

Banque Centrale de Compensation

LCH S.A.

**INDEPENDENT AUDITOR'S REPORT
ON THE FINANCIAL STATEMENTS**

Year ended December 31, 2021

February 25, 2022

Banque Centrale de Compensation

LCH S.A.

Year ended December 31, 2021

Independent auditor's report on the financial statements

To the Board of Directors,

Opinion on the Financial Statements

We have audited the accompanying balance sheets of LCH SA (the "Company") as of December 31, 2021 and 2020, the related statements of income and comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and involved our especially challenging, subjective, or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing separate opinions on the critical audit matter or on the accounts or disclosures to which it relates.

Evaluation of Recoverability of Intangible Assets

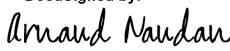
As described in Note 7 to the financial statements, the Company's work-in-progress IT projects intangible assets were € 41.4 million at December 31, 2021. The Company carries out impairment testing on these intangible assets annually, or more often if circumstances show that an impairment may be likely. The fair value of these intangible assets was determined based on the discounted cash flow projections which used significant management's judgments and assumptions.

We assessed the valuation of these intangible assets as a critical audit matter because it involves significant management's judgments and assumptions related to forecasted revenues, long-term growth rate and pre-tax discount rate. Auditing these elements involved especially challenging, subjective, and complex auditor judgment due to the nature and extent of audit effort required to address these matters, including the extent of specialized skills or knowledge needed.

The primary procedures we performed to address this critical audit matter included:

- With respect to work-in-progress IT projects intangible assets:
 - Evaluating the reasonableness of management's assumptions used to develop cash flow forecasts through: (i) assessing the appropriateness of management's methodologies used, (ii) comparing assumptions to prior period forecasts, historical operating performance, internal communications made by the Company, and (iii) evaluating the reasonableness of the pre-tax discount rate and terminal growth rate used and performing sensitivity analysis.
- With respect to work-in-progress IT projects intangible assets:
 - Evaluating for a sample of IT projects the reasonableness of capitalized costs including: (i) evaluating the appropriateness of the management's capitalization policy, (ii) performing test of details of project costs to assess the appropriateness of capitalization of costs, and (iii) conducting interviews with management and project managers to assess the nature and the status of work-in-progress IT projects including review of projects' reports and minutes, as applicable.

Paris, February 25, 2022

DocuSigned by:

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BDO Paris
Arnaud NAUDAN

We have served as the Company's statutory auditor since 2016.

LCH SA

**Report and Financial Statements
Under IFRS
For the year ended 31 December 2021**

Company Registration Number 692 032 485

LCH SA

DIRECTORS AND OFFICERS

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LCH SA

DIRECTORS AND OFFICERS

DIRECTORS

<u>Name</u>	<u>Type of director</u>	<u>Other directorships at 31 December 2021</u>
Claude Ehlinger (Appointed on 30.10.2020)	Chairman	Bureau Veritas SA Stahl Parent BV Stahl Lux 2 SA Stahl Group SA Winvest Conseil SA Trief Corporation SA Oranje-Nassau Groep Wendel SE
Christophe Hémon	Director	Euroclear Holding SA/NV
Daniel Maguire	Director	LCH Group Holdings Limited LCH Limited International Swaps and Derivatives Association
Dennis McLaughlin (resigned 9 April 2021)	Director	LCH Limited SwapAgent Ltd
Eric Litvack	Director	International Swaps and Derivatives Association Global Financial Markets Association
Anthony Attia	Director	Euronext NV (resigned on 11 May 2021) Euronext Paris SA (resigned on 11 May 2021) Euronext Dublin Enternext SA LiquidShare SA Euroclear Holding SA/NV (resigned on 1 July 2021) Sicovam Holding SA Elite S.p.A (appointed on 12 May 2021) MTS S.p.A (from 12 May 2021 to 28 October 2021)
Marc Breillout	Director	Sucden Financial Ltd
Ronaldus (Ron) Berndsen	Director	LCH Limited Quantoz (appointed 15 November 2021)
Jeroen Krens	Director	International Swaps and Derivatives Association OTCderiv OTCderivnet
Diane Côté (resigned 21 February 2021)	Director	London Stock Exchange Group Société Générale
Jane Guyett (Appointed on 06.01.2020)	Director	LCH Limited UK Government Investments Limited

