Company number: 00025932

LCH LIMITED

ANNUAL REPORT AND FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

COMPANY INFORMATION

Board of Directors

Type of director	Name	Note
Executive	Martin Pluves (CEO)	Resigned 31 July 2019
Executive	Isabelle Girolami (CEO)	Appointed 1 November 2019
Executive	Daniel Maguire	
Executive	Dennis McLaughlin	
Independent	Leonard (Lex) Hoogduin (Chairman)	
Independent	Shona Milne	
Independent	Graham Wright	Resigned 31 July 2019
Independent	Ronaldus Berndsen	
Independent	Laurence Philip Adams	
Group shareholder representative	Nikhil Rathi (LSEG)	
Group shareholder representative	Matthew Jerman (Citi)	
Group shareholder representative	Susan O'Flynn (Morgan Stanley)	

Secretary	Simon Tutton
Auditors	Ernst & Young LLP 25, Churchill Place London E14 5EY
Registered office	Aldgate House 33 Aldgate High Street London EC3N 1EA

Telephone: +44 (0) 20 7426 7000

Registered in England, number: 00025932

LCH Limited (the Company) is a wholly owned subsidiary of LCH Group Holding Limited and is a member of the LCH group of companies. The Company's ultimate parent is London Stock Exchange Group plc (LSEG).

Business model

The Company's principal activity during the year continued to be the provision of central counterparty ('CCP') and related services to clearing members as a part of the LCH Group.

The Company is a leading multinational clearing house. The Company provides services to mitigate counterparty risk across multiple asset classes for clearing members and their clients, operating through an open access model that clears for major exchanges and platforms as well as a range of over-the-counter ('OTC') markets.

As a Central Counterparty (CCP), the Company sits in the middle of trades as the buyer to every seller and the seller to every buyer. If either party defaults on the trade, the Company owns the defaulter's risk and becomes accountable for its liabilities. Fundamental to the Company's risk processes is its collection of quality collateral from clearing members and clients as insurance to recover or replace defaulted risk. During the life of a trade, or that of a portfolio of trades, the Company processes all cash flows and marks the trade or book to market, calling variation and initial margin in relation to the prevailing risk of the overall portfolio.

The Company earns its revenue in the OTC derivatives markets by charging members either an annual fee for all clearing or a lower annual fee with variable fees based on volume. Additional fees are levied for services such as compression. Clients pay a fee based on OTC volumes or values cleared. In non-OTC markets, all users pay a fee based on volumes cleared. Net treasury income is earned on cash and securities held for margin and default funds.

The Company continues to satisfy the requirements of the Bank of England as a Recognised Clearing House in the UK, details of the all other regulatory bodies to whose rules it is subject can be found in note 25. It provides CCP clearing services in respect of a broad range of cash and derivative products traded on or through various exchanges and trading platforms in the UK, Europe, Asia and the US as well as those traded in the OTC markets.

Strategic objectives

The Company's strategic objectives are:

- to provide market leading risk management and clearing solutions
- to manage our members' and clients' risk by providing effective and efficient clearing services
- to promote a safe and stable financial market foremost in all that we do

The strategy for achieving these objectives is to continue to offer our proven risk management capabilities across a range of asset classes with a commitment to partner with our members to develop the services that make markets more efficient and safer.

Key performance indicators

Financial and non-financial key performance indicators utilised by the directors to measure progress are as follows:

	2019	2018	Variance
SwapClear			
Notional cleared (US$ trillion)	**1,230**	1,077	14%
Client trades ('000)	**1,681**	1,487	13%
ForexClear notional cleared (US$ billion)	**18,050**	17,238	5%
Fixed Income: notional cleared (€ trillion)	**22**	49	(55%)
Cash Equities: trades cleared (million)	**486**	577	(16%)
Average cash collateral (€ billion)	**77.9**	67.9	15%

Discussion of the key performance indicators is included in the development and performance section below.

Development and performance
Total income was up 11% to €645.7 million with good performance from clearing fees and strong growth in Net Treasury Income and non-cash collateral. Operating expenses were up 3% to €191.7 million on an under-lying basis, reflecting good cost management and balanced investment.

OTC derivatives clearing revenue was up 16% at €315.3 million. The increase in OTC clearing revenue came largely from the growth in SwapClear client clearing.

Non-OTC clearing revenue was €36.5 million, down 31% on 2018, driven by member driven consolidation of a large majority of Euro debt clearing into LCH SA. Other revenue, which includes compression services, fees for managing non-cash collateral and pass-through cost, increased by 5% to €100.6 million.

Net Treasury Income was up 20% to €182.1m.

SwapClear
SwapClear is the global market leader for OTC Interest Rate Swap (IRS) clearing, offering access to a deep pool of liquidity across 26 currencies to its 123 sell-side members and growing buy-side client base. In 2019, The Bank of China Ltd joined SwapClear, representing LCH's first clearing member from a Chinese banking group and demonstrating LCH's global reach as well as our growing business in, and commitment to, the Asia Pacific region.

2019 was a record year for SwapClear, total notional cleared reached US$1.2 quadrillion (2018: US$1.1 quadrillion). Client clearing also saw record levels, with notional cleared increasing 16% to US$301 trillion (2018: US$259 trillion) and client trades increasing by 13% to 1,681,000 (2018: 1,487,000). Inflation swap clearing saw volumes cleared increase 43% with a total of US$6.0 trillion in notional cleared in 2019 (2018: US$4.2 trillion). Changing global interest rates and associated volatility in the swaps markets as well as continued expansion of the product suite for example, the launch of further non-deliverable interest rate swaps in 5 new currencies, have contributed to these strong volumes in 2019. Going forward we expect these factors to be the main growth drivers for SwapClear.

LCH continues to innovate and work in partnership with its customers to meet growing market demand for the clearing of alternative reference rate products. In 2019, LCH became the first clearing house to offer clearing of Euro-denominated swaps benchmarked to the new reference rate, €STR. We have also seen good levels of adoption in USD-denominated swaps benchmarked to SOFR, launched in 2018, clearing over US$1 trillion of notional in 2019.

SwapClear is further able to present opportunities for capital and other efficiencies by offering both its own and third-party compression services which reduce the number of trades and overall notional value of portfolios by netting down compatible positions. SwapClear further expanded its own compression capabilities in 2019 and notional compressed continued to increase, rising 19% to US$920 trillion in total across all services in 2019 (2018: US$773 trillion).

ForexClear

ForexClear offers clearing across 17 currency pairs for non-deliverable forwards (NDFs) and, in collaboration with CLS's settlement service, offers clearing of spot, forwards and FX options in 8 currency pairs. In October 2019, ForexClear became the first CCP to launch clearing for outright FX forwards, this represents a significant expansion of the range of FX derivatives now available for clearing and incorporates the first physical settlement service for cleared FX products.

In 2019, ForexClear membership increased to 34 members (2018: 32) while notional cleared grew by 5% to US$18.0 trillion (2018: US$17.2 trillion). Of this US$61 billion was client cleared notional, up significantly from the previous year (2018: US$8 billion).

LCH also became the first clearing house to integrate with FX Connect TradeNeXus, State Street's market-leading FX trading platform. Users can now benefit from direct access to LCH's clearing service, via workflows integrated into TradeNeXus.

ForexClear's compression service volumes gathered momentum with US$48 billion in notional compressed over the year (2018: US$4.5 billion).

The Uncleared Margin Rules ('UMR') continue to provide economic incentives for institutions when they clear their FX trades and we expect to add more members, and especially clients to this service as counterparties are captured by the UMR requirements. In 2020, we expect to add Non-Deliverable Options to our list of cleared FX products, as well as connecting with more execution platforms.

RepoClear

In 2019, RepoClear had nominal value cleared of €22 trillion (2018: €49 trillion). Volumes in RepoClear reduced by 39% due to member driven consolidation of a large majority of Euro debt clearing into LCH SA. The consolidation followed long-standing requests from members seeking significant netting efficiencies. Sponsored Clearing continues to extend the full benefits of clearing to buy-side users.

EquityClear and Listed Derivatives

EquityClear clears for more than 16 different trading venues, demonstrating our commitment to an Open Access approach. The number of trades cleared in 2019 fell by 16% to 486 million (2018: 577 million). Clearing of London Stock Exchange Derivatives Market (LSEDM) contracts ceased in 2019, as they were withdrawn from the trading platform.

Net Treasury Income

The increase in Net Treasury Income in 2019 was largely driven by the increase in average cash collateral held, which rose by 15% to €77.9 billion (2018: €67.9 billion), which in turn is primarily driven by volumes cleared and market volatility, and in 2019, a change in risk methodology for SwapClear to ensure the client clearing service was adequately protected from defaults resulted in increased initial margin requirements. In 2019, we have worked to increase capacity with investment counterparties as well as expand the range of products that can be invested in to allow for continued asset allocation optimisation.

Section 172(1) Statement

Section 172 of the Companies Act 2006 requires a director of a company to act in the way he or she considers, in good faith, would most likely promote the success of the company for the benefit of its members as a whole. In doing this, section 172 requires a director to have regard, amongst other matters, to the:

- likely consequences of any decisions in the long-term;
- interests of the company's employees;
- need to foster the company's business relationships with suppliers, customers and others;
- impact of the company's operations on the community and environment;
- desirability of the company maintaining a reputation for high standards of business conduct, and
- need to act fairly as between members of the company.

In discharging our section 172 duties we have regard to the factors set out above and give consideration to those factors when discharging those duties. We also have regard to other factors which we consider relevant to our decisions. Those factors, for example, include the interests and views of, and our relationships with, pension scheme members, and other relevant authorities. We acknowledge that every decision we make will not necessarily result in a positive outcome for all of our stakeholders and we do, however, aim to make sure that our decisions are consistent and predictable. The Board recognises that building strong relationships with our stakeholders will help deliver the Company's strategy in line with our long-term values and operate the business in a sustainable way.

The Company's key stakeholders are its workforce, customers and regulators. Our suppliers are also important stakeholders of the Company. The views of and the impact of the Company's activities on those stakeholders are important considerations for the directors when making relevant decisions. While there are cases where the Board itself judges that it should engage directly with certain stakeholder groups, as a subsidiary of LCH Group and a majority-owned subsidiary of the London Stock Exchange Group ('LSEG'), it also benefits from certain engagement practices that take place at the LCH Group and LSEG level. For details of the engagement that takes place with stakeholders at LCH Group and LSEG, please see pages 6 to 8 of the LCH Group and pages 51 to 52 and 78 to 87 of the London Stock Exchange Group plc 2019 Annual Report and Accounts.

As is normal for large companies, the Board delegates authority for day-to-day management of the Company to the executives and then engages management in setting, approving and overseeing execution of the business strategy and related policies. During the period we received information to help us understand the interests and views of the Company's key stakeholders and other relevant factors when making decisions. Financial and operational performance, customer-related matters and legal and regulatory compliance are reviewed by the Board at each meeting, and during the course of the financial year other matters including the Company's business strategy, key risks (including risks relating to Brexit, reference rate reform and cyber risk and the Company's risk appetite), operational resilience and workforce matters (including culture, wellbeing, diversity and pensions) are considered and discussed at the Board level based on reports and presentations submitted to the Board. As a result of this we have had an overview of engagement with stakeholders and other relevant factors which allows us to understand the nature of the stakeholders' concerns and to comply with our section 172 duty to promote success of the Company.

In each Board pack, the Board are provided with a memorandum reminding them of, and providing guidance in connection with, their duties and responsibilities, including those set out in section 172 (1)(a)-(f). We set out below some examples of how we have had regard to the matters set out in section 172(1)(a)-(f) when discharging our section 172 duty and the effect of that on decisions taken by us.

Annual review of the Company's budget and business plan
The Board carries out a review of the Company's budget on an annual basis. This includes approving the business plan for the following three years. In 2019, the Board's review included a review of progress against 2019 strategic priorities and the Company's long-term strategic goals. The review also focused on investment decisions around the Company's resilience and regulatory priorities as well as commercial initiatives.

This review is carried out in parallel to LSEG's and LCH Group's budget process and the Company's CEO participates in the overall LCH Group Executive Committee budget and three-year business plan target setting. All financials are aligned to the numbers presented to the Group Board annually in December.

In making its decision to approve the business plan and future strategy of the Company, the Board also considered amongst other things, its impact on the long-term position of the Company as well as feedback from engagement exercises with the workforce and dialogue with customers and regulators.

Customers
The Company has Product Advisory Groups and Risk Working Groups where Customers are able to comment on proposed changes to markets, products and services, risk policies, models and frameworks. In addition, the Board includes in its membership representatives of clearing members, and shareholders of LCH Group, thereby allowing these groups of stakeholders to be part of decision making on the design of services, rules, overall strategy and major decisions. Further to this, the LCH Risk Committee also includes in its membership representatives of clearing members and clients, thereby allowing these groups of stakeholders to be consulted on recommendations made to the LCH Board on risk matters.

Regulators

During the year, members of the Board engaged with the Company's regulators to further foster its relationships and to better understand their expectations on matters that are critical to our business including Brexit, operational resilience including cyber preparedness and regulatory capital. The Company also participates in regulatory consultations on proposed future developments, which impact our business.

Work Force

Engagement with our workforce includes formal and informal meetings, an annual engagement survey and town hall meetings to keep the workforce up-to-date on business developments and financial and economic factors affecting the Company's performance. Many of these provide a forum in which employees can ask and Management can answer questions.

During the year the Board received an update on the actions being taken concerning talent management and succession planning. The Board also received the results of the annual "Have your say" survey. The survey enables employees to share their views on what it is like to work for the Company and it provides Management and the Board with insight into employees' views on a number of topics as well as enabling them to track employee engagement within the organisation. The Board received updates on the employee action plan prepared by Management, which reflected the feedback received from a working group composed of four members of the Management team and representatives of an employee led forum, [parts of] which is in the process of being implemented. Directors have also had opportunities to directly engage with Management and other colleagues during periodic visits to the Company's offices and through their attendance at Board and Committee meetings where employee matters are aired and feedback from employee representatives is considered.

Workforce engagement and activity is also supported by London Stock Exchange Group plc led mechanisms, including the opportunity to participate in a share option scheme, details of which can be found on page 119 of the London Stock Exchange Group plc 2019 Annual Report and Accounts. For details on some of the engagement that takes place with the Company's workforce at a Group level please see the Corporate Governance and Supporting our Sustainability section on pages 80 and 43 to 46 respectively of the London Stock Exchange Group plc Annual Report and Accounts.

Dividend, Capital allocation and Regulatory Capital

Each year the Board makes an assessment of the strength of the Company's balance sheet and future prospects relative to uncertainties in the external environment. In doing, so it has regard to the views of regulators as well as its shareholder.

In 2019, the Board recommended a final ordinary dividend of €87m and an interim dividend of €30m to its shareholder LCH Group Holdings Limited. In making this decision the Board considered a range of factors including the long-term viability of the Company; its expected cash flow and financing requirements, regulatory capital requirements, the financial position of the Company's pension scheme and the ongoing need for strategic investment in the business and our workforce as well as the expectations of our shareholder and regulators.

The Board monitors the Company's regulatory capital position as required under EMIR and carries out stress tests (MTFP) to ensure that it remains sufficiently capitalised under those rules.

Payment Practices

The Company is required to report its supplier payment performance and policies as part of the Small Business, Enterprise and Employment Act 2015. On a half yearly basis, the Board approves the required information which includes: the average time to pay (days), percentage of invoices paid within 30 and 60 days (respectively), invoices paid later than 60 days and invoices not paid within agreed terms. As part of our desire to foster good relationships with our suppliers, in 2019, further steps were taken to accelerate the payment process and focus was given to ensuring purchase orders are raised and receipted promptly and that the Group's procurement policy is complied with. This information is published on a government portal every six months and allows current and prospective suppliers to see the Company's payment policy, practice and performance, which could help reduce the administrative and financial burden companies face when not paid on time.

Pensions

The Company operates defined benefit and defined contribution pension schemes. The Company’s defined benefit scheme has 674 deferred members (members not yet retired). In 2018, the Board approved a pension strategy to target self-sufficiency by 2023 and agreed to make contributions of £3m per annum from 2018 to 2022 inclusive.

In 2019, the Board was required to consider and make a decision regarding an element of the defined benefit scheme, the provision of Company sponsored Independent Financial Advice. In making its decision the Board considered the benefits to pension scheme members (including members of the workforce) of the provision of this additional service and concluded that this would increase pension scheme member’s engagement and awareness of options available to them as well as the provision of quality advice made available to them. The Board approved the proposal to provide this service from 2020.

Principal risks and uncertainties

The Company’s activities expose it to a number of risks, principally market risk (financial market volatility, interest rate risk, foreign exchange risk), sovereign risk, credit risk, liquidity risk and capital risk. The Company manages these risks through various control mechanisms and its approach to risk management is to be prudent yet responsive to changes in the risk environment.

