) | 136,836,484 | (133,855,848) | (835,072) | 2,145,564 |
| Securities borrowed ^(a) | 15,038,887 | — | 15,038,887 | (13,708,511) | — | 1,330,376 |
| Financial assets held for trading ^(b) | 327,497,646 | (27,889,824) | 299,607,822 | (161,820,645) | (15,594,857) | 122,192,320 |
| Total | 536,295,284 | (84,812,091) | 451,483,193 | (309,385,004) | (16,429,929) | 125,668,260 |
| Financial liabilities: | | | | | | |
| Securities sold under agreements to repurchase ^(a) | 122,444,438 | (56,922,267) | 65,522,171 | (61,638,580) | (658,657) | 3,224,934 |
| Securities loaned ^(a) | 11,315,697 | — | 11,315,697 | (11,140,308) | — | 175,389 |
| Financial liabilities held for trading ^(b) | 289,961,140 | (26,602,670) | 263,358,470 | (165,383,416) | (12,032,086) | 85,942,968 |
| Total | 423,721,275 | (83,524,937) | 340,196,338 | (238,162,304) | (12,690,743) | 89,343,291 |

(a) The fair value of securities purchased under agreements to resell and securities borrowed accepted as collateral that the Company is permitted to sell or re-pledge in the absence of default, prior to netting adjustments, is \$270,255 million (2015: \$213,882 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 11 of the Strategic report for further detail.

(b) Included within 'Amounts offset' are the respective collateral payable and receivables with certain clearing counterparties.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions

During the year, the Company was involved in the following pension schemes in the UK:

- JPMorgan UK Pension Plan ("UKP") - a defined contribution scheme (as a participating employer);
- JPMC UK Retirement Plan - a defined benefit scheme; and
- JPMorgan Cazenove (1987) Pension Scheme ("UKS") - a defined benefit scheme (as a participating employer).

In Europe, the Company also operates defined benefit and defined contribution schemes for its employers in the overseas branches 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 as at 31 December 2016 amounted to \$9,488,000 (2015: \$8,165,000). The charge for the year through the income statement was \$2,094,000 (2015: \$1,620,000), and total loss recognised through statement of comprehensive income was \$1,636,000 (2015: gain of \$3,297,000).

JPMorgan UK Pension Plan

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

JPMC UK Retirement Plan

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, it 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 JPMorgan Chase undertaking which had previously been a participating employer in the plan. Under the terms of this agreement, the Company became responsible for 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. The Company 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 Company 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 the Company; or
- Any other date agreed between the Company and the Trustee of the Plan.

JPMorgan Cazenove (1987) Pension Scheme

The JPMorgan Cazenove (1987) Pension Scheme ("UKS") is an ongoing defined benefit plan. The Company has been a principal employer in relation to the UKS plan since August 2012. In May 2016, the Company agreed to and became responsible for 97.24% of the liabilities in respect of the UKS, taking over the obligation from its indirect subsidiary, JPMorgan Cazenove Service Company.

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

| | 2016 | 2015 |
|---------------------------|-------------|-------------|
| | % per annum | % per annum |
| 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% | 2.9% |

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

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions (continued)

JPMorgan Cazenove (1987) Pension Scheme (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 | 24.0 |
| - Female | 25.1 | 25.0 |
| 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 was as follows:

| | 2016 | 2015 |
|---|---------------|---------------|
| | \$'000 | \$'000 |
| Benefit obligation at beginning of the year | 496,540 | 551,363 |
| Current service costs | 775 | 2,333 |
| Interest costs | 16,273 | 19,168 |
| Actuarial loss/(gain) | 138,244 | (33,455) |
| Benefits paid from plan/Company | (23,140) | (18,120) |
| Exchange rate changes | (93,875) | (24,749) |
| Benefit obligation at end of the year | 534,817 | 496,540 |

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

| | 2016 | 2015 |
|---|---------------|---------------|
| | \$'000 | \$'000 |
| Fair value of plan assets at beginning of year | 450,857 | 484,412 |
| Expected return on plan assets | 14,891 | 16,961 |
| Actuarial gain/(loss) on plan assets | 65,518 | (16,586) |
| Employer contributions (including employer direct benefit payments) | 7,866 | 7,208 |
| Administrative expenses paid from plan assets | (566) | (836) |
| Benefits paid from plan/Company | (23,140) | (18,120) |
| Exchange rate changes | (80,620) | (22,182) |
| Fair value of plan assets at end of the year | 434,806 | 450,857 |

The equity investments and bonds which are held in the plan assets are quoted and are valued at the current bid price in accordance with IAS 19.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions (continued)

JPMorgan Cazenove (1987) Pension Scheme (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 |
| At 31 December | % | % 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 accruals on 31 May 2016.