LCH SA

DIRECTORS AND OFFICERS

DIRECTORS

		Connect Plus (M25) PLC Dalcor Pharma UK Limited (resigned 31 July 2021) Royal London Mutual Insurance Society (appointed 4 August 2021)
Carole Machell	Director	Weatherby's Bank Limited Distribution Finance Capital Limited Sainsbury's Bank Plc
Brigitte Trafford (appointed 19 February 2021)	Director	London Stock Exchange Group NewsGuard Technologies

There are 5 standing committees which assist LCH SA (the "Company"): the Audit committee, the Risk committee, the Technology, Security and Resilience committee, Remuneration committee and the Group nomination committee. The terms of reference defining the functions, missions, powers and responsibilities of these committees are approved by the Board of directors.

STATUTORY AUDITORS

Ernst & Young Audit, Tour First, 1 Place des Saisons, 92037 Paris La Défense
BDO Paris, 43-47 avenue de la Grande Armée, 75116 Paris

REGISTERED OFFICE

18, rue du Quatre Septembre 75002 Paris
Telephone: +33 (0) 1 70 37 65 00

LCH SA is fully consolidated in the accounts of LCH Group Holdings Limited, the head office of which is located at Aldgate House, 33 Aldgate High Street, London. The Company's ultimate parent since 1 May 2013 is London Stock Exchange Group plc (the "parent", "LSEG").

LCH SA
STATEMENT OF NET INCOME
Year ended 31 December 2021

	Notes	Year ended 31 December 2021 €m	Year ended 31 December 2020 €m
Clearing fees	3	186.8	165.1
Other fee income		53.2	44,7
Revenue sharing arrangements (a)		(35.8)	(32,5)
Revenue		204.2	177,3
Treasury income	17	229.8	196,7
Treasury expense	17	(160.4)	(137,8)
Net treasury income		69.4	58,9
Settlement and other income		20.2	17,1
Settlement fees payable		(13.7)	(12,6)
Net settlement and other income		6.5	4,5
Total income		280.1	240,7
Cost of sales (b)		(10.9)	(10,7)
Gross profit		269.2	230,0
Operating expenses	4	(110.9)	(99,6)
Operating profit		158.3	130,4
Finance income	5	0.0	0
Finance expense	5	(1.8)	(1,6)
Profit before taxation		156.5	128,7
Taxation	6	(43.7)	(40,2)
Profit for the year		112.8	88,5

(a) Euronext revenue share.

(b) This amount includes €1.8 million of CDS profit sharing recognized in 2021 (year ended 31 December 2020: €2.1 million) and Euronext for €3.0 million (year ended 31 December 2020: €3.0 million).

The transactions in the current and prior years were derived from continuing operations.

The notes on pages 9 to 57 form an integral part of these financial statements.

LCH SA
STATEMENT OF COMPREHENSIVE INCOME
Year ended 31 December 2021

	Notes	Year ended 31 December 2021 €m	Year ended 31 December 2020 €m
Profit for the year		112.8	88.5
Items that will not subsequently be reclassified to profit or loss			
Remeasurement gains/(losses) on defined benefit plans		0.7	(0.1)
Deferred tax relating to remeasurement gains/(losses) on defined benefit plans	6	(0.2)	0.1
Other items		(0.3)	-
Other comprehensive income for the year		0.2	-
Total comprehensive income for the year		112.7	88.5

The transactions in the current and prior years were derived from continuing operations.

The notes on pages 9 to 57 form an integral part of these financial statements.