Note 2 provides descriptions of these risks and details the means by which the Company mitigates them.

Details of the Company’s capital management processes are provided in note 25.

By order of the Board

Lex Hoogduin
Chairman
27 February 2020

DIRECTORS' REPORT

The directors of LCH Limited (the Company), registered in England and Wales with company number 00025932, present their report to the shareholder, together with the audited financial statements for the year ended 31 December 2019.

Directors

The current directors and changes made during the year ended 31 December 2019 and subsequently are detailed on page 1.

Indemnity of directors

Directors are entitled to be indemnified by the Company against all costs, charges, losses and liabilities incurred by them in the proper exercise of their duties. Directors who have resigned during the year may also benefit from the same indemnity arrangement.

Transactions with directors and related parties

Details of transactions with related parties are set out in note 27. There were no transactions, other than those disclosed in note 19, with directors during the year.

Staff

It is the policy of the Company as a whole to ensure that no staff members or job applicants face discrimination on the grounds of ethnic origin, colour, religion, gender, sexual orientation, age or disability. Should an employee become disabled during his or her career with the Company every effort will be made to ensure continuing employment.

Staff involvement is encouraged through regular meetings and information is shared with staff through web-based communication.

The Company recognises its responsibilities to provide a safe working environment for its staff and measures are in place to ensure that the appropriate health and safety at work regulations are strictly observed in all workplaces.

Employee and stakeholder engagement

For details of the Company's employee and stakeholder engagement, please see the Section 172(1) Statement in the strategic report on pages 4 to 7.

Corporate responsibility

The Company, as part of LSEG, has a zero-tolerance approach to modern slavery. A 'Slavery and Human trafficking statement' is published on LSEG's website (https://www.lseg.com/about-london-stock-exchange-group/corporate-responsibility/modern-slavery-act-statement) that describes the action plan and steps to be taken during 2019 to improve the supply chain management and procurement processes and procedures.

Other policies relating to the Company's corporate responsibility are also published on the website.

Dividends

On 13 February 2020, the Board of Directors proposed a dividend of €0.3961 per ordinary share (€124 million), pending regulatory review.

The final dividend for 2018 of €87.0 million was paid on 14 May 2019.

On 4 November 2019, the Company paid an interim dividend of €0.0958 per ordinary share (€30.0 million) to its shareholder.

Financial instruments

Details of the Company's financial instruments are provided in note 20.

Going concern and liquidity risk

The directors have made an assessment of the Company's ability to continue as a going concern and to meet current and future regulatory capital requirements and are satisfied that it has the resources to continue in business for the foreseeable future, being at least 12 months from the date on which these accounts were approved by the Board. Contracts for the majority of the exchanges for which the Company clears have a notice period of at least one year. It has a large number of clearing members and is not unduly reliant on any single clearing member or group of clearing members.

Furthermore, the directors are not currently aware of any material uncertainties that may cast significant doubt upon the Company's ability to continue as a going concern. Therefore the financial statements continue to be prepared on the going concern basis.

Government grants

The Company has applied for government grants in the form of tax credits for research and development work carried out. The amounts have been recognised in the results of the Company when it is deemed likely that the credits will be received (note 26). The Company carries out research and development into software for future use.

Brexit

The UK left the EU on 31 January 2020, with transition period agreed until 31 December 2020. LCH remains an (EMIR Article 14) authorised EU CCP until the end of the transition period.

LCH Ltd is seeking a transition from temporary to permanent recognition under the revised supervisory framework for EU and third country CCPs (EMIR Article 25 as revised by 'EMIR 2.2').

Corporate Governance Code

LCH Limited is committed to high standards of corporate governance. As a recognised CCP, it is required to comply with EMIR, along with the related Regulatory Technical Standards ('RTS') and CCP requirements across a number of jurisdictions. These regulations prescribe minimum standards for governance arrangements; as such the Company did not formally adopt any specific corporate governance code during the financial year.

In accordance with EMIR the key components of the governance arrangements of a CCP include the following:

(a) the composition, role and responsibilities of the board and any board committees;
(b) the roles and responsibilities of the management;
(c) the senior management structure;
(d) the reporting lines between the senior management and the board;
(e) the procedures for the appointment of board members and senior management;
(f) the design of the risk management, compliance and internal control functions;
(g) the processes for ensuring accountability to stakeholders.

Board composition, roles, responsibilities and appointments

The objectives of LCH Limited are clearly identified and are:

- To provide market leading risk management and clearing solutions.
- To manage our members' and clients' risk by providing effective and efficient clearing services.
- To promote a safe and stable financial market foremost in all that we do.

The Board has approved a Schedule of Reserved Matters that clearly sets out its role and responsibilities in supporting the achievement of these objectives. A of copy of the Schedule of Matters Reserved is available on the LCH Limited website.

The Board comprises 10 directors including; a Chair who is Independent on appointments, the CEO, four independent non-executive directors (who meet the independence criteria defined by EMIR) (the 'INEDs'), three non-executive directors representing shareholders of LCH Group Holdings Limited and two executive directors. As at 31 December 2019 there was a vacancy for an INED, the recruitment for which was in progress. The names of the directors who served during the financial year are listed on page 1. Biographies for each of the current Directors are available on the LCH Limited website.

The Board takes the advice of the LCH Group Nomination Committee before approving changes to its size, structure and members. The LCH Group Nomination Committee ensures that its recommended candidates are respected for their competence and are of good standing in their respective fields of business. Collectively the Board members have appropriate skills, ranging from, but not limited to, accounting, operations, technology and risk management. The LCH Group Nomination Committee has adopted a Board Diversity Policy to support greater diversity of Board members in age, gender, geographic provenance, education and professional background to present a variety of views and experiences.

All INED appointments are made subject to the non-objection of the Bank of England.

New Directors receive an induction, tailored to their experience and knowledge. Additional training and deep dive sessions are also provided during the course of the year or at the Board's request.

The Board assesses the Company's performance against its objectives through regular business and risk management reviews, with a programme of five scheduled Board meetings every year. Additional ad-hoc meetings are scheduled as required. In addition the Board has established an Audit Committee and a Remuneration Committee, as well as an advisory Risk Committee and a Technology, Security & Resilience Committee (TSR Committee). The roles and responsibilities of each of these committees is set out in their respective terms of reference, which are available on the LCH Limited website. Any proposed changes to the terms of reference are reported to the relevant committee for recommendation to the Board. All sub-committees are chaired by an INED and, with the exception of the TSR Committee, are composed exclusively of non-executive directors.

The Board last undertook a formal effectiveness review facilitated by an independent assessor during the course of 2018, with the results reported in February 2019. The Board also undertakes regular self-assessments of its own performance. These reviews include consideration of the performance of LCH's Board members, the Chairman, and the LCH Limited Board's behaviours and culture.

The Company's Articles of Association set out the obligations on LCH Limited's Directors to disclose any potential conflicts of interest to the other Directors, as well as the actions which may be taken to mitigate such conflicts as they arise. The LCH Limited Board of Directors performs an annual declaration of potential or actual conflicts of interest.

Management roles, responsibilities and structure

The Board has delegated responsibility for the day-to-day management of the Company to the LCH Limited CEO as set out in the LCH Limited Executive Delegation. The CEO has established a Management Team, as an advisory forum to provide advice and recommendations in order to discharge such responsibility. The CEO has the power to delegate such authority to such LCH Limited employees as appropriate and necessary.

LCH's senior management is responsible, in general, for ensuring consistency of LCH's activities with the LCH Limited Board's objectives and strategy. Senior management establish appropriate internal controls, which are subjected to regular review and testing, and ensure sufficient resources are devoted to risk management and compliance.

LCH's management team is made up of experienced professionals, taking responsibility for distinct areas of the operation, risk management and control of the CCP. In separating responsibilities, LCH Limited has management in place with the necessary expertise for each area and maintains the mix of skills required for the operation and risk management of the CCP.

LCH Limited ensures that its management has the necessary expertise by following a Vetting Policy and framework which sets rigorous pre-employment screening for all prospective LCH Limited employees; the vetting process is carried out within industry benchmarks and according to the roles that the employees perform. The range of vetting required varies based on factors such as the risk level and grade level of the role that the individual is being offered. Additional vetting is performed for senior management roles to ensure that they are of sufficiently good repute and have sufficient experience to ensure sound and prudent judgement within their roles.

The Board is responsible for the oversight of the Company's Chief Compliance Officer, internal audit function and Chief Risk Officer all of whom report directly to the Board. The LCH Limited Head of Internal Audit reports directly to the Chair of the LCH Limited Audit Committee.

Risk Management

The LCH Limited Board has adopted a Risk Governance Framework, setting out the risks facing LCH, its tolerance for these risks, the personnel with responsibility for each risk, and has defined reporting requirements for each. The Risk Governance Framework requires that a comprehensive risk policy framework is maintained which identifies how each risk is managed to the Board's standards and tolerance levels. The policy framework comprises a suite of risk policies, each of which is annually reviewed by the LCH Risk Committee and, where appropriate, the LCH Technology, Security & Resilience Committee, before being submitted for approval by the LCH Limited Board.

The risk management function is responsible for putting the risk policy framework into practice and making reports to the Board, the Risk Committee, the Audit Committee and where appropriate, the TSR Committee.

Accountability to stakeholders

LCH Limited provides accountability to owners, participants and other relevant stakeholders by including users, customers, clearing members and client representatives in governance forums. LCH's clearing services run Product Advisory Groups and Risk Working Groups where participants are able to comment on proposed changes to markets, products and services, risk policies, models and frameworks. In addition, clearing members and clients of clearing members are represented on the LCH Board Risk Committee, where all risk policies, and material new business proposals and service changes are reviewed prior to their submission to the Board for approval and where all risk decisions made by the Executive under delegated authority of the Board are notified.

Management and members of the Board meet with the Company's regulators during the course of the year and proactively engage to facilitate strong relationships and understand their expectations that are critical to our business.

Disclosure of information to the auditors

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

- so far as the director is aware there is no relevant audit information of which the Company's auditors are unaware
- the director has taken all steps that they ought to have taken as director in order to make themselves aware of any relevant audit information and to establish that the Company's auditors are aware of that information

Auditors

Ernst & Young LLP are deemed to have been reappointed as the Company's auditor under the provisions of the Companies Act 2006.

By order of the Board

Lex Hoogduin
Chairman
27 February 2020

STATEMENT OF DIRECTORS' RESPONSIBILITIES

The directors are responsible for preparing the strategic report, directors' report and financial statements in accordance with applicable United Kingdom law and those International Financial Reporting Standards (IFRSs) as adopted by the European Union.

Under company law the directors must not approve the financial statements unless they are satisfied that they present fairly the financial position, financial performance and cash flows of the Company for that period. In preparing the financial statements the directors are required to:

- select suitable accounting policies in accordance with IAS 8, Accounting Policies, Changes in Accounting Estimates and Errors, and then apply them consistently
- present information, including accounting policies, in a manner that provides relevant, reliable, comparable and understandable information
- provide additional disclosures when compliance with specific requirements in IFRSs is insufficient to enable users to understand the impact of particular transactions, other events and conditions on the Company's financial position and financial performance
- state that the Company has complied with IFRSs, subject to any material departures disclosed and explained in the financial statements
- make judgements and estimates that are reasonable and prudent

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

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF LCH LIMITED

Opinion

We have audited the financial statements of LCH Limited for the year ended 31 December 2019 which comprise the Income statement, the Statement of comprehensive income, the Statement of financial position, the Statement of cash flows, the Statement of changes in equity and the related notes 1 to 27, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union.

In our opinion, the financial statements:

- give a true and fair view of the Company's affairs as at 31 December 2019 and of its profit for the year then ended;
- have been properly prepared in accordance with IFRSs as adopted by the European Union; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report below. We are independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

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

- 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.

Other information

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information.

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in this report, we do not express any form of assurance conclusion 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 such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in 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 the other information, we are required to report that fact.
We have nothing to report in this regard.

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 directors' report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or directors' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- 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; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit

Responsibilities of directors

As explained more fully in the directors' responsibilities statement set out on page 13, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors 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.

Auditor's 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 auditor's 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 Financial Reporting Council's website at https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF LCH LIMITED

Use of our report

This report is made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Ernst & Young LLP

Maurice McCormick (Senior statutory auditor)
for and on behalf of Ernst & Young LLP, Statutory Auditor
London
27 February 2020

Notes:
1. The maintenance and integrity of the LCH Limited web site is the responsibility of the directors; the work carried out by the auditors does not involve consideration of these matters and, accordingly, the auditors accept no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the web site.
2. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

INCOME STATEMENT

		2019			2018		
	Note	**Underlying €'m**	**Non-underlying €'m**	**Total €'m**	Underlying €'m	Non-underlying €'m	Total €'m
Clearing fees	4	**351.8**	**-**	**351.8**	325.4	-	325.4
Other fee income	4	**103.6**	**-**	**103.6**	101.4	-	101.4
Revenue		**455.4**	**-**	**455.4**	426.8	-	426.8
Treasury income	20	**1,173.1**		**1,173.1**	847.5		847.5
Treasury expense	20	**(991.0)**		**(991.0)**	(696.0)		(696.0)
Net treasury income		**182.1**	**-**	**182.1**	151.5	-	151.5
Settlement fee income		**19.7**		**19.7**	18.7		18.7
Settlement fees payable		**(22.7)**		**(22.7)**	(24.1)		(24.1)
Net settlement fee expense		**(3.0)**	**-**	**(3.0)**	(5.4)	-	(5.4)
Other income		**11.2**		**11.2**	7.9		7.9
Total income		**645.7**	**-**	**645.7**	580.8	-	580.8
Cost of sales		**(127.8)**	**-**	**(127.8)**	(136.6)	-	(136.6)
Gross profit		**517.9**	**-**	**517.9**	444.2	-	444.2
Operating expenses	5	**(191.7)**	**(3.7)**	**(195.4)**	(186.3)	-	(186.3)
Earnings before interest, tax, depreciation, amortisation and impairment		**326.2**	**(3.7)**	**322.5**	257.9	-	257.9
Depreciation, amortisation and impairment	5	**(58.4)**	**-**	**(58.4)**	(53.7)	-	(53.7)
Operating profit		**267.8**	**(3.7)**	**264.1**	204.2	-	204.2
Finance income	7	**2.4**	**-**	**2.4**	2.5	-	2.5
Finance expense	7	**(2.6)**	**-**	**(2.6)**	(2.6)	-	(2.6)
Profit before taxation		**267.6**	**(3.7)**	**263.9**	204.1	-	204.1
Taxation	8	**(52.6)**	**0.7**	**(51.9)**	(37.3)	-	(37.3)
Profit for the year		**215.0**	**(3.0)**	**212.0**	166.8	-	166.8

The results for both years are in respect of continuing operations.

The notes on pages 23 to 64 form an integral part of these financial statements.

STATEMENT OF COMPREHENSIVE INCOME

	Note	2019 €'m	2018 €'m
Profit for the year		**212.0**	166.8
Amounts that may subsequently be reclassified to profit or loss:			
Net (losses)/gains on the revaluation of financial assets through OCI		**1.9**	(13.3)
Net (losses)/gains on amounts reclassified to the income statement		**(1.8)**	4.9
Deferred tax relating to revaluation of financial assets through OCI	8	**(0.1)**	1.8
		-	(6.6)
Amounts that will not subsequently be reclassified to profit or loss for the year:			
Remeasurement (losses)/gains on UK defined benefit plan	19	**12.8**	(16.4)
Exchange (losses)/gains on translation of deferred tax on UK defined benefit		**(1.0)**	-
Deferred tax relating to remeasurement of the UK defined benefit plan	8	**(3.5)**	5.4
		8.3	(11.0)
Total comprehensive income for the year		**220.3**	149.2

The results for both years are in respect of continuing operations.

The notes on pages 23 to 64 form an integral part of these financial statements.

STATEMENT OF FINANCIAL POSITION

	Note	**2019** €'m	2018 €'m
Non-current assets			
Intangible assets	9	**201.5**	183.2
Property, plant and equipment	11	**21.0**	9.6
Trade and other receivables	13	**1.0**	0.7
Employment benefits	19	**69.1**	51.2
Deferred tax assets	8	**1.1**	-
Total non-current assets		**293.7**	244.7
Current assets			
Trade and other receivables	13	**150.6**	313.7
Group relief receivable		**0.5**	1.2
Interest bearing loans	17	**0.6**	5.8
Balances with clearing members	12	**212,243.8**	326,005.4
Clearing business other financial assets		**22,129.1**	16,288.9
Clearing business cash and cash equivalents		**56,688.2**	52,698.9
Cash and cash equivalents	14	**649.7**	605.8
Total current assets		**291,862.5**	395,919.7
Total assets		**292,156.2**	396,164.4
Liabilities			
Current liabilities			
Trade and other payables	15	**(345.5)**	(261.7)
Interest bearing borrowings	17	**-**	(5.5)
Current tax liability		**(20.5)**	(12.4)
Balances with clearing members	12	**(280,798.0)**	(386,284.3)
Provisions	21	**(1.1)**	-
Default funds	18	**(10,197.1)**	(8,929.3)
Total current liabilities		**(291,362.2)**	(395,493.2)
Non-current liabilities			
Deferred tax liability	8	**(14.9)**	(9.2)
Provisions	21	**(0.6)**	-
Trade and other payables	15	**(16.0)**	(2.6)
Total non-current liabilities		**(31.5)**	(11.8)
Total liabilities		**(291,393.7)**	(395,505.0)
Net assets		**762.5**	659.4

STATEMENT OF FINANCIAL POSITION

	Note	**2019 €'m**	2018 €'m
Capital and reserves			
Ordinary share capital	23	**313.0**	313.0
Share premium	23	**41.2**	41.2
Capital redemption reserve	23	**5.1**	5.1
Retained earnings	23	**403.2**	300.1
Total equity		**762.5**	659.4

The notes on pages 23 to 64 form an integral part of these financial statements.