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

The expected return on scheme assets is determined by considering the expected returns available on the assets underlying the current investment policy. Expected yields on fixed interest investments are based on gross redemption yields as at the balance sheet date. Expected returns on equity investments reflect long-term real rates of return experienced in the respective markets.

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 |
|--|----------|---------|
| | \$'000 | \$'000 |
| Present value of wholly or partly funded obligations | 534,817 | 496,540 |
| Fair value of plan assets | 434,806 | 450,857 |
| Deficit for funded plans - net liability | 100,011 | 45,683 |
| Experience adjustments on plan assets | (65,518) | 16,586 |
| Experience adjustments on plan liabilities | (6,661) | (7,534) |

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

| | 2016 | 2015 |
|---|----------|----------|
| | \$'000 | \$'000 |
| Current service cost | 775 | 2,333 |
| Interest cost | 16,273 | 19,168 |
| Expected return on plan assets | (14,891) | (16,961) |
| Administrative expenses paid from plan assets | 566 | 836 |
| Total pension cost recognised in the income statement | 2,723 | 5,376 |
| Exchange rate changes | (13,255) | (2,567) |
| Net amount recognised in the income statement | (10,532) | 2,809 |

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

30. Pensions (continued)

JPMorgan Cazenove (1987) Pension Scheme (continued)

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

| | 2016 | 2015 |
|--|----------|--------|
| | \$'000 | \$'000 |
| Actuarial (loss)/gain immediately recognised | (72,726) | 16,869 |

The asset allocation of the UKS defined benefit schemes was 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 |
| | 100 | 100 |

31. Share based payments

The ultimate parent of the Company, JPMorgan Chase & Co. (the "Firm") 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 Firm is currently granting stock-based incentive awards. The LTIP, plus prior Firm plans and plans assumed as the result of acquisitions, are referred to collectively as the "LTI Plans" and such plans constitute the Firm'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 of the Company 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, 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

31. 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 and SARs outstanding as at 31 December:

| | 31 December 2016 | | | 31 December 2015 | | |
|--------------------------|------------------|------------------------------------|--|------------------|------------------------------------|--|
| | Outstanding '000 | Weighted average exercise price \$ | Weighted average remaining contractual life (in years) | Outstanding '000 | Weighted average exercise price \$ | Weighted average remaining contractual life (in years) |
| Range of exercise prices | | | | | | |
| \$min - \$20.00 | 75 | 19.49 | 2.05 | 75 | 19.49 | 3.06 |
| \$20.01 - \$35.00 | — | — | — | — | — | — |
| \$35.01 - \$50.00 | 1,144 | 43.32 | 4.08 | 1,614 | 43.55 | 4.76 |
| \$50.01 and above | — | — | — | 1 | 759.99 | 0.97 |
| Total | 1,219 | 41.86 | 3.96 | 1,690 | 42.63 | 4.68 |

Broad-based employee stock options

No broad-based employee stock options were granted in 2016 or 2015. 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 become 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 \$249 million (2015: \$231 million), all of which relates to equity settled share based payments.

32. Transfer of financial assets

In the course of its normal business activities, the Company 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, and 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. In substance, these transactions constitute 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 Company remains exposed to interest and credit risk on these instruments which they are contractually required to repurchase at a later date. 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.

The Company 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 Company 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.

J.P. MORGAN SECURITIES PLC

Notes to the financial statements (continued)

32. 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

| | Fair value of the assets | | Carrying amount of the related liability | |
|-----------------------------------|--------------------------|-----------|--|-----------|
| | 2016 | 2015 | 2016 | 2015 |
| | \$'000 | \$'000 | \$'000 | \$'000 |
| Financial assets held for trading | 5,720,000 | 7,422,000 | 5,268,000 | 7,224,000 |

Continuing involvement in financial assets that have been derecognised

In some cases, the Company transfers financial assets that it derecognises entirely even though it may have continuing involvement in them. This typically happens when the Company has sold a financial asset to a SPE with limited other assets and enters into a derivative with the SPE 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 Company with such SPEs (including those with such SPEs to which the Company did not transfer any financial assets) amounted to \$13.2 billion and \$722 million as of 2016 (\$8.1 billion and \$404 million as of 2015).

33. Financial risk management

Disclosures in relation to the Company's risk management and capital management have been presented in the Strategic report on pages 1 - 23 which forms part of these financial statements.

34. Post balance sheet events

On 19 April 2017, the Board approved interim dividends of \$359,303,501 on preference shares and \$6,696,499 on preferred ordinary shares of the Company.

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