LCH SA
STATEMENT OF FINANCIAL POSITION
Year ended 31 December 2021

		Year ended 31 December 2021	Year ended 31 December 2020
	Notes	€m	€m
ASSETS			
Non-current assets			
Intangible assets	7	100.5	83.7
Property, plant and equipment	9	9.9	12.4
Investment in associate	10	0	0
Financial assets at FVOCI - Equity		0.7	0.5
Trade and other receivables	12	0.4	0.3
Deferred tax asset	6	5.2	5.4
Total non-current assets		116.7	102.3
Current assets			
Balances with clearing members	11	499,929.6	501,324.5
Trade and other receivables	12	29.0	30.1
Income tax receivable		0	0
Clearing business cash and cash equivalent	13	32,763.8	27,379.7
Own cash and cash equivalent	13	335.4	304.8
Clearing business cash other financial assets	17	558.8	1,531.4
Total current assets		533,626.7	530,570.5
Total assets		533,733.4	530,672.8
LIABILITIES			
Current liabilities			
Balances with clearing members	11	527,446.7	524,361.5
Trade and other payables	14	69.9	69.1
Interest bearing loans and borrowings		0	0
Income tax payable		16.1	19.0
Provision		0.2	0.2
Default funds	15	5,763.9	5,835.5
Total current liabilities		533,296.8	530,285.3
Non-current liabilities			
Trade and other payables	14	5.6	9.1
Employee benefits	16	6.9	7.3
Total non-current liabilities		12.5	16.4
Total liabilities		533,309.3	530,301.7
Net assets		424.1	371.1

LCH SA
STATEMENT OF FINANCIAL POSITION
Year ended 31 December 2021

The notes on pages 9 to 57 form an integral part of these financial statements.

The financial statements were approved by the board on 22 February 2022 and signed on its behalf by:

Claude EHLINGER

Chairman

LCH SA

22 February 2022

Registered number 692 032 485

LCH SA
STATEMENT OF CASHFLOWS
Year ended 31 December 2021

	Notes	Year ended 31 December 2021 €m	Year ended 31 December 2020 €m
Cash flows arising from operating activities			
Profit for the year		112.7	88.5
Tax expense		43.7	40.2
Depreciation and amortisation		19.0	14.8
Share-based payments expense		1.8	1.8
(Increase)/decrease in trade and other receivables		1.1	(4.2)
Increase/(decrease) in trade and other payables		0.8	6.2
Unrealised fair value gains on financial instruments		0	0
Increase in CCP Cash and cash equivalents invested		(5,384.1)	(8,908.6)
(Increase)/decrease in fair value of member assets		1,395.0	(45,978.6)
Increase in fair value of member liabilities		3,085.1	55,782.4
(Decrease)/increase in default funds		(71.6)	565.3
Net cash inflow/(outflow) from operations		(796.6)	1,607.8
Tax received		0	0
Tax paid		(46.5)	(34.5)
Net cash inflow/(outflow) from operating activities		(843.0)	1,573.3
Investing activities			
Investment in intangible assets		(32.4)	(22.8)
Purchase of property, plant and equipment		(0.9)	(2.4)
(Disposal)/acquisition of financial assets		0	0
(Disposal)/acquisition of other financial assets		972.5	(1,471.3)
Increase/(decrease) in investments		0	0
Net cash inflow/(outflow) from investing activities		939.2	(1,496.5)
Financing activities			
Share-based payments contribution		(1.8)	(1.8)
Non current trade and receivables (increase)/decrease		(3.9)	2.5
Dividend paid		(60.0)	(71.0)
Net cash outflow from financing activities		(65.7)	(70.3)
Increase in cash and cash equivalents		30.5	6.5
Cash and cash equivalents at 1 January		304.8	298.3
Cash and cash equivalents at 31 December		335.4	304.8
Cash and cash equivalents at 31 December comprise:			
Cash at bank and in hand		335.4	304.8
Investments in secured short term deposits		0	0
	13	335.4	304.8

The notes on pages 9 to 57 form an integral part of these financial statements.