The financial statements were approved by the Board on 27 February 2020 and signed on its behalf by:

Lex Hoogduin
Chairman

Isabelle Girolami
Chief Executive Officer

STATEMENT OF CASH FLOWS

	Note	**2019** €'m	2018 €'m
Cash flows arising from operating activities			
Profit for the year		**212.0**	166.8
Taxation Expense	8	**51.9**	37.3
Finance income	7	**(2.4)**	(2.5)
Finance expense	7	**2.6**	2.6
Depreciation and amortisation	5	**58.4**	53.7
Share-based payments expense		**4.1**	3.3
Decrease/(increase) in trade and other receivables		**162.8**	(147.0)
Increase in trade and other payables		**75.8**	33.2
Research and development tax credit		**(1.6)**	(0.6)
Increase in clearing business cash and cash equivalents		**(3,989.3)**	(9,030.6)
Decrease in fair value of member assets		**113,761.6**	20,582.3
Decrease in fair value of member liabilities		**(105,486.3)**	(14,913.9)
Increase in default funds		**1,267.8**	461.7
Movement in provisions		**1.7**	-
Movement pension		**(3.5)**	(5.1)
Revaluation of financial instruments through OCI		**0.1**	(8.4)
Net cash inflow/(outflow) from operations		**6,115.7**	(2,767.2)
Tax paid		**(38.9)**	(33.8)
Net cash inflow/(outflow) from operating activities		**6,076.8**	(2,801.0)
Investing activities			
Investment in intangible assets	9	**(66.9)**	(67.3)
Purchase of property, plant and equipment	11	**(2.8)**	(0.2)
Redemption of clearing business other financial assets		**(5,840.2)**	2,980.7
Net cash (outflow)/inflow from investing activities		**(5,909.9)**	2,913.2
Financing activities			
Loan amounts repaid		**(0.3)**	(45.9)
Interest received		**0.6**	0.1
Interest paid		**(2.5)**	(2.4)
Dividends paid	24	**(117.0)**	(163.0)
Share-based payments contribution		**(4.1)**	(3.3)
Finance lease principal payments		**(5.2)**	-
Net cash outflow financing activities		**(128.5)**	(214.5)
Increase/(decrease) in cash and cash equivalents		**38.4**	**(102.3)**
Cash and cash equivalents at 1 January		**605.8**	706.1
Effects of foreign exchange movements		**5.5**	2.0
Cash and cash equivalents at 31 December		**649.7**	605.8
Cash and cash equivalents at 31 December comprise:			
Short-term deposits		**599.0**	540.4
Cash at bank and in hand		**50.7**	65.4
	14	**649.7**	605.8

STATEMENT OF CHANGES IN EQUITY

	Called-up share capital €'m	Share premium €'m	Capital redemption reserve €'m	Retained earnings €'m	Total €'m
Shareholders' equity at 1 January 2018	313.0	41.2	5.1	313.2	672.5
Profit for the year ended 31 December 2018	-	-	-	166.8	166.8
Other comprehensive expense	-	-	-	(17.6)	(17.6)
Total comprehensive income	-	-	-	149.2	149.2
Dividends paid	-	-	-	(163.0)	(163.0)
Share-based payments contribution	-	-	-	3.3	3.3
Share-based payments expense net of tax	-	-	-	(2.6)	(2.6)
Shareholders' equity at 31 December 2018	313.0	41.2	5.1	300.1	659.4
Shareholders' equity at 1 January 2019	313.0	41.2	5.1	300.1	659.4
Adjustment on adoption of IFRS 16	-	-	-	(2.4)	(2.4)
Shareholders' equity at 1 January 2019 (restated)	313.0	41.2	5.1	297.7	657.0
Profit for the year ended 31 December 2019	-	-	-	212.0	212.0
Other comprehensive income	-	-	-	8.3	8.3
Total comprehensive income	-	-	-	220.3	220.3
Dividend approved during the year	-	-	-	(117.0)	(117.0)
Share-based payments contribution	-	-	-	4.1	4.1
Share-based payments expense net of tax	-	-	-	(1.9)	(1.9)
Shareholders' equity at 31 December 2019	313.0	41.2	5.1	403.2	762.5

The notes on pages 23 to 64 form an integral part of these financial statements.

1. Summary of significant accounting policies and basis of preparation

Basis of preparation

These financial statements have been prepared in accordance with IFRSs and the IFRS Interpretations Committee (IFRS IC) interpretations issued by the International Accounting Standards Board (IASB) effective for 2019 reporting and endorsed by the EU, and with those parts of the Companies Act 2006 applicable to companies reporting under IFRS.

The financial statements have been prepared under the historical cost convention as modified by the valuation of financial assets and liabilities held at fair value. A summary of significant accounting policies is set out below, together with an explanation of changes to previous policies on the adoption of new accounting standards.

The Company uses a columnar format for the presentation of its income statement. This aids the understanding of its results by presenting profit for the year before any non-underlying items. Non-underlying items includes items which do not form part of the Company's ongoing trading position and other items that due to their size and nature are regarded as non-underlying. Underlying profit is reconciled to profit before taxation on the face of the income statement.

New accounting standards, amendments and interpretations

Standards issued and adopted for the financial year beginning 1 January 2019

The following amendments have been issued by the IASB and IFRIC and have been adopted during the year:

	Effective date for periods beginning on or after
Amendments to IAS 28: Long-term Interests in Associates and Joint Ventures	1 January 2019
Amendments to IAS19: Plan Amendment, Curtailment or Settlement	1 January 2019
Amendments to IFRS 9: Prepayment Features with Negative Compensation	1 January 2019
Annual Improvements to IFRS Standards 2015-2017	1 January 2019
IFRIC 23 Uncertainty over Income Tax Treatments	1 January 2019
IFRS 16 Leases	1 January 2019

IFRS 16 Leases

On 1 January 2019, the Company adopted IFRS 16 Leases. The impact of adopting the new standard has been reflected through transition adjustments to the Company's opening retained earnings at the start of the current year, as presented in the statement of changes in equity. The table below provides a summary of the impact at the date of transition:

	As reported 31 December 2018 €m	**Adjustments €m**	**After adoption 1 January 2019 €m**
Property, plant and equipment	9.6	19.0	28.6
Investment in leases	-	-	-
Total assets	**9.6**	**19.0**	**28.6**
Trade and other payables			
Other payables	2.6	(0.3)	2.3
Lease liabilities - current	-	2.9	2.9
Lease liabilities - non-current	-	19.3	19.3
Deferred tax liabilities	9.2	(0.5)	8.7
Total liabilities	**11.8**	**21.4**	**33.2**
Retained earnings	300.1	2.4	302.5
Equity	**300.1**	**2.4**	**302.5**

The Company adopted IFRS 16 Leases on 1 January 2019 using the modified retrospective transitional arrangements and consequently the comparative amounts have not been restated.

The standard requires the Company to recognise a right-of-use asset where the Company has a long-term arrangement to benefit from an asset which it controls in return for regular consideration (a lease). This definition includes the majority of the Company's offices around the world, and these form the largest group of assets recognised on 1 January.

The Company has recognised right-of-use assets and corresponding liabilities for all leased assets, except for those with only short-term commitment (less than 12 months) or for individual assets of a value less than £5,000. In such cases, the Company recognises the associated lease payments as an expense on a straight-line basis over the lease term.

Right-of-use assets for property or equipment are included within property, plant and equipment on the face of the balance sheet. Assets relating to the right-of-use of an intangible are included within intangible assets on the face of the balance sheet.

The cost of right-of-use assets was calculated as if the Company had always applied the new standard but using an incremental borrowing rate calculated as at 31 December 2018. The value recognised for lease liabilities is the present value of the remaining lease payments, discounted to 1 January 2019 using the same rate.

The following practical expedients have been applied by the Company:

- The use of hindsight to determine the lease term, if the contract included extensions or break clauses
- Application of the short-term lease exemption to leases that expired before 31 December 2019
- Excluding initial direct costs from the measurement of the cost of the asset
- Applying a single discount rate to groups of leases with similar characteristics, e.g. similar period and location

A reconciliation of the new liabilities recognised to the amounts disclosed at 31 December 2018 as lease commitments is given below:

	€m
Lease commitments at 31 December 2018	23.2
Discounted lease commitments at 1 January 2019	22.2
Lease liability as at 1 January 2019	**22.2**

Weighted average incremental borrowing rate as at 1 January 2019 is 0.95%.

All other changes had no material effect on the financial statements.

Standards issued but not effective for the financial year beginning 1 January 2019 and not early adopted

The following standards, amendments and interpretations have been issued by the IASB and IFRIC but have not been adopted:

	Effective date for periods beginning on or after
Amendment to IFRS 3, 'Business Combinations'	1 January 2020*
Amendments to IAS 1 and IAS 8: Definition of Material	1 January 2020
Amendments to Reference to the Conceptual Framework in IFRS Standards	1 January 2020
Amendments to IFRS 9, IAS 39 & IFRS 7: Interest Rate Benchmark Reform	1 January 2020*
IFRS 17, 'Insurance Contracts'	1 January 2021*

***** subject to EU endorsement

Presentation currency

The Company's financial statements are presented in euros, which is the functional currency of the Company.

Judgements and key sources of estimation uncertainty

The preparation of financial statements in conformity with IFRSs requires the use of judgements, estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Although these judgements and estimates are based on management's best knowledge of the amount, event or actions, actual results ultimately may be different.

Estimates

The key sources of estimation uncertainty that have a significant risk of causing material adjustments to the carrying amounts of assets and liabilities within the next financial year are:

- The measurement of defined benefit pension obligations: measurement of defined benefit pension obligations requires estimation of inflation as well as mortality rates, the expected return on assets and the choice of a suitable discount rate (see note 19).
- The measurement of the clearing member balances. The Company nets significant balances where there is a legal right of offset and an intention to settle net and discloses the net balances in the statement of financial position. However, as the Company acts as principal in these trades and has an equal liability for every asset, there is no material risk to the net asset position of the Company, should these estimates prove to be inaccurate (see note 20).

Judgements

- The Company uses its judgement to carry out the offsetting within clearing member balances. The carrying values of the balances are offset at what the Company considers an appropriate level to arrive at the net balances reported in the statement of financial position. The Company has aligned the basis of estimation for its CCP subsidiaries to ensure the principles are applied using a consistent methodology across similar assets and liabilities. The basis will be reviewed from time to time to ensure the approach used is the most appropriate.
- The Company has recognised a pension asset on the LCH section of the UK LSEG pension fund. The Trust Deed provides the Company with an unconditional right to a refund of surplus plan assets on a winding up of the scheme and the Company believes this amount to be recoverable in current circumstances. Should the asset be derecognised, there would be no impact to the income statement, with all movements recognised in the statement of other comprehensive income. The recognition of the asset will be kept under review, particularly in the light of any developments in IFRIC 14.

Accounting Policies

Foreign currencies

Monetary assets and liabilities denominated in currencies other than the functional currency are translated into the functional currency of the entity at the rates of exchange ruling on the statement of financial position date and the resulting exchange differences are recorded in the income statement, except for differences arising on the pension assets or liabilities which are recognised in other comprehensive income

Transactions in foreign currencies are recorded at the prevailing foreign exchange rates on the date of the transaction in the income statement and are not revalued.

Intangible assets other than goodwill

Intangible assets other than goodwill are initially recognised at cost and are capitalised on the statement of financial position. Where assets are acquired as a result of a business acquisition or the negotiation of an operating agreement, fair values are attributed to the assets acquired. Following initial recognition the assets are amortised at rates calculated to write off their cost on a straight line basis over their estimated useful lives.

An internally generated intangible asset arising from the Company's business development is created if the asset can be identified, its cost measured reliably and it is probable that it will generate future economic benefits. Amortisation is charged from the date the developed product, service, process or system is available for use. Self-developed software is generally amortised on a straight line basis over periods between three and five years, occasionally it will be longer if applicable. Licenses for software acquired are amortised over seven years.

Property, plant and equipment

Property, plant and equipment is initially recognised at cost and capitalised in the statement of financial position and is stated at cost less accumulated depreciation and accumulated impairment losses. Depreciation is provided on all property, plant and equipment at rates calculated to write off the cost, less estimated residual value based on current prices, of each asset over its expected useful life as follows:

- leasehold refurbishment over the term of the lease (up to a maximum of ten years)
- computer equipment and purchased software over three to five years
- office equipment and other fixed assets over three to five years

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected to arise from continued use of the asset. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the item) is included in the income statement in the year the item is derecognised.

Impairment of goodwill, intangible assets, and property, plant and equipment

Goodwill and intangible assets in the course of development are subject to an annual impairment review or a more frequent review if there are events or changes in circumstances that indicate that the carrying amount of the asset may not be fully recoverable. Other intangible assets and property, plant and equipment are subject to an impairment review if there are events or changes in circumstances that indicate that the carrying amount of the asset may not be fully recoverable.

For the purpose of impairment testing, goodwill and other assets are allocated to cash generating units monitored by management. The impairment review involves a comparison of the carrying amount of the goodwill or other asset allocated to the related cash generating units, with its recoverable amount, which is the higher of fair value less costs to sell and value in use. Fair value less costs to sell is calculated by reference to the amount at which the asset could be disposed of less the costs associated with the sale.

Value in use is calculated by discounting the expected future cash flows obtainable as a result of the assets continued use, including those resulting from its ultimate disposal, at a market based discount rate on a pre-tax basis. The carrying values of goodwill, intangible assets or property, plant and equipment are written down by the amount of any impairment and this loss is recognised in the income statement in the year in which it occurs.

The carrying amount of goodwill allocated to a cash generating unit is taken into account when determining the gain or loss on disposal of the unit.

Financial instruments

The Company classifies its financial instruments as fair value through profit or loss (FVPL), fair value through other comprehensive income (FVOCI) or amortised cost. The classification depends on the Company's business model for managing its financial instruments and whether the cash flows generated are "solely payments of principal and interest" (SPPI).

- Financial assets at amortised cost are financial assets that are held in order to collect the contractual cash flows and the contractual terms give rise to cash flows that are solely payments of principal and interest. This will include the Company's cash and cash equivalents and trade and other receivables. Clearing member trading balances relating to sale and buy back transactions and other receivables from clearing members of the CCP businesses also fall within this category.

- Financial assets at fair value through other comprehensive income (FVOCI) are assets where the objective is achieved by both collecting the contractual cash flows, or selling the asset. The contractual cash flows received are solely payments of principal and interest. This category includes investments in financial assets and quoted debt instruments (predominantly government bonds) held by the Company, which are used under the business model to both collect the contractual cash flows and also to benefit from a sale. The assets must also pass the SPPI test to be considered as FVOCI. Any asset which fails this test is immediately transferred to the FVPL classification and treated accordingly. Any profit or loss recognised in other comprehensive income on debt instruments is recycled to the income statement if the asset is sold. Any profit or loss on an equity investment remains in other comprehensive income and is not recycled.

- Financial assets at fair value through profit or loss (FVPL) include all other financial assets not classified as amortised cost or FVOCI. This category includes CCP businesses' clearing member trading balances comprising derivatives, equity and debt instruments that are marked to market on a daily basis. There is no change on the previous treatment for these instruments.

- Financial liabilities at amortised cost are all financial liabilities that are not included within financial liabilities at fair value through profit or loss. This comprises the Company's trade and other payables balances, borrowings and other payables to clearing members.

- Financial liabilities at fair value through profit or loss (FVPL) are liabilities that must be held at fair value. This includes all the CCP businesses' clearing member trading balances, comprising derivatives, equity and debt instruments, which are marked to market on a daily basis.

The Company adopts a forward-looking approach to estimate impairment losses on financial assets. An expected credit loss (ECL) is calculated based on the difference between the contractual cash flows due and the expected cash flows. The difference is discounted at the asset's original effective interest rate.