LCH SA

STATEMENT OF CHANGES IN EQUITY

Year ended 31 December 2021

	Called up share capital	Share premium	Other capital reserves	Retained earnings	Total equity
	€m	€m	€m	€m	€m
1 January 2020	113.1	0.7	42.4	197.1	353.2
Profit for the year	-	-	-	88.5	88.5
Other comprehensive income	-	-	(0.2)	0.5	(0.4)
Total comprehensive income	-	-	(0.2)	89.1	88.9
Dividends paid	-	-	-	(71.0)	(71.0)
IFRS 16	-	-	-	-	-
Share-based payment contribution	-	-	-	1.8	1.8
Share-based payment expense	-	-	-	(1.8)	(1.8)
31 December 2020	113.1	0.7	42.2	215.1	371.1
Profit for the year	-	-	-	112.7	112.7
Other comprehensive income	-	-	0.7	(0.5)	0.2
Total comprehensive income	-	-	0.7	112.2	113.0
Dividends paid	-	-	-	(60.0)	(60.0)
Share-based payment contribution	-	-	-	1.8	1.8
Share-based payment expense	-	-	-	(1.8)	(1.8)
31 December 2021	113.1	0.7	42.9	267.4	424.1

The notes on pages 9 to 57 form an integral part of these financial statements.

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NOTES TO THE FINANCIAL STATEMENTS

Year ended 31 December 2021

1. Basis of preparation and accounting policies

Basis of preparation

These financial statements have been prepared in accordance with International Financial Reporting Standards and International Accounting Standards as issued by the International Accounting Standards Board (IASB) and Interpretations issued by the IFRS Interpretations Committee (IFRIC) (collectively IFRSs), effective for 2021 reporting and endorsed by the European Union (“EU”), and have been prepared for the purpose of reporting to both American regulators CFTC and SEC as part of the registration of LCH SA on CDS business clearing activity.

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

The financial statements have been prepared under the historical cost convention as modified by the revaluation of assets and liabilities held at fair value and on the basis of the Company’s accounting policies.

The Company uses a columnar format for the presentation of its income statement. This provides the reader with supplemental data relating to the financial condition and results of operations. The Company presents profit for the year before any non-underlying items as this highlights more clearly trends in the Company’s business and gives an indication of its ongoing sustainable performance. Items of income and expense that are material by their size and/or nature are not considered to be incurred in the normal course of business and are classified as non-underlying items on the face of the income statement within their relevant category. Profit before non-underlying items is reconciled to profit before taxation on the face of the income statement.

The Company is a *société anonyme* (SA), incorporated and domiciled in France. The address of its registered office is 18, rue du Quatre Septembre 75002 Paris.

Principal activities

The Company continues to satisfy the requirements of the Autorité de Contrôle Prudentiel et de Résolution as a Recognised Clearing House in France, and the requirements of all other regulatory bodies to whose rules the Company is subject. LCH SA is especially authorised as a central counterparty (“CCP”) to offer services and activities in the EU in accordance with the European Markets Infrastructure Regulation (“EMIR”). It provides central counterparty services in respect of a broad range of cash and derivative products traded on platforms or in OTC markets in Europe.

COVID-19

The ongoing impact of COVID-19 on the Company has been considered in the preparation of these financial statements. The directors have reviewed liquidity and profit and loss forecasts, regulatory capital, and critical accounting estimates and judgements for the Company. The directors have also considered sensitivities including any potential impairments as a result of changes in cashflow forecasts. At the reporting date, no material short-term impacts have crystallised and the Company remains confident about its long-term future performance but remains vigilant in monitoring day-to-day changes as the global situation evolves. Staff and customer safety remain the paramount concerns of the Company and it has adapted successfully to the new ways of working.

Going concern

After making enquiries and assessing the risks associated with the COVID-19 pandemic and its impact so far, the directors have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. For this reason, they continue to adopt the going concern basis in preparing these financial statements. The financial risk management objectives and policies of the Company and the exposure to risk are discussed in note 2.

Presentation currency

LCH SA

NOTES TO THE FINANCIAL STATEMENTS

Year ended 31 December 2021

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 IFRS 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.

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.

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 and impairment of intangible assets: intangible assets are assessed when an indication of impairment arises. This requires the estimation of future cashflows and choosing a suitable discount rate (see note 7). Management assessment of future cashflows takes into account the potential effects of the Euronext strategic priority to directly manage its clearing activities as stated in the Euronext press release issued on November 8, 2021.
- 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 16);
- 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 group, should these estimates prove to be inaccurate.

Recent accounting developments

The following amendments have been endorsed by the EU and adopted in these financial statements:

- Amendments to IFRS 4 Insurance Contracts – deferral of IFRS 9
- Amendments to IFRS 7 Financial