Financial assets at amortised cost – the ECL for trade receivables, contract assets and cash and cash equivalents is calculated using IFRS 9's simplified approach using lifetime ECL. The provision is based on the Company's historic experience of collection rates, adjusted for forward looking factors specific to each counterparty and the economic environment at large to create an expected loss matrix.

Financial assets held at FVOCI – the Company's financial assets held at FVOCI consist of high quality government bonds that have a low credit risk. The Company's policy is to calculate a 12 month ECL on these assets. If there is a significant increase in credit risk, then a lifetime ECL will be calculated. A significant increase in credit risk is considered to have occurred when contractual payments are more than 30 days past due or there is a significant deterioration in the credit rating of the counterparty.

Financial assets at fair value through profit or loss (FVPL) – in accordance with IFRS 9, no ECLs are required for assets held at FVPL.

Impairment losses on the remaining financial assets are measured using the general approach. The Company calculates a loss allowance based on the 12 month ECL at each reporting date until there is a significant increase in the financial instrument's credit risk, at which point the Company will calculate a loss allowance based on the lifetime ECL, as described above for FVOCI assets.

Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously.

The Company establishes fair value using recognised valuation techniques. These include the use of externally available market prices, discounted cash flow analysis and other valuation techniques commonly used by market participants. Where discounted cash flow analysis and other valuation techniques are used assumptions are validated against market observable inputs.

Cash and cash equivalents

Cash and cash equivalents comprises cash at bank, short-term deposits, and other instruments and structures that are readily convertible to known amounts of cash and are subject to insignificant risk of changes in value. These amounts relate to funds generated in relation to the operating activities of the Company and can be deposited with banks, including central banks, or invested securely in overnight reverse repurchase contracts (reverse repos).

Clearing business cash and cash equivalents represents amounts received from the clearing members to cover initial and variation margins and default fund contributions that are not invested in bonds. These amounts are deposited with banks, including central banks, or invested securely in overnight reverse repurchase contracts (reverse repos).

Default fund and margin deposits

Default fund contributions paid by clearing members are in cash. Clearing members may elect to use cash or securities to cover initial margin requirements; realised variation margin may only be covered in cash. Members may pledge securities directly using a bilateral delivery mechanism. Cash initial margin, variation margin and default fund deposits are reflected in the statement of financial condition as assets and liabilities.

The amount of margin deposits on hand will fluctuate over time as a result of, among other things, the extent of open positions held at any point in time by market participants in contracts and the margin rates then in effect for such contract.

Non-cash initial margin is not reflected in the statement of financial position. These non-cash assets are held in safekeeping, and the Company does not take legal ownership of the assets as the risks and rewards remain with the clearing member, unless and until such time as the clearing member defaults on its obligations to the Company.

Derecognition of financial assets and financial liabilities

A financial asset or liability is generally derecognised when the contract that gives rise to it is settled, sold, cancelled or expires. Where an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, such that the difference in the respective carrying amounts together with any costs or fees incurred are recognised in the income statement.

Taxation

Income tax relating to items recognised directly in other comprehensive income is charged or credited as appropriate to other comprehensive income and there is no effect on profit for the year.

Current tax

Current tax assets and liabilities for current and prior periods are measured at the amount expected to be recovered from or paid to relevant taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by the balance sheet date.

Deferred tax

Deferred income tax is provided using the liability method on temporary differences at the statement of financial position date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes using tax rates and laws enacted or substantively enacted by the balance sheet date.

Deferred tax liabilities are recognised for all temporary differences. Deferred income tax assets are recognised for all deductible temporary differences to the extent that it is probable that taxable profit will be available against which the deductible temporary differences can be utilised and it is not probable that the temporary differences will reverse in the foreseeable future.

Provisions

Provisions are recognised for current obligations arising as consequences of past events where it is probable that a transfer of economic benefits will be necessary to settle the obligation and it can be reliably estimated. All provisions, except for those arising under pension liabilities, are undiscounted where the effect of discounting would be immaterial.

Share capital

Ordinary share capital comprises ordinary shares. Other capital reserves are described in note 23. Other instruments are classified as liabilities if there is an obligation to transfer economic benefits and if not they are included in shareholder's funds. The finance cost recognised in the income statement in respect of capital instruments other than equity shares is allocated to periods over the term of the instrument at a constant rate on the carrying amount.

The share premium comprises the difference between the issue proceeds of shares and their nominal value.

Revenue recognition

Revenue is generated from clearing and other post trade services, including investment income earned on collateral. Revenue is shown net of discounts, sales taxes, pass-through costs and certain revenue share arrangements.

Clearing fee income and rebates, together with other fee income are recognised when the service is rendered on a per transaction basis, or in cases where there is a fixed annual fee, monthly in arrears, in accordance with the Company's fee scales net of all applicable sales taxes.

Other post trade services include revenue from client connectivity services which is recognised as revenue on a straight-line basis over the service period as this reflects the continuous transfer of services.

Customer contracts across the Company that contain a single performance obligation at a fixed price do not require variable consideration to be constrained or allocated to multiple performance obligations. However the Company also provides services to customers under a tiered and tariff pricing structure that generates a degree of variability in the revenue streams from the contract. Where the future revenue from a contract varies due to factors that are outside of the Company's control, the Company limits the total transaction price at contract inception and recognises the minimum expected revenue guaranteed by the terms of the contract. Any variable element is subsequently recognised in the period in which the variable factor occurs.

Fee income accrued, but not yet invoiced at the balance sheet date is shown as fees receivable within trade and other receivables.

Other income relates to recharges of services to other group companies.

Net treasury income is the total of income earned on the cash and other financial assets held that have been generated from clearing member activity, less interest paid on clearing members' margin and other monies lodged with the Company. Interest expense or income is recorded using the effective interest rate method, which is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to the net carrying amount of the financial instrument.

In conditions where negative interest rates apply, the Company recognises interest paid on cash and other assets as an expense and interest received on clearing members' margin as income.

Revenue sharing arrangements - amounts deducted from revenue

Amounts deducted from revenue include revenue share arrangements whereby, as part of an operating agreement, amounts are due back to the other party to the operating agreement.

Cost of sales

Items of expense that are directly attributable to creating a product or provide a service that directly generates revenue or has the ability to generate revenue are classified as cost of sales.

Revenue sharing arrangements - cost of sales

Revenue share costs relate to revenue share arrangements with clearing members where the revenue share is not limited to the amount of revenues receivable from the specific clearing members. As such these have been classified within cost of sales, as they arise, rather than as a deduction from revenue.

Where a liability has been created following the recognition of assets used to generate a revenue share, it will be recognised in the income statement on a systematic basis over the useful life of those assets and offset against the related revenue share costs.

Employee benefits

The Company operates defined benefit and defined contribution pension schemes for its employees.

The cost of providing benefits under the defined benefit plans is determined using the projected unit method. Under this method each participant's benefits under the schemes are estimated based on the total pension to which each participant is expected to become entitled at retirement. The liability is the total present value of the individuals' attributed benefits for the valuation purposes at the measurement date and is based on actuarial advice. Past service costs are recognised in the income statement on a straight line basis over the vesting period or immediately if the benefits have vested. When a settlement or a curtailment occurs, the change in the present value of the scheme liabilities and the fair value of the plan assets reflects the gain or loss which is recognised in the income statement.

The net interest amount charged to the income statement is calculated using actuarial assumptions fixed at the start of the annual report period and the defined benefit liability and asset value at the start of the annual reporting period adjusted for the actual contributions and benefit payments made during the period.

Actuarial gains and losses are recognised in full in the statement of comprehensive income in the period in which they occur. The defined benefit pension liability in the statement of financial position comprises the total for each plan of the present value of the defined benefit obligation (using a discount rate based on high quality corporate bonds that have been rated at AA or equivalent status), less the fair value of plan assets out of which the obligations are to be settled directly. Fair value is based on market price information, and in the case of quoted securities is the published bid market price.

Where the currency of the benefits will be recognised in a different currency from the functional currency of the employing company, any exchange differences arising on the asset or liability will be recognised in the statement of comprehensive income.

The contribution payable to a defined contribution plan is in proportion to the services rendered by the employees and is recorded as an expense in the income statement within employee benefits as incurred.

Share-based compensation

The Company operates share-based compensation plans for employees, settled in shares of the ultimate parent company, London Stock Exchange Group plc. The charge to the income statement is determined by the fair value of the options granted or shares awarded at the date of grant as an indirect measure of the value of employee services received by the Company and recognised over the relevant vesting period.

The share-based compensation plans are accounted for as equity settled. The Company does record a cost for these transactions, representative of the fact that the Company has received a capital contribution from LSEG which has been spent on share-based compensation, with the corresponding credit recorded in equity. A debit will then also be recorded in equity and an intercompany payable recorded reflecting the Company's investment.

Leases

The Company is a lessee of assets.

Company as lessee
Right-of-use assets are disclosed within property, plant and equipment (note 11).

The Company has applied discount rates specific to the country and entity for all leases of property and other assets. The maturity of the Company's lease commitments are disclosed within the risk management note (note 2). Lease liabilities are included within trade and other payables (note 15).

The weighted average incremental borrowing rate used by the Company for the calculation of the lease liabilities recognised on adoption was 0.95%.

The maturity of the Company's lease payments is shown within the financial risk note (note 2) in the liquidity risk section.

Variable lease payments are linked to a publicly available index and adjustments to the value of the assets are made accordingly.

Fair value measurement

The Company measures financial instruments such as derivatives at fair value at each balance sheet date.

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 in an arm's length transaction at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability or in the absence of a principal market, in the most advantageous market for the asset or liability. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data is available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs. All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described in note 20.

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period. For the purpose of fair value disclosures, the Company has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of fair value hierarchy as explained above.

Non-underlying items

Items of income and expense that are material by size and/or nature or items that are not considered to be incurred in the normal course of business are classified as non-underlying items on the face of the income statement within their relevant category. The separate reporting of these items together with any impairment of purchased intangible assets helps give an indication of the sustainable performance of the Company.

Government grants

Grants or similar assistance receivable are recognised in the income statement over the period in which the expenses are incurred when there is an expectation that the amounts will be received.

2. Risk management

Introduction

The Company's activities expose it to a number of financial risks, principally market risk (financial market volatility, interest rate risk, foreign exchange risk), sovereign risk, credit risk, and liquidity risk. In addition to the financial risks, the Company is also exposed to other risks such as operational, legal, compliance and reputational risk. The Company manages these risks through various control mechanisms and its approach to risk management is to be prudent yet responsive to changes in the risk environment.

Overall responsibility for risk management rests with the Company Board. Day to day responsibility is delegated to the Company Chief Risk Officer, who ensures effective delegation to the executives in the operating subsidiaries on the basis of risk policies which are calibrated to the Board's risk appetite and are discussed and agreed by the Company's risk committees and boards. The application of these policies is undertaken by the business functions as the first line of defence and by the Company risk management team forming the second line of independent assurance, who control and manage the exposures arising from the various clearing activities. Risk policies are harmonised across the Company. The continued appropriateness of risk policies and key risk data are regularly reviewed by the Company and CCP Boards and the board Risk sub-Committees, and audits of processes within risk management are undertaken periodically.

Enterprise Risk Management Framework

Each of the risks identified in this section are governed by the Risk Governance Framework, issued and refreshed at least annually by the Boards. The Framework describes the overall risk appetite of the Company and its CCPs, defines each risk type and specifies ownership and the tolerance levels. The Framework also requires that all risks are measured, monitored and reported periodically via an Enterprise Risk Management Framework coordinated by the CCP Chief Risk Officers.

For each of the principal risk types, a description and outline of the risk management approach is provided below.

Financial market volatility (latent market risk)

Risk description

Volatility within the financial markets in which the Company operates can adversely affect its earnings and its ability to meet its business objectives. The Company runs a balanced position in all cleared contracts and run no significant market risk unless a clearing member defaults. In such an event the Company faces market risk which is correlated to clearing member positions and market conditions.

Risk management approach

The market and credit risk management policies of the Company are reviewed and approved by its Risk Committees and Boards at least annually. A range of measurement methodologies, including both empirical and analytical margin models, stress testing and scenario analysis, are used daily to quantify and assess the levels of credit and market risk to which the Company is exposed, and hence the amount of resources that should be held to cover such risks, under both normal and extreme, but plausible, market conditions.

Initial margins for all clearing services are calibrated and back-tested to a 99.7% confidence level. This has the effect of reducing the probability of loss from the default of a clearing member with the worst acceptable credit to the level of an AAA rated credit over a 12 month time horizon.

Potential market risk is reduced by collecting variation margin on marked to market positions and by establishing initial margin requirements which are the Company's estimate of likely future market risk under normal and stressed market conditions, calibrated to a 99.7% confidence level for all products. Variation margin add-ons are calculated for clearing member specific concentration, liquidity, wrong way risk and credit risk. Both variation and initial margin are collected daily and replenished intraday subject to credit related thresholds.

The Company accept both cash in major currencies and high quality liquid non-cash collateral to cover margin requirements.

The list of acceptable non-cash collateral issuers is restricted and haircuts are set for each security type taking into account market, credit, foreign exchange, country and liquidity risks and are calibrated to a 99.7% confidence level. All non-cash collateral is revalued daily.

Total collateral held	**2019** **€'bn**	2018 €'bn
Margin received in cash	**68.6**	60.3
Margin received in non-cash securities	**113.0**	88.9
Total margin liability	**181.6**	149.2

The maximum margin liability during the year was €211.7 billion (2018: €156.1 billion).

New applicants for clearing must meet strict credit, financial and operational criteria, which are regularly reviewed as part of the Company's risk policies. All clearing members are assigned an Internal Credit Score (ICS) and the ICS methodology is subject to independent validation at least annually.

The Company also require all clearing members to contribute to pre-funded default funds to be used should the margins of a defaulted clearing member not fully cover close out costs. Supplementary financial resources include a proportion of the CCPs' own capital and further clearing member contributions to ensure the continuity of ongoing operations. The operating subsidiary pre-funded default funds are segregated by clearing service and sized to be sufficient at all times to cover the default of the two clearing member companies giving rise to the greatest losses above margin under a wide range of plausible scenarios of extreme market conditions.

As at 31 December 2019 the total of clearing member contributions to the default funds amounted to €10.2 billion (2018: €8.9 billion) (note 18). The maximum amount during the year was €10.3 billion (2018: €10.0 billion). Clearing members are committed to contribute further amounts in the event of a clearing member default equivalent to approximately twice this amount.

The models which calculate margins, collateral haircuts, counterparty credit scores, stress losses and default fund contributions are independently validated at least annually and meet all applicable regulatory requirements.

Sovereign risk

Risk description

Distress amongst sovereigns through market concerns over the levels of government debt and the ability of certain governments to service their debts over time could have adverse effects on the value and liquidity of the Company's cleared products, margin collateral and investments, and on the clearing membership, their clients, and the financial industry as a whole.

Risk management approach

Specific risk frameworks manage sovereign risk for both fixed income clearing and margin collateral, and all clearing members' portfolios are monitored regularly against a suite of sovereign stress scenarios which model escalations in sovereign risk. In addition, investment limits and both counterparty and clearing membership monitoring frameworks are sensitive to changes in economic and financial market indicators, ensuring that the Company is able to measure, monitor and mitigate exposures to sovereign risk and respond quickly to actual or anticipated changes.

The Risk Committees and Boards continually monitor such risks and the sovereign risk framework continues to protect the Company against potentially severe market volatility in the sovereign debt markets.

The Company has investments in the following Sovereigns (or equivalent issuer) as at 31 December 2019:

	2019		2018	
	Investment value	**Proportion of portfolio**	Investment value	Proportion of portfolio
Sovereign (or equivalent)	**€ billion**	**%**	€ billion	%
USA	**14.3**	**38**	10.1	34
Netherlands	**9.5**	**25**	7.3	25
UK	**6.8**	**18**	4.1	14
EU	**2.6**	**7**	2.9	10
France	**1.6**	**5**	1.2	4
Germany	**1.1**	**3**	1.3	5
Switzerland	**0.9**	**2**	1.5	5
Belgium	**-**	**-**	0.5	2
Other	**0.6**	**2**	0.4	1
Total	**37.4**	**100%**	29.3	100%

The above total includes all other financial assets of €22,129.1 million (2018: €16,288.9 million) along with central bank cash deposits.

Credit risk

Risk description
Credit risk is the risk that a counterparty of the Company will be unable or unwilling to meet a financial commitment to the Company. Credit risk exposure arises as a direct result of the reinvestment of the cash which the Company holds, primarily as part of its CCP activities in collecting margin and default fund contributions from its clearing members.

Risk management approach

The Company's investment portfolio is invested in accordance with clear risk policies which require secure investment of a significant portion of the portfolio either via reverse repurchase agreements with credit and financial institutions, receiving high quality government, government guaranteed or supranational securities as collateral, by investing directly in such securities or by the placement of cash with central banks.

The Investment Risk Policy requires that securities received as collateral are subject to a haircut on their market value, that the average maturity of the portfolio will not exceed two years, and that while cash may be deposited on an unsecured basis, this can only be short term with high quality banking institutions and limited to a 12 month average of 5% and a maximum of 10% of all credit institution investment.

The amount of LCH Limited's capital at risk to the default of a banking institution or the issuer of a debt instrument is limited to €15.0 million by the non-default loss provision to be applied in respect of losses that arise other than from a clearing member's default and which threaten the CCP's solvency. These rules were introduced in response to the revision of UK CCP Recognition Requirements which became effective on 1 May 2014. Treasury default losses in excess of €15.0 million would be allocated among clearing members.

The investment portfolio at 31 December 2019 was €79.5 billion (2018: €69.7 billion), of which 99.9% (2018: 99.9%) was invested securely. The maximum portfolio size during the year was €95.2 billion (2018: €76.0 billion). Note 20 contains further analysis of the investment portfolio including by type and fair value hierarchy.

All counterparties, including clearing members, interoperating CCPs, investment counterparties, custodians and settlement and payment institutions, sovereigns and central banks, are assessed according to an internal credit scoring framework. This framework incorporates elements of the counterparty's financial profile, including funding, liquidity, capital and profitability, and a detailed operational capability assessment. The scoring framework is independently validated at least annually and is continuously monitored for performance. Minimum credit scores are set for joining any clearing service and also for institutions to be eligible for investment or as interoperating CCPs and payment, settlement and custodial intermediaries. These minimum credit scores are set within the risk policies which are reviewed and approved by the CCP Boards annually. Risk policy also requires that increased margins be applied to clearing members when their credit score deteriorates below the entry level. Other actions may include reduced credit tolerances and forced reduction of exposures. Investment counterparties and intermediaries whose credit score falls below the minimum set by policy will no longer be eligible.

The maximum credit risk exposure relating to financial assets is represented by the carrying value as at the statement of financial position date.

Analysis by credit rating

The table below shows the Company's clearing member balances and investment portfolio by reference to the credit rating of the counterparties. The treasury portfolio includes cash at bank and other financial assets.

	2019	2018
	€'m	€'m
Fair value of transactions with clearing members (ratings assigned with reference to major agencies)		
Clearing members rated AAA/AA+/AA/AA-	**53,658.9**	44,259.2
A+/A/A-	**80,089.7**	143,024.5
BBB+/BBB/BBB-	**78,002.7**	136,897.7
Other, < BBB-, unrated	**452.4**	1,788.2
Total outstanding transactions with clearing members	**212,203.7**	325,969.6
Company investment and cash portfolio (ratings assigned with reference to major agencies)		
AAA/AA+/AA/AA- Government backed	**37,397.1**	29,350.9
AA/AA+/AAA Secured	**2,078.8**	1,760.4
A/A-/A+/A/A-/BBB+ Secured	**39,971.4**	36,694.0
A/A+/AA- Unsecured	**19.8**	1,788.4
Total investment and cash portfolio	**79,467.1**	69,593.7

The total credit risk of the Company is represented by the total financial assets of the Company as disclosed in note 20.

Concentration risk

Risk description

Concentration risk may arise through having large connected individual exposures and significant exposures to groups of counterparties whose likelihood of default is driven by common underlying factors.

Risk management approach

Direct concentration risk arises in several areas of the Companys' activities, and in order to avoid excessive concentrations of risk each maintains a diversified portfolio of high quality liquid investments and uses a diversified range of custodians, payment and settlement banks and agents.

Indirect concentration risks, conditional upon a clearing member default, are managed under risk policy through various means, including margin add-ons for large concentrated positions, restrictions on certain non-cash collateral issuers and limits on aggregated exposures to member Company's across clearing and investment activities.

The largest concentration of investment exposures as at 31 December 2019 was 17.9% of the total investment to the US Government (2018: 14% to the US Government).

Procyclicality

Risk description

Systemically important CCPs recognise that they have an important responsibility towards their clearing members and other market participants to ensure that their actions do not unnecessarily amplify existing market stresses. Indeed, risk mitigating actions that are excessively procyclical are undesirable to the Company from a narrow risk management perspective as well as from a macro-economic and regulatory perspective.

Risk management approach

The Company acknowledge that while some level of procyclicality may be unavoidable, as they must protect themselves by ensuring adequate margins are held against risk, standards have been introduced for ensuring that procyclicality concerns are appropriately addressed in the risk framework and the margin, haircut and credit scoring models. These standards require all models which are used for setting the levels of resources called from participants, and which therefore may be sources of procyclical outputs, to be tested using an extended period of historical inputs.

Interest rate risk

Risk description

The Company is exposed to interest rate risk arising from the cash and investment balances it maintains, and the margin and default fund balances it holds from clearing members and the loans and borrowings it has issued.

Risk management approach

Interest bearing assets are generally invested for a longer term than the interest bearing liabilities, whose interest rate is generally reset daily. This makes treasury income vulnerable to volatility in overnight rates and shifts in spreads between overnight and term rates. Interest rate exposures are managed within defined risk appetite parameters against which sensitivities are monitored daily. The risk to the Company's capital is managed within interest rate risk limits expressed as a percentage of each subsidiary's capital and calculated under stressed scenarios.

Interest rate sensitivity analysis

The Company aims to minimise its exposure to interest rate fluctuations. Any exposure is predominantly due to the mismatch between the Company's interest bearing assets and interest bearing member liabilities. Since the return paid on member liabilities is generally reset to prevailing market interest rates on an overnight basis the Company is exposed for the time it takes to reset the interest rates on its investments and the shifts in spreads between overnight and term rates. The maximum fixed exposure on any asset in the treasury portfolio is one year and the portfolio is subject to an overall interest rate risk limit.

The following table shows the estimated impact of the exposure described in the paragraph above on the consolidated profit after tax and on retained earnings within shareholders' equity:

	2019			2018		
	+25bp €'m	**+50bp €'m**	**+100bp €'m**	+25bp €'m	+50bp €'m	+100bp €'m
Net exposure of cash and member margin balances	**(11.4)**	**(22.7)**	**(45.5)**	(6.2)	(12.5)	(25.0)
Tax effect of above	**2.2**	**4.3**	**8.6**	1.2	2.4	4.8
Decrease in profit after tax	**(9.2)**	**(18.4)**	**(36.9)**	(5.0)	(10.1)	(20.2)

	-25bp €'m	**-50bp €'m**	**-100bp €'m**	-25bp €'m	-50bp €'m	-100bp €'m
Net exposure of cash and member margin balances	**11.4**	**22.7**	**45.5**	6.2	12.5	25.0
Tax effect of above	**(2.2)**	**(4.3)**	**(8.6)**	(1.2)	(2.4)	(4.8)
Increase in profit after tax	**9.2**	**18.4**	**36.9**	5.0	10.1	20.2

Liquidity risk

Risk description

Liquidity risk is the risk that the Company is unable to meet its payment obligations when they fall due.

Liquidity risk exists as a result of day to day operational flows such as repayments of cash collateral to clearing members, provision of liquidity to facilitate settlement and cash flows resulting from investment activity. In the case of a clearing member default, the Company must transfer or liquidate the defaulter's portfolio. This default management process may give rise to additional liquidity requirements to meet losses arising from portfolio hedging or close out as well as fulfilling the defaulter's settlement and margin obligations until the portfolio is fully closed out or transferred.

Risk management approach

Liquidity risk is managed by ensuring that the Company has sufficient cash to meet their payment obligations supported by facilities to meet short term imbalances between available cash and payment obligations. The Company maintains liquidity buffers against expected daily operational liquidity needs, based on the maximum relevant liquidity outflow observed from an extensive data history, and against the modelled default of the two clearing member Company's with the largest liquidity requirements when additional liquidity will be required so that the Companies can continue to meet their obligations to clearing members and other counterparties.

The Company's liquidity management is subject to strict minimum liquidity targets set by senior executives within its Risk and Collateral & Liquidity Management (CaLM) department. These targets are reviewed regularly and reported to the Risk Committees and Board. On a day to day basis CaLM is tasked with ensuring that the Company can meet its financing needs at all times, in particular to ensure the business continues to operate smoothly even in the event of the default of one or more clearing members.

The ability to access liquidity under extreme market conditions is modelled daily. Liquid resources include available cash balances and secured financing facilities. The Company uses central bank money where such facilities are available to it as a CCP and are practicable as determined through internal review.

The table below analyses the Company's financial liabilities into relevant maturity groupings based on the remaining period from the balance sheet date to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows.

As at 31 December 2019	**Less than three months €'m**	**Three months to one year €'m**	**One to five years €'m**	**Total €'m**
Transactions with clearing members	**(195,485.1)**	**(16,718.6)**	**-**	**(212,203.7)**
Initial margin and other clearing member balances	**(68,594.3)**	**-**	**-**	**(68,594.3)**
Default funds	**-**	**(10,197.1)**	**-**	**(10,197.1)**
Trade and other payables	**(232.0)**	**(104.0)**	**(16.0)**	**(352.0)**
Interest bearing loans and borrowings	**-**	**-**	**-**	**-**

As at 31 December 2018	Less than three months €'m	Three months to one year €'m	One to five years €'m	Total €'m
Transactions with clearing members	(317,865.6)	(8,104.0)	-	(325,969.6)
Initial margin and other clearing member balances	(60,314.7)	-	-	(60,314.7)
Default funds	-	(8,929.3)	-	(8,929.3)
Trade and other payables	(119.0)	(135.0)	(2.6)	(256.6)
Interest bearing loans and borrowings	(5.8)	-	-	(5.8)

Interest due on the financial liabilities is based upon rates set on a daily basis.

Foreign exchange risk

Risk description

Foreign exchange risk arises because the Company can incur expenses in their local currency while earning revenues and treasury income in several major currencies. The Company translates net assets and liabilities arising in other currencies (principally UK sterling and US dollars) to functional currency.

Risk management approach

The Company converts surplus foreign currency balances to euros where practicable on a monthly basis. This partially mitigates the impact of exchange rate fluctuations on the Company's financial performance. Any exchange differences on the translation of net assets and liabilities that remain are recorded in the income statement.

The Company has no designated hedges, but seeks to manage its risk by matching currency liabilities against monetary assets. The Company's income statement and regulatory capital volatility as a result of exchange rate movements are monitored.

Foreign exchange sensitivity

The Company reviews sensitivities to movements in exchange rates which are appropriate to market conditions. As at 31 December 2019, the Company has considered movements in UK sterling and US dollars during 2019 and has concluded that a 10% movement in rates is a reasonable level to measure the risk to the Company. At 31 December 2019, if the euro had weakened or strengthened by 10% against UK sterling and/or US dollar with all other variables held constant, the impact on the Company's post-tax profit for the year ended 31 December 2019 and on equity at 31 December 2019 is set out, with comparatives, in the table below. Movements in other currencies and entities are not significant.

The table below also includes the impact on equity if the euro had moved 10% against the US dollar.

	2019		2018	
	Post-tax profit €'m	**Equity €'m**	Post-tax profit €'m	Equity €'m
UK sterling – euro strengthen	**5.0**	**(1.9)**	1.4	(3.8)
UK sterling – euro weaken	**(5.0)**	**1.9**	(1.4)	3.8
US dollar – euro strengthen	**(1.3)**	**(1.3)**	(1.3)	(1.3)
US dollar – euro weaken	**1.3**	**1.3**	1.3	1.3

If the average euro exchange rate for the year ended 31 December 2019 had moved 10p against UK sterling and 10 cents against US dollar, this would have changed the Company's operating profit for the year by up to €30.7 million (2018: €24.3 million).

Settlement bank risk

Risk description

The Company is exposed to the risk that a settlement bank could fail, creating credit losses and liquidity pressures for the Company.

Risk management approach

The Company uses a combination of central bank, payment agent and commercial settlement bank models. The policy requires that only minimal unsecured balances at commercial settlement banks are permitted to remain overnight, with the majority placed with central banks. Any such unsecured balances reduce commercial bank deposit limits. Intraday credit exposures to commercial concentration banks are also monitored and closely controlled.

For monies due from clearing members, if the payment agent or commercial settlement bank is not able to transfer funds to the Company, the clearing members remain liable for the fulfilment of their payment obligations to the Company.

Risk policies specify minimum credit scores for all payment and settlement intermediaries and that these are monitored continually, with a full counterparty credit review conducted annually and a full due diligence exercise carried out at least every two years. The counterparty credit scores are derived from the framework described under credit risk above.

Custody risk

Risk description

Custody risk is the risk of loss on securities in safekeeping as a result of the custodian's insolvency, negligence, misuse of assets, poor administration or inadequate record keeping.

Risk management approach

Although the risk of insolvency of central securities depositories or custodian banks used by the Company is low, the Company mitigates this risk through a due diligence framework which ensures that appropriate legal arrangements and operational processes are in place. In addition, policy sets minimum eligibility requirements, and requires regular credit assessment and back-up contingency arrangements to be in place.

Capital risk

Risk description

Capital risk is the risk that the Company may not maintain sufficient capital to meet its obligations. This includes the risks that regulators may increase capital requirements or that own capital levels may become eroded. Capital is specifically allocated, and therefore at risk ahead of clearing member resources, in the event of either a clearing member or investment counterparty default. In addition, capital may be at risk to operational losses in excess of insurance protection.

Risk management approach

The Company's approach to capital management and a review of the current regulatory requirements are detailed in note 25. In addition:

- the default waterfalls for each clearing service feature the Company's own capital, to be utilised after the defaulted clearing member's collateral and default fund contributions and before the balance of the mutualised default funds and further, non-prefunded, resources available from the clearing members. In aggregate this capital at risk is equivalent to 25% of regulatory capital requirement for the Company
- the non-default loss provision for the Company (as detailed on page 35) limits the amount of capital at risk to the investment default/loss of a banking institution or the issuer of a debt instrument to €15 million for this entity
- the Company can manage its capital structure by varying returns to its shareholder, issuing new shares or increasing or reducing borrowings

Pension risk

Pension risk arises from the potential deficit in the Company's defined benefit pension plan due to a number of factors such as mortality rates or changes in inflation assumptions. The scheme is exposed to inflation, interest rate risks and changes in the life expectancy for members. As the schemes' assets include a significant investment in equity shares, the Company is exposed to equity market risk.

The pension scheme is UK-based and is governed under the relevant laws and managed by the Trustees who are required to undertake a formal funding valuation every three years and, where assets are deemed to be insufficient, to agree a schedule of contributions to be paid by the Company to make good any shortfall over a period of time. Details of the pension scheme and assumptions used in valuing their assets and liabilities are included in note 19.

Operational risk

Risk description

Operational risk is the risk of loss arising through failures associated with personnel, processes or systems or from external events. It is inherent in every business organisation and covers a wide spectrum of issues. First line operational risk is managed by the business, for example through procedures, documentation of processes, independent authorisation and reconciliation of transactions.

Risk management approach

The Company has adopted a framework, supported by tailored enterprise-wide software, systematically to identify, assess, monitor and manage operational risks. This is achieved through self assessment of risks and controls using a comprehensive risk and control library, the collection and analysis of loss data and the development of key risk indicators as appropriate, enabling the embedding of operational risk awareness within the corporate culture. An independent department performs second line operational risk management, validating the self-assessments of risks and controls and reporting on operational risk to senior management and the Board.

Business operations are subject to a programme of internal audit reviews, which are independent of line management, and the results are reported directly to the Company's senior management and Audit Committee. Following each review, management will put in place an action plan to address any issues identified. Internal Audit evaluates the adequacy and effectiveness of the Company's systems of internal control, as well as the level of compliance with policies, and reports, in addition to management's own combined assurance reporting, to the Audit Committee and senior management. Any significant weaknesses are reported to the Board.

The Company maintains comprehensive contingency plans to support its operations and ensure business continuity. These facilities are regularly tested.

Other risks

Legal, compliance and regulatory risk

These risk categories include the risk arising from the potential that unenforceable contracts, lawsuits, or adverse judgements can disrupt or otherwise negatively affect the operations or condition of the organisation, and the risk of loss of license or other penalties imposed due to non-compliance with regulations governing clearing house activities in each jurisdiction in which the Company operates.

It is the responsibility of the Heads of the Legal, Regulatory and Compliance functions to provide assurance to the Board that these risks are measured and monitored, while the responsibility for any mitigation actions resides with the relevant business and functional heads.

In the normal course of business, the Company receives legal claims in respect of commercial, employment and other matters. Where a claim is more likely than not to result in an economic outflow of benefits from the Company (and is measureable), a provision is made representing the expected cost of settling such claims.

Reputational risk

The maintenance of the Company's strong reputation is key to its continued profitability and is the responsibility of the Board, management and staff. In particular the efficiency, reliability and effectiveness of the day to day operations of the Company are paramount to its reputation.

Business and strategic risks

Business risk is the risk of loss or of profit decrease where declining volumes lead to lower revenues which cannot be offset by adjusting variable costs within a reasonable time period, while strategic risk is the risk of reduction in earnings or capital arising from adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes. Business heads are responsible for managing these risks and liaising closely with the Board when issues arise.

Brexit

The UK left the EU on 31 January 2020, with transition period agreed until 31 December 2020. LCH remains an (EMIR Article 14) authorised EU CCP until the end of the transition period.

LCH Ltd is seeking a smooth transition from temporary to permanent recognition under the revised supervisory framework for EU and third country CCPs (EMIR Article 25 as revised by 'EMIR 2.2').

Project risk and business continuity, information security and cyber risks

These risk categories include the risk to earnings and capital arising from project execution deficiencies, the risk of loss arising from the disruption of critical business or IT processes due to adverse circumstances or events, and the risk that valuable and sensitive LCH data is compromised, lost or misused. The Heads of dedicated business functions and of each business are responsible for managing these risks.

Model risk

This is the risk that, for example, a margin model may not capture the essence of the stress loss/events being modelled, or that there are mistakes in the underlying calculation, which may result in systemic under-margining for the products in question. Model risk management is the responsibility of the heads of business lines which place reliance on the models, and is effected through appropriate testing and maintenance of the models and in particular through the strict governance required for model change, including independent expert validation and senior executive approval. Board approval is required for material changes to important models.

Default management risk

This is the risk arising from not having a well defined and rehearsed process in place prior to a default event, leading to inefficiencies in the handling of a default such that a material deterioration in the market value of assets held may result in the erosion of CCP capital and the default funds.

For each service, it is the responsibility of the business head to ensure that a functioning Default Management Group is in place in accordance with the group default management policy and guidelines (owned by the CRO). Fire drill tests are held regularly to assess the CCP default management process and identify any areas for improvement.

Emerging risks

The Company has also included a category of emerging risks which are new and difficult to quantify due to their remote or evolving nature. In most cases, the mitigation for such risks is to establish appropriate contingency plans and monitor the development of the risk until it can be quantified and removed or included as a principal risk.

Two types of Emerging Risk are Climate-related risks and Emerging technology.

Climate-related Risks
International organisations, governments and regulators are focused on integrating climate risks and opportunities into investment decision making, to enable transition to a low carbon economy. This is an area of emerging and wide-ranging policy making, impacting financial market participants and corporates.

The Company supports consistent global standards and encourage continued alignment between the EU and UK on sustainable finance. The Company has developed climate-related risks scenario over both the medium and longer term, and how these may impact credit, operational, market and liquidity risks.

In line with increased disclosure requirements for corporations and financial markets participants, the Company has taken proactive steps to develop its methodology to define and model how climate change impacts its businesses. The aim is to reinforce the Company's resilience to acute physical risks today and chronic physical risks in the future.

Emerging Technology
The increased integrated artificial intelligence (AI) in digital transformation strategies brings with it associated risks such as inherent bias in the historical data and behaviour patterns which feed AI algorithms. This may give rise to automated decisions which are not aligned with current societal expectations or organisational values. The Company continues to maintain systems and controls to mitigate the risk resulting from emerging technology. Risk arising from the Company's use of AI is identified, assessed, managed and reported. We align with industry best practices and guidance when considering the trustworthiness and bias in AI systems and AI aided decision making. The Company ensures the use of AI is fair, explainable and transparent, secure and safe.

3. Exchange Rates

The most significant exchange rates to the euro for the Company are as follows:

	2019 Closing rate	**2019 Average rate**	2018 Closing rate	2018 Average rate
Euro (€) to US dollar ($)	**1.12**	**1.12**	1.15	1.18
Euro (€) to pound sterling (£)	**0.85**	**0.88**	0.90	0.88

4. Revenue

	2019 €'m	2018 €'m
SwapClear clearing fees	**291.2**	255.7
Other OTC clearing fees	**24.1**	16.8
Non-OTC clearing fees	**36.5**	52.9
Clearing fees	**351.8**	325.4
Other fee income	**115.2**	112.1
Less pass-through costs recharged	**(11.6)**	(10.7)
Other fee income	**103.6**	101.4
Revenue	**455.4**	426.8

The Company's total income from contracts with customers disaggregated by timing of revenue recognition is shown below:

	2019 €'m	2018 €'m
Services satisfied at a point in time	**451.3**	417.9
Services satisfied over time	**12.3**	11.4
Total revenue from contracts with customers	**463.6**	429.3

Although total income includes net treasury income, this is excluded from the disaggregation table as it is outside the scope of IFRS 15 because it is not earned through a contract with a customer.

5. Operating expenses

	2019 €'m	2018 €'m
Staff costs (note 19)	**110.8**	109.5
Foreign exchange losses/(gains)	**(1.4)**	(0.9)
Research expenditure	**11.0**	10.4
Other operating expenses	**75.0**	67.3
Operating expenses before depreciation and amortisation	**195.4**	186.3
Depreciation, amortisation and impairment		
Lease term modification	**0.8**	-
Depreciation of property, plant and equipment	**8.7**	5.3
Impairment of intangible assets	**4.7**	1.4
Amortisation of intangible fixed assets	**44.2**	47.0
Total depreciation, amortisation and impairment	**58.4**	53.7
Auditor's remuneration		
Audit fees	**0.4**	0.3

6. Non-underlying items

	2019 €'m	2018 €'m
Restructuring programme	**(3.7)**	-
Tax effect of non-underlying items	**0.7**	-
Total non-underlying items	**(3.0)**	**-**

During 2019, the board approved a restructuring programme to improve the efficiency of the company.

7. Finance income and expense

	2019 €'m	2018 €'m
Interest received on cash and cash equivalents	**0.6**	0.5
Interest received on intercompany loan balances	**0.2**	0.2
Net finance income on pension assets	**1.6**	1.8
Finance Income	**2.4**	2.5
Interest paid on cash and cash equivalents	**(2.5)**	(2.4)
Lease interest expense	**(0.1)**	-
Interest paid on intercompany loan balances	**-**	(0.2)
Finance expense	**(2.6)**	(2.6)
Net finance expense	**(0.2)**	(0.1)

The Company attracts negative interest rates on some of its cash deposits and intercompany loans.

8. Taxation

The major components of taxation expense are:

	2019 €'m	2018 €'m
Current tax		
United Kingdom current tax charge	**(49.3)**	(38.2)
Adjustments in respect of current tax in previous years	**0.8**	(0.6)
Overseas current tax charge	**(0.6)**	0.1
Adjustments in respect of current overseas tax in previous years	**(0.7)**	1.0
Total current taxation	**(49.8)**	(37.7)
Deferred tax		
Deferred tax relating to the origination and reversal of temporary differences	**(0.8)**	(0.4)
Adjustments arising from change in tax rates	**(0.8)**	(0.8)
Adjustment in respect of deferred tax in previous years	**(0.5)**	1.6
Deferred tax	**(2.1)**	0.4
Tax expense reported in the income statement	**(51.9)**	(37.3)

Statement of comprehensive income	2019 €'m	2018 €'m
Deferred tax relating to remeasurement of UK defined benefit pension	**(3.5)**	5.4
Deferred tax relating to revaluation of financial assets through OCI	**(0.1)**	1.8
Tax expense reported in the statement of comprehensive income	**(3.6)**	7.2
Statement of changes in equity		
Tax allowance on share awards in excess of expense recognised	**2.4**	0.6
Tax credit reported directly in equity	**2.4**	0.6

Reconciliation of tax expense

The income statement tax charge for the year differs from the standard rate of corporation tax in the UK as explained below:

	2019	2018
	€'m	€'m
Accounting Profit before taxation	**263.9**	204.1
Tax at UK statutory corporation tax rate of 19.0% (2018: 19.0%)	**(50.1)**	(38.8)
Effect of:		
Expenses not deductible	**(0.1)**	(1.6)
Adjustments in respect of prior years	**(0.5)**	2.0
Adjustments in respect of changes in tax rates	**(0.8)**	(0.8)
Higher rate of tax on overseas earnings	**(0.1)**	0.2
Deferred tax previously not recognised	**(0.4)**	1.6
Foreign exchange adjustment	**0.1**	0.1
Total tax charge	**(51.9)**	(37.3)
Effective corporate tax rate	**19.7%**	18.3%

The UK Finance Bill 2016 was enacted in September 2016 reducing the standard rate of corporation tax further to 17% effective from 1 April 2020. Accordingly, the UK deferred tax balances at December 2017 have been stated at 19% or 17% dependent on when the temporary differences are expected to reverse. The deferred tax balances in other countries are recognised at the substantively enacted rates at the balance sheet date.

The increase in the effective tax rate (ETR) for the Company from 18.3% in 2018 to 19.7% in 2019 is related to adjustments in respect of prior years and deferred tax assets being recognised in FY18 that were previously not recognised.

Exchange differences have arisen on the translation of the closing sterling balances which are due to HMRC.

Deferred tax

	Statement of financial position			Movement	
	2019	**Restated at 1 Jan 2019**	2018	**2019**	2018
	€'m	**€'m**	€'m	**€'m**	€'m
Post-employment benefits	**(24.1)**		(17.7)	**(6.4)**	3.8
Accelerated tax depreciation	**4.3**		3.9	**0.4**	1.0
Deferred compensation	**1.3**		0.4	**0.9**	(0.2)
Share-based payments	**4.1**		2.4	**1.7**	(0.3)
Revaluation of available for sale assets	**-**		0.1	**(0.1)**	1.8
Research and Development	**(0.3)**		-	**(0.3)**	-
IFRS 16	**0.5**	**0.5**	-	**0.5**	-
Tax losses	**0.4**		1.7	**(1.3)**	1.7
Deferred tax charge				**(4.6)**	7.8
Deferred tax liability	**(13.8)**	**0.5**	(9.2)		

	2019	2018
	€'m	€'m
Deferred tax (liability)/asset at 1 January	**(9.2)**	(17.0)
Restatement as a result of IFRS 16	**0.5**	-
Deferred tax (liability)/asset at 1 January restated	**(8.7)**	(17.0)
Deferred tax recognised in income statement	**(2.1)**	0.4
Deferred tax recognised in the statement of comprehensive income	**(3.6)**	7.2
Deferred tax recognised in equity	**1.6**	(0.1)
Change in group relief in the year	**(0.7)**	-
Foreign exchange movements	**(0.3)**	0.3
Deferred tax liability at 31 December	**(13.8)**	(9.2)

9. Intangible assets

Self-developed software and licences	**2019 €'m**	2018 €'m
Cost		
At 1 January	**382.7**	313.3
Additions	**66.9**	67.3
Asset Transfer	**0.3**	2.1
Disposals and write offs	**(4.7)**	-
At 31 December	**445.2**	382.7
Accumulated amortisation and impairment		
At 1 January	**199.5**	151.0
Amortisation charge for the year	**44.2**	47.0
Asset Transfer	**-**	0.1
Disposals and write offs	**(4.7)**	-
Impairment	**4.7**	1.4
At 31 December	**243.7**	199.5
Net book value at 31 December	**201.5**	183.2

The portion of capitalised self-developed software costs disclosed above that relates to software not currently brought into use amounted to €85.0 million (2018: €60.6 million). No amortisation has been charged during the year against these assets (2018: nil), but instead they are tested for impairment (note 10). There were no amounts impaired in the year (2018: nil).

10. Impairment testing of intangible assets

The Company carries out annual impairment testing on software not currently brought into use in December of each year, or more often if circumstances show that an impairment may be likely.

For intangible assets, impairment is assessed by reviewing the carrying value of the asset against its recoverable amount, which is determined by value in use calculations for the relevant cash generating unit using discounted cash flow projections.

Assumptions

The key assumptions used in the valuations relate to discounted cash flow projections prepared by management covering a five year period. The cash flow projections are based on the Company's budget for 2020 and the Company approved plan for the two financial years following the last financial year in the budget. Cash flows beyond this period are extrapolated using the estimated long-term growth rates and applying the pre-tax discount rates.

Management has based its value in use calculations for each CGU on key assumptions about short and medium term revenue and cost growth, long term economic growth rates (used to determine terminal values) and pre-tax discount rates, as follows:

i) The values assigned to short and medium term revenue and cost growth are based on the 2020 budget and the Company approved plan. The assumptions are derived from an assessment of current trends, anticipated market and regulatory developments, discussions with customers and suppliers and management's experience. These factors are considered in conjunction with the Company's long-term strategic objectives to determine appropriate short and medium growth assumptions
ii) Long-term growth rates of 3.4% (2018: 3.6%) represent management's internal forecasts based on external estimates of GDP and inflation
iii) The pre-tax discount rate of 10.4% (2018: 11.3%) is based on a number of factors including the risk-free rate, the Company's estimated market risk premium and a premium to reflect inherent risks

Impairment results

A discounted cash flow test for other intangible assets found that assets of €4.7 million were impaired (2018: €1.4 million) due to the uncertainty of the future cash flows that relate to this asset. No self-developed software not yet in use was found to be impaired (2018: nil).

11. Property, plant and equipment

As at 31 December 2019	**Property right of use assets €'m**	**Leasehold refurbishment €'m**	**Computer equipment €'m**	**Office equipment €'m**	**Total €'m**
Cost					
At 31 December 2018	**-**	**8.4**	**41.3**	**4.6**	**54.3**
Adjustment on adoption of new standard	**19.0**	**-**	**-**	**-**	**19.0**
At 1 January (restated)	**19.0**	**8.4**	**41.3**	**4.6**	**73.3**
Additions	**0.6**	**-**	**-**	**2.8**	**3.4**
Asset Transfer	**-**	**-**	**-**	**(0.3)**	**(0.3)**
Disposals	**(2.6)**	**(2.2)**	**(8.2)**	**-**	**(13.0)**
At 31 December	**17.0**	**6.2**	**33.1**	**7.1**	**63.4**
Accumulated depreciation					
At 1 January (restated)	**-**	**6.1**	**35.2**	**3.4**	**44.7**
Depreciation charge for the year	**2.8**	**1.5**	**4.4**	**-**	**8.7**
Lease term modification	**2.0**	**-**	**-**	**-**	**2.0**
Disposals	**(2.6)**	**(2.2)**	**(8.2)**	**-**	**(13.0)**
At 31 December	**2.2**	**5.4**	**31.4**	**3.4**	**42.4**
Net book value at 31 December 2019	**14.8**	**0.8**	**1.7**	**3.7**	**21.0**

As at 31 December 2018	Property right of use assets €'m	Leasehold refurbishment €'m	Computer equipment €'m	Office equipment €'m	Total €'m
Cost					
At 1 January	-	8.4	43.4	4.4	56.2
Additions	-	-	-	0.2	0.2
Asset Transfer	-	-	(2.1)	-	(2.1)
Disposals	-	-	-	-	-
At 31 December	-	8.4	41.3	4.6	54.3
Accumulated depreciation					
At 1 January	-	5.3	30.9	3.4	39.6
Depreciation charge for the year	-	0.8	4.5	-	5.3
Asset Transfer	-	-	(0.2)	-	(0.2)
Disposals	-	-	-	-	-
At 31 December	-	6.1	35.2	3.4	44.7
Net book value as 31 December 2018	-	2.3	6.1	1.2	9.6

The Company lease a number of properties in countries in which it operates and these are represented above as property right of use assets.

The Company has used hindsight in some cases to determine outcomes with regard to leases with break clauses and extension options.

The disposal and impairment in 2019, under property right of use assets, relates to the partial termination that occurred in March 2019 for the NY office lease. The lease was subsequently disposed of following the move of LCH's US operations into the main LSEG office in the final quarter of the year.

12. Balances with clearing members

	2019 €'m	2018 €'m
Assets		
Transactions with clearing members at fair value through profit or loss	**212,203.7**	325,969.6
Other balances with clearing member at amortised cost	**40.1**	35.8
	212,243.8	326,005.4
Liabilities		
Transactions with clearing members at fair value through profit or loss	**(212,203.7)**	(325,969.6)
Initial margin and other balances with clearing members at amortised cost	**(68,594.3)**	(60,314.7)
	(280,798.0)	(386,284.3)

The transactions with clearing members of €212,203.7 million (2018: €325,969.6 million) are fully secured by collateral held by the Company.

At 31 December 2019 the total of fully collateralised loans in respect of fixed income transactions was €208,620.6 million (2018: €322,979.7 million). This collateral has in turn been passed on to fixed income counterparties to secure the Company's liabilities in respect of fixed income contracts.

13. Trade and other receivables

	2019 €'m	2018 €'m
Non-current		
Other receivables	**1.0**	0.7
Total non-current	**1.0**	0.7
Current		
Trade receivables:		
Fees receivable	**39.3**	39.8
Interest accrued on investment portfolio	**93.0**	105.4
	132.3	145.2
Margin receivable on reverse repurchase contracts	**3.1**	138.0
Other receivables	**0.3**	0.2
Prepayments	**7.4**	10.2
Amount owed by parent companies	**0.4**	1.3
Amount owed by fellow subsidiary companies	**7.1**	18.8
Total current	**150.6**	313.7

The non-current assets include deposits on the Company's office premises.

Fees receivable are the Company's rights to consideration for work completed but not invoiced at the reporting date. The balance of €39.3 million (2018: €39.8 million) arises solely from services provided in 2019 and is invoiced shortly after the balance sheet date.

The Company collects virtually all of its fee receivables via PPS (Protected Payment System) which members are required to sign up to on admission as a clearing member. More than 99% of fees are collected in this way less than five days after the invoice date. The Company does not calculate an expected credit loss allowance on its fee receivables as it expects to receive all amounts due in a timely manner.

14. Cash and cash equivalents

	2019	2018
	€m	€m
Cash at bank and in hand	**50.7**	65.4
Short-term deposits	**599.0**	540.4
Cash and cash equivalents	**649.7**	605.8

The short-term deposits are fully collateralised by sovereign and investment grade corporate securities in accordance with eligibility criteria approved by the Company's Risk Committees. The Company defines short-term as less than 90 days but these are predominantly overnight.

€82.0 million (2018: €74.0 million) of the cash and cash equivalent amount is restricted as the Company's own resources to be used in the default waterfall. This is allocated by default fund on a pro rata basis as follows at 31 December 2019: Rates Derivatives €56.6 million, ForexClear €11.4 milion, RepoClear €11.9 million and EquityClear €2.1 million.

The remaining cash represents the balance of default funds and margin monies placed on deposit for the purpose of earning finance income.

15. Trade and other payables

	2019	2018
	€'m	€'m
Non-current		
Lease liabilities	**13.8**	-
Other payables	**2.2**	2.6
Total non-current	**16.0**	2.6
Current		
Trade payables	**11.1**	6.0
Other taxation and social security	**7.1**	6.1
Accruals	**46.6**	43.2
Amounts owed to parent companies	**7.1**	6.8
Amounts owed to fellow subsidiary companies	**33.1**	44.9
Contract liabilities	**2.4**	1.6
Other payables	**104.7**	135.8
Margin payable on reverse repurchase contracts	**130.7**	17.3
Lease liabilities	**2.7**	-
Total current	**345.5**	261.7

Other payables include amounts accrued under the Company's revenue share agreements.

Changes in the Company's contract liabilities balances during the year

	2019
Contract liabilities	**€'m**
Contract liabilities as at 1 January	1.6
Revenue recognised in the income statement	(1.6)
Increase due to consideration received	2.4
Contract liabilities as at 31 December	**2.4**

The Company's contract liability represents the aggregate amount of transaction price allocated to performance obligations that are unsatisfied, or partially unsatisfied and are expected to be recognised during the 12 months after the reporting date.

The Company's contract liabilities represent fees charged in advance in respect of the RepoClear service.

16. Leases

Movements in the lease liabilities during the year were as follows:

	2019
	€'m
31 December 2018	**-**
Adoption of IFRS 16 (note 1)	**22.2**
1 January 2019	**22.2**
Lease term modification	**(1.2)**
Interest expense recognised	**0.2**
Lease payments	**(5.2)**
Foreign exchange	**0.5**
31 December 2019	**16.5**

As permitted by IFRS 16, no comparatives are given in the year of adoption.

17. Loans and borrowings

	2019	2018
	€'m	€'m
Current		
Loan from parent company	**-**	(5.5)
Loan to parent company	**0.6**	5.8

In December 2016, the Company signed a five year revolving credit facility with its parent company which is repayable with three month's notice. Interest is charged on the loan at market rates. The loans represent different currencies.

18. Default funds

The purpose of the default funds is to absorb any losses incurred by the Company in the event of clearing member default if margin collateral is insufficient to cover the management and close out of the positions of the defaulting clearing member. Default funds are segregated to cover the different business lines of the Company. The total default funds held by the Company at 31 December 2019 were €10,197.1 million (2018: €8,929.3 million).

19. Employee benefits

i) Staff costs

All staff and directors	**2019**	2018
	€'m	€'m
Salaries and other benefits	**87.6**	91.0
Social security costs	**10.9**	10.0
Share-based compensation	**4.1**	3.3
Pension costs	**5.1**	5.2
Staff costs before non-underlying items	**107.7**	109.5
Staff costs included in non-underlying items	**3.1**	-
Total staff costs	**110.8**	109.5
Average monthly number of staff employed	**567**	589

Staff costs and the average number of staff include the costs of contract staff who are not on the payroll but fulfil a similar role to employees.

Key management personnel

	2019	2018
	€'m	€'m
Remuneration and other short-term employee benefits	**4.8**	4.2
Deferred bonus and other long-term employee benefits	**1.2**	0.7
Share-based compensation	**2.6**	2.0
Pension contributions	**0.2**	0.2
Compensation for loss of office	**0.4**	-
Aggregate emoluments for key management personnel	**9.2**	7.1

The costs above include deferred bonuses, other long-term incentive plan (LTIP) awards and share-based payment costs on an accrued basis.

Key management personnel include the executive director and certain senior staff who manage the business on a day to day basis.

Directors' remuneration

	2019	2018
	€'m	€'m
Remuneration	**4.3**	4.3
Compensation for loss of office	**0.4**	-
Total remuneration	**4.7**	4.3

Remuneration of directors who are also directors of other LCH Group companies is charged by way of a management charge from LCH Group Holdings Limited and is included above.

The costs above include deferred bonuses, other LTIP awards and share-based payment costs when they vest or become payable.

The highest paid director received total remuneration of €1,758,369 (2018: €1,268,997) in the year.

Three directors are a deferred member of the Company's defined benefit pension scheme. Contributions of €93,883 (2018: €95,980) have been made on behalf of three (2018: three) directors to a defined contribution scheme.

Three (2018: three) directors, including the highest paid director, participate in the share-based award schemes detailed below.

Independent non-executive directors received fees for their services. The Board determines fees that reflect the level of individual responsibilities, attendance of meetings and membership of Board committees. Non-executive directors representing shareholders did not receive fees.

ii) Share-based payments

Company employees were eligible to participate in one or more of the following London Stock Exchange Group (LSEG) share option based arrangements during the financial year:

a. The LSEG Long Term Incentive Plan 2014 (LSEG LTIP)
b. The LCH Group Long Term Incentive Plan (LCH LTIP)
c. The LSEG SAYE Option Scheme and LSEG International Sharesave Plan (together SAYE schemes)
d. The LSEG Restricted Share Award Plan 2018 (Restricted Plans)

The **LSEG LTIP** has two elements, an award of Performance Shares and a conditional award of Matching Shares, which is linked to a co-investment being made by the executive. Awards are made in the form of nil-cost options. Under the Matching Shares arrangement, selected executives may invest up to the value of 50% of their net-of-tax base salary in LSEG shares (Invested Value). The Invested Value is then matched with a performance related Matching Share award, matched 2:1 on a pre-tax basis (up to a maximum Matching Share award of 100% of pre-tax base salary).

Vesting of the LSEG LTIP awards is dependent upon LSEG's absolute total shareholder return (TSR) performance and adjusted basic earnings per share growth (EPS) (50% on each) over a three year period. The following targets applied to options granted in 2019:

EPS element (50%): Absolute growth over 3 years	TSR element (50%): Absolute growth over 3 years	Proportion of element that vests
More than 12% p.a.	More than 14% p.a.	100%
6% p.a.	6% p.a.	25%*
Less than 6% p.a.	Less than 6% p.a.	0%

* Straight line pro-rating applies between this trigger and 100% vesting.

The LCH LTIP also has two elements, an award of Performance Shares and a conditional award of Matching Shares, which is linked to a co-investment being made by the executive. The Matching Shares element only applies to selected senior management. The Performance Shares are available to a wider group of executives. Awards are made in the form of nil-cost options. Under the Matching Shares arrangement, selected executives may invest up to the value of 50% of their net-of-tax base salary in LSEG shares (Invested Value). The Invested Value is then matched with a performance related Matching Share award, matched 2:1 on a pre-tax basis (up to a maximum Matching Share award of 100% of pre-tax base salary).

Vesting of the LCH LTIP award is initially dependent upon the achievement of a risk management gateway. If this is achieved, the degree of vesting of the award is assessed against three conditions, measured independently over three years:

Awards prior to 2017

1) **Regulatory metric**: a qualitative assessment of LCH Group performance on regulatory matters (comprising up to 34% of the award)
2) **Cost metric:** a quantitative assessment of qualifying cost savings during the performance period (comprising up to 33% of the award)
3) **EBIT metric:** a quantitative assessment of LCH Group earnings before interest and tax (EBIT) performance at the end of the performance period (comprising up to 33% of the award)

Awards for 2017 onwards

1) **Resiliency metric**: a qualitative assessment of performance on regulatory matters and enterprise risk incorporating operational risk (comprising up to 34% of the award)
2) **Efficiency metric:** a quantitative assessment of EBITDA margin performance period at the end of the performance period (comprising up to 33% of the award)
3) **Growth metric:** a quantitative assessment of earnings before interest and tax (EBIT) performance at the end of the performance period (comprising up to 33% of the award)

For Internal Audit, Risk and Compliance participants, the Cost/Efficiency and EBIT/Growth metrics do not apply. Assuming the risk management gateway is achieved, the vesting of the award is assessed against the Regulatory/Resiliency metric only.

The risk management gateway will be assessed by the LCH Group Remuneration Committee ('Committee') who will assess if the LCH Group has managed its risk effectively over the three year period. The award lapses in full if any of the LCH Group CCPs suffers an aggregate loss of more than €12 million (Higher Level Losses). Equally, if, during the performance period any of the LCH Group CCPs suffers losses below this level or circumstances arise in the reasonable opinion of the Committee that have or could have, resulted in a significant adverse event which did, or could have, materially damaged future business operations, the Committee shall determine whether management could or should have taken action to prevent such circumstances and may lapse the award accordingly.

The Regulatory metric shall vest at 100% if it is determined that management actions in relation to regulatory matters were wholly effective during the performance period. If it is determined that management actions in relation to regulatory matters were not wholly effective during the performance period, then the Remuneration Committee shall determine a lesser level of vesting as it deems appropriate.

In order for the portion of the Performance Share or Matching Share Award subject to the Cost metric to vest, the Committee must determine the amount of cumulative net consolidated cost savings of London Stock Exchange Group achieved over the performance period by reference to specified cost saving projections and adjustments set out in the rules of the Plan.

The Cost and EBIT metrics shall vest as follows:

Cost metric: amount of qualifying cost savings determined to have been achieved	**EBIT metric: EBIT level**	**Percentage of shares that vest**
2016 award:		
€60 million or more	€230 million or more	100%
€50 million	€200 million	62.5%
€40 million	€170 million	25%
Below €40 million	Below €170 million	0%

Efficiency metric: EBITDA margin level	**Growth Metric: EBIT level**	**Percentage of shares that vest**
2017 award:		
53% or more	€337 million or more	100%
48%	€306 million	62.5%
41%	€275 million	25%
Below 41%	Below €275 million	0%
2018 award:		
53% or more	€393 million or more	100%
50%	€357 million	62.5%
48%	€321 million	25%
Below 48%	Below €321 million	0%
2019 award:		
55% or more	€400 million or more	100%
52.5%	€370 million	62.5%
50%	€340 million	25%
Below 50%	Below €340 million	0%

At the end of the performance period, the Committee shall calculate LCH Group EBIT and EBITDA for the last financial year in the performance period, as approved by the LCH Group Holdings Limited Audit Committee. EBIT means earnings before interest, tax and non-underlying items, as reported in the consolidated accounts for LCH Group Holdings Limited, subject to such adjustments as the Committee considers necessary to take account of matters that it considers to be appropriate. EBITDA margin means earnings before interest, tax, depreciation and amortisation divided by the Gross revenue as reported in the consolidated financial statements of LCH Group Holdings Limited.

If circumstances occur, which, in the reasonable opinion of the Committee, justify a reduction to awards granted, the Committee may at its discretion reduce an award or not grant future awards. In the event that an award has already vested, the Committee may determine that a repayment is made. The circumstances and timeframe in which the Committee may consider it appropriate to exercise such discretions are covered in the Plan Rules.

The **SAYE scheme** provides for grants of options to employees who enter into a SAYE savings contract; options are granted at 20% below fair market value. The scheme is available to employees based in the UK and US (and approved by HMRC in the UK). The options vest in full after three years, providing the employee remains employed by the LCH Group or the wider LSEG group of companies.

The **Restricted Plan** allow for grants to be made in the form of conditional awards over ordinary shares of LSEG, in the form of nil-cost options to certain executives. The vesting of such awards granted to date under the plans are conditional upon tenure.

Movements in the number of share options and awards outstanding and their weighted average exercise price in GBP are as follows:

	LSEG LTIPs Number	LCH LTIP Number	SAYE Number	Weighted average exercise price
As at 1 January 2019	**88,688**	**496,935**	**113,761**	
Granted in year	27,382	137,955	25,558	£38.46
Net transfers	-	(11,233)	(1,204)	£31.87
Exercised in year	(40,683)	(113,197)	(19,860)	£23.21
Lapsed/forfeited in year	(3,250)	(78,766)	(7,372)	£32.47
31 December 2019	**72,137**	**431,694**	**110,883**	£33.65

578 of the options were exercisable as at 31 December 2019 (2018: 2,439). The weighted average exercise price is nil for all other schemes except the SAYE. The weighted average share price of LSEG plc shares during the year was £58.75 (2018: £42.62). Transfers in or out relate to staff who are either newly employed or no longer employed directly by the Group, but whose options have not been forfeited as they were or remain employees of other LSEG companies.

The range of exercise prices and weighted average remaining contractual life of awards and options outstanding are as follows:

As at 31 December 2019	Number outstanding	Weighted average remaining contractual life Years
LSEG LTIPs - nil	72,137	0.8
LCH LTIP - nil	431,694	1.3
SAYE – between £20.01 and £30.00	-	-
SAYE - over £30.01	110,883	1.4
Total	**614,714**	**1.2**

The fair value of share options granted during the year was determined using a stochastic valuation model. The key assumptions used in the valuation were as follows:

	LSEG LTIP		LCH LTIP		
Grant date	Performance shares 22-Mar-2019	Matching shares 22-Mar-2019	Performance shares 22-Mar-2019	Performance shares 28-Nov-2019	Matching shares 22-Mar-2019
Grant date share price (£)	£45.94	£45.94	£45.94	£68.98	£45.94
Expected life (years)	3 years	3 years	3 years	3 years	3 years
Dividend yield	1.46%	1.46%	1.46%	0.92%	1.46%
Risk-free interest rate	0.72%	0.72%	0.72%	0.50%	0.72%
Volatility	20.3%	20.3%	20.3%	21.2%	20.3%
Fair value TSR (£)	£13.69	£13.69	-	-	-
Fair value EPS (£)	£43.97	£43.97	-	-	-
Fair value non-market conditions (£)	-	-	£43.97	£67.10	£43.97

	SAYE	Restricted Plan
Grant date	01-May-19	28-Nov-19
Grant date share price (£)	£51.86	£68.98
Expected life (years)	3.3 years	0.33 year – 4.33 years
Exercise price (£)	£38.46 - £39.37	£-
Dividend yield	1.28%	0.92%
Risk-free interest rate	0.81%	0.49% - 0.74%
Volatility	23.4%	21.0% - 39.1%
Fair value non-market conditions (£)	£14.41 - £15.00	£66.28 - £68.77

The volatility is based on a statistical analysis of LSEG's weekly share price since its flotation in July 2001.

The fair value for LSEG LTIP performance and matching shares granted during the year is based on a total shareholder return (TSR) pricing model which takes into account the TSR vesting conditions. All other fair values of options granted are based on a Black-Scholes model. Holders of share awards and share options are not entitled to receive dividends declared during the vesting period.

iii) Pension commitments

Defined contribution scheme

The Company pays fixed contributions to the defined contribution scheme and there is no legal or constructive obligation to pay further contributions. The assets of the plan are held separately from those of the Company in a fund under the control of the trustees. The total expense charged to the income statement of €4.9 million (2018: €4.8 million) represents contributions payable to the plan by the Company at rates specified in the rules of the plan.

Defined benefit schemes

The Company operated a defined benefit pension scheme for its employees in the UK (now the LCH section of the LSEG Pension Scheme), which required contributions to be made to a separate trustee administered fund. The LSEG Pension Scheme was formed on 5 September 2016 as a result of a sectionalised merger between the LCH Pension Scheme and the London Stock Exchange Retirement Plan. The scheme maintains separate LCH and LSEG sections with the Company sponsoring only the LCH section. The LCH Pension Scheme was closed to new members from 30 September 2009 and closed to future accrual on 31 March 2013. The last actuarial valuation of the LCH section of the LSEG Pension Scheme was carried out as at 31 December 2017 by an independent qualified actuary.

The valuations of the UK scheme conducted for financial reporting purposes are based on the triennial actuarial valuation as at 31 December 2017. A summary of the principal assumptions used is detailed below. The Company is not aware of any events subsequent to 31 December 2019, which would have a material impact on the results of the valuation.

Weighted-average assumptions to determine benefit obligations

	2019	2018
Discount rate	**2.1%**	3.0%
Rate of salary increase	**n/a**	n/a
Rate of price inflation	**2.9%**	3.2%
Rate of pension increases	**2.1%**	2.2%

Implied life expectancy at age 65

	2019	2018
Male currently aged 65	**27.0**	27.5
Male currently aged 45	**27.6**	28.1
Female currently aged 65	**28.8**	29.2
Female currently aged 45	**30.0**	30.5

The discount rate for the scheme has been determined from a curve of AA corporate bond rates by duration which is consistent with the estimated weighted average duration of the scheme's liabilities at around 23 years. Scheme assets are stated at their market value at the respective statement of financial position dates.

Changes in the present value of the defined benefit obligations during the year

	2019	2018
	€'m	€'m
Benefit obligation as at 1 January	**219.5**	233.7
Pension expense:		
Current service cost	**-**	-
Past service loss	**-**	0.3
Net interest	**6.7**	6.4
Re-measurement losses/(gains):		
Effect of changes in demographic assumptions	**(3.1)**	(9.0)
Effect of changes in financial assumptions	**36.4**	1.6
Effect of experience adjustments	**-**	(1.0)
Benefits paid	**(6.7)**	(9.7)
Foreign exchange	**13.6**	(2.8)
Benefit obligation as at 31 December	**266.4**	219.5

Changes in scheme assets

	2019	2018
	€'m	€'m
Fair value of scheme assets as at 1 January	**270.7**	296.2
Pension income:		
Net interest	**8.3**	8.2
Re-measurement gains:		
Return on plan assets (excluding interest income)	**43.1**	(23.7)
Employer contributions	**3.5**	3.7
Benefits paid	**(6.7)**	(9.7)
Foreign exchange	**16.6**	(4.0)
Fair value of scheme assets as at 31 December	**335.5**	270.7

Fair value of scheme assets with a quoted market price

	2019	2018
	€'m	€'m
Cash and cash equivalents	**5.2**	1.9
Equity instruments - quoted	**61.0**	68.5
Equity instruments - not quoted	**2.8**	47.2
Debt / LDI instruments - quoted	**111.0**	18.4
Debt / LDI instruments - not quoted	**155.5**	134.7
Total fair value of assets	**335.5**	270.7
Present value of funded obligations	**(266.4)**	(219.5)
Surplus	**69.1**	51.2

No asset ceiling has been applied to the net surplus recognised as no minimum funding commitments are associated to the plans.

Sensitivity analysis

The sensitivity of the value of the benefit obligation to the discount rate is shown below:

	2019	2018
	€'m	€'m
Discount rate - increase by 0.5%	**(28.1)**	(21.6)
Revaluation in deferment (CPI) and salary increases - increase by 0.5%	**7.3**	6.7
Pension increases in payment - increase by 0.5%	**19.3**	12.8
Life expectancy - increase by 1 year	**9.1**	6.2

The sensitivity analyses above have been determined based on a method that extrapolates the impact on the benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

Payments from the defined benefit schemes

The following payments are expected to be made in future years out of the defined benefit plans' obligations:

	2019
	€'m
Within the next 12 months	**3.4**
Between 2 and 5 years	**14.3**
Following 5 years	**19.9**
Total	**37.6**

Contributions

During 2019 a contribution of €3.5 million (2018: €3.7 million) was made to the LCH section of the defined benefit pension plan in the UK. As part of the triennial valuation as at 31 December 2017, the Company has agreed a new funding plan with the trustee, consisting of annual contributions of £3m (€3.5m) a year for the years 2019 to 2022 inclusive provided a trustee valuation deficit exists at the prior year end.

20. Financial instruments

Financial assets and liabilities

The financial instruments of the Group and Company are categorised as follows:

	Note	2019 €'m	2018 €'m
Financial assets at fair value through profit or loss			
Transactions with clearing members at fair value through profit or loss	12	**212,203.7**	325,969.6
Financial assets at fair value through other comprehensive income			
Government bonds		**22,129.1**	16,288.9
Clearing business other financial assets		**22,129.1**	16,288.9
Financial assets at amortised cost			
Trade and other receivables	13	**144.2**	304.2
Other balances with clearing members	12	**40.1**	35.8
Interest bearing loans	17	**0.6**	5.8
Cash and cash equivalents	14	**649.7**	605.8
Clearing business cash and cash equivalents		**56,688.2**	52,698.9
Financial liabilities at fair value through profit or loss			
Transactions with clearing members at fair value through profit or loss	12	**(212,203.7)**	(325,969.6)
Financial liabilities at amortised cost			
Trade and other payables	15	**(352.0)**	(256.6)
Initial margin and other balances with clearing member	12	**(68,594.3)**	(60,314.7)
Default funds	18	**(10,197.1)**	(8,929.3)
Interest bearing loans and borrowings	17	**-**	(5.5)

Prepayments and other taxes within trade and other receivables are not classified as financial assets. Other taxes and the liability in respect of the renegotiated operating agreements within trade and other payables are not classified as financial liabilities.

All financial assets held at fair value are designated as such on initial recognition by the Company. Other assets were tested for impairment but no expected loss provisions are necessary.

Fair value hierarchy

The Company uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

- Level 1: quoted (unadjusted) prices in active markets for identical assets or liabilities
- Level 2: other techniques for which all inputs, which have a significant effect on the recorded fair value are observable, either directly or indirectly
- Level 3: techniques which use inputs which have a significant effect on the recorded fair value that are not based on observable market data. The Company has no financial instruments in this category

	2019			2018		
	Level 1 €'m	**Level 2 €'m**	**Total €'m**	Level 1 €'m	Level 2 €'m	Total €'m
Assets measured at fair value						
Transactions with clearing members - non-derivatives	**-**	**208,620.6**	**208,620.6**	-	322,979.7	322,979.7
Transactions with clearing members - derivatives	**-**	**3,583.1**	**3,583.1**	0.6	2,989.3	2,989.9
Government issued bonds at fair value through comprehensive income	**22,129.1**	**-**	**22,129.1**	16,288.9	-	16,288.9
Liabilities measured at fair value						
Transactions with clearing members - non-derivatives	**-**	**(208,620.6)**	**(208,620.6)**	-	(322,979.7)	(322,979.7)
Transactions with clearing members - derivatives	**-**	**(3,583.1)**	**(3,583.1)**	(0.6)	(2,989.3)	(2,989.9)

For assets and liabilities classified as level 1, the fair value is based on market price quotations at the reporting date.

For assets and liabilities classified as level 2, the fair value is calculated using valuation techniques with market observable inputs. Frequently applied techniques include forward pricing and swap models using present value calculations. The models incorporate various inputs including foreign exchange spot and forward rates, interest rate curves and forward rate curves.

Amounts included in the income statement in relation to financial instruments are as follows:

	2019 €'m	2018 €'m
Treasury income on assets held at fair value	**283.6**	257.4
Treasury income on other financial assets	**733.3**	440.6
Treasury income on liabilities held at amortised cost	**156.2**	149.5
Treasury income	**1,173.1**	847.5
Treasury expense on assets held at fair value	**(20.9)**	(31.5)
Treasury expense on assets held at amortised cost	**(70.2)**	(66.0)
Treasury expense on liabilities held at amortised cost	**(899.9)**	(598.5)
Treasury expense	**(991.0)**	(696.0)
Net treasury income	**182.1**	151.5
Net finance income on pension fund assets	**1.6**	1.8
Finance income on assets held at amortised cost	**0.6**	0.5
Finance income on liabilities held at amortised cost	**0.2**	0.2
Finance expense on leases	**(0.1)**	-
Finance expense on loans and borrowings held at amortised cost	**(2.5)**	(2.6)
Net finance expense	**(0.2)**	(0.1)

Treasury income on liabilities held at amortised cost represents amounts earned from clearing members' cash collateral deposits which attract negative interest rates. Treasury expense on assets held at amortised cost represents amounts where the Company incurs negative interest on its cash deposits.

Offsetting financial assets and financial liabilities

The Company reports financial assets and financial liabilities on a net basis on the balance sheet where there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis, or to realise the asset and settle the liability simultaneously.

31 December 2019	**Gross amounts €m**	**Amount offset €m**	**Net amount as reported €m**
Derivative financial assets	**1,246,728.5**	**(1,243,145.4)**	**3,583.1**
Repurchase agreements	**224,902.0**	**(16,281.4)**	**208,620.6**
Total assets	**1,471,630.5**	**(1,259,426.8)**	**212,203.7**
Derivative financial liabilities	**(1,282,348.7)**	**1,278,765.6**	**(3,583.1)**
Reverse repurchase agreements	**(224,902.0)**	**16,281.4**	**(208,620.6)**
Total liabilities	**(1,507,250.7)**	**1,295,047.0**	**(212,203.7)**

31 December 2018	Gross amounts €m	Amount offset €m	Net amount as reported €m
Derivative financial assets	933,023.5	(930,033.6)	2,989.9
Repurchase agreements	348,178.4	(25,198.7)	322,979.7
Total assets	1,281,201.9	(955,232.3)	325,969.6
Derivative financial liabilities	(961,045.0)	958,055.1	(2,989.9)
Reverse repurchase agreements	(348,178.4)	25,198.7	(322,979.7)
Total liabilities	(1,309,223.4)	983,253.8	(325,969.6)

The imbalance between asset and liability for gross and offset amounts is caused by the exclusion of settled to market (STM) amounts from the gross balance on the grounds that these trades are settled.

As a CCP, the Company operates as principal and sits in the middle of clearing members' transactions and holds default funds and margin amounts as a contingency against the default of a member and so further amounts are available to offset in the event of a default reducing the asset and liability of €212,203.7 million (2018: €325,969.6 million) to nil.

21. Provisions

	2019		
Current	**Property €'m**	**Other €'m**	**Total €'m**
1 January 2019	-	-	-
Provided in year	-	**(3.7)**	**(3.7)**
Utilised during the year	-	**2.6**	**2.6**
31 December 2019	-	**(1.1)**	**(1.1)**
Non-current – provided in year	**(0.6)**	-	**(0.6)**
31 December 2019	**(0.6)**	-	**(0.6)**

The property provision represents the estimated net present value of future costs for dilapidation costs.

Other provision relates to the expected costs arising from the restructuring programme approved by the board during 2019.

22. Commitments and contingencies

Treasury assets supporting operational facilities

At 31 December 2019, the Company had assets and collateral in support of the following operational facilities:

	2019	2018
	€'m	€'m
Collateral deposits with central banks	**509.3**	482.5
Fixed income settlement*	**29,206.5**	23,074.5

*The Company holds collateral as security against tri-party cash loans as well as government debt and government backed bank issued debt, which is used to support RepoClear Settlement activity.

23. Issued capital and reserves

Share Capital

Ordinary shares

The Company has 313,036,873 fully paid-up ordinary shares of €1.00 each in issue as at 31 December 2019 (2018: 313,036,873).

No shares were issued in the year. All the Company's shares are owned by LCH Group Holdings Limited.

Other reserves

Share premium

No additional share premium has been recognised and the balance of €41.2 million is unchanged in the year.

Capital redemption reserve

The balance of €5.1 million is unchanged during the year and represents the nominal value of ordinary shares that have been repurchased and cancelled.

Distributable reserves

Retained earnings of €403.2 million (2018: €300.1 million) are regarded as distributable under the Companies Act 2006, but may be subject to additional regulatory restrictions (see note 25). Included within retained earnings is a revaluation reserve of €1.2 million (2018: €3.0 million) in relation to the Company's available for sale assets.

24. Dividends

	2019	2018
	€'m	€'m
Final dividend paid of €0.2779 (2018: €0.3610) per ordinary share	**87.0**	113.0
Interim dividend paid of €0.0958 (2018: €0.1597) ordinary share	**30.0**	50.0
Total dividends paid	**117.0**	163.0

On 13 February 2020, the Board of Directors proposed a final dividend of €0.3961 per ordinary share (€124 million) pending regulatory review.

25. Capital management

The Company's approach to capital management is to maintain a strong capital base that will support the development of the business and meet regulatory capital requirements at all times. This is managed with reference to external capital requirements, including a consideration of future impacts to the Company. Capital plans are included within the Company's medium-term financial plan which is presented to the Board annually. The capital plans take into account current and future regulatory requirements and the development of the Company's business. The Company monitors capital resources in relation to its capital requirements.

The Company is considered a Qualifying Central Counterparty (QCCP) under the European Capital Requirements Regulations (CRR) as it has received authorisation under the European Markets Infrastructure Regulations (EMIR). It is also registered as a Derivatives Clearing Organization (DCO) in the USA affording it QCCP status for USA members.

The Company is regulated by the Bank of England as a Recognised Clearing House under the Financial Services and Markets Act 2000 and is subject to capital adequacy rules under EMIR. It is also regulated by the CFTC as a DCO in the USA, and is licensed by the Swiss Financial Markets Supervisory Authority (FINMA) as a CCP to SIX Swiss Exchange in Switzerland. In Canada it is recognised as a Clearing Agent by the Ontario Securities Commission (OSC) in Ontario, and the AMF in Québec, and in Australia it is recognised as a CCP by the Australian Securities & Investments Commission (ASIC). The Company is also subject to oversight by other market regulators and central banks in jurisdictions in which business is carried out.

The Company has fully complied with its externally imposed capital requirements in the year.

In particular the Company is required to ensure that its EMIR Capital Requirement (required by the Bank of England) is met by both its capital and audited reserves and adjusted liquid financial resources.

The EMIR Capital Requirement at the end of 2019 was €377.3 million (2018: €365.2 million) and as at 31 December 2019 the Company's adjusted liquid financial assets were measured as €567.7 million (2018: €531.8 million) after deduction of the contribution to a clearing member default of €82.0 million (2018: €74.0 million). The Company's adjusted net capital as at 31 December 2019 was €460.4 million (2018: €435.5 million) after deduction of the contribution to a clearing member default. The audited retained earnings for the year of €222.9 million (2018: €149.9 million) will be included in the adjusted net capital of the Company when the financial statements have been approved for publication.

26. Government grants

The Company qualifies for government assistance in the form of research and development tax credits. The grant is received as a reduction of the tax payable. In 2019 €1.6 million (2018: €0.6 million) has been recognised in the income statement as a reduction of expenses, and the amount of tax payable has been reduced by the same amount.

The grant is subject to potential tax audit to ensure the eligibility of the expenses claimed. No provision has been made for any repayment of the amounts received as this is deemed highly unlikely to occur.

27. Related party transactions

Key management compensation personnel

Details of key management personnel and their total remuneration are disclosed in note 19.

Ultimate parent company and group companies

London Stock Exchange Group plc (LSEG) is the ultimate parent company of the Company and the largest group that prepares consolidated accounts. LCH Group Holdings Limited is the immediate parent company and the smallest group that prepares consolidated accounts.

Copies of the consolidated financial statements for LCH Group Holdings Limited for the year ended 31 December 2019 are available from the Company Secretary at the registered office. Copies of the consolidated financial statements for London Stock Exchange Group plc for the year ended 31 December 2018 are available from the Company Secretary, London Stock Exchange Group plc, 10 Paternoster Square, London, EC4M 7LS.

A director of the ultimate parent company has a 40.5% (2018: 40.5%) equity interest in Quantile Technologies Limited who are an approved compression service provider for LCH Limited. The Company operated a commercial arrangement with Quantile Technologies Limited and all transactions were carried out on an arm's length basis. During the year the Company recognised income of €0.6 million and expenses of €0.5 million as part of the agreement (2018: nil).

Other group companies

Sales to and purchases from other group companies are at arm's length and at normal market rates. Outstanding balances at the year end are unsecured and are settled in cash. For the year ended 31 December 2019, the Company has not raised any provision for doubtful debts relating to amounts owed by other group companies.

Details of transactions with the Company's parent, subsidiary and fellow subsidiary companies which have passed through the income statement during the year, together with details of outstanding balances, are set out below.

	2019 **€m**	2018 €m
Transactions with parent companies		
Income statement		
Services recharged to parent companies	**0.5**	0.2
Services recharged from parent companies	**(7.7)**	(7.5)
	(7.2)	(7.3)
Statement of financial position		
Intercompany loan from parent company (note 17)	**-**	(5.5)
Intercompany loan due from parent company (note 17)	**0.6**	5.8
Amount due to parent companies at 31 December	**(6.7)**	(5.5)
Transactions with fellow subsidiaries		
Income statement		
Services recharged to fellow subsidiaries	**11.1**	8.8
Services recharged from fellow subsidiaries	**(63.6)**	(58.2)
	(52.5)	(49.4)
Statement of financial position		
Amount due to fellow subsidiaries at 31 December	**(26.0)**	(26.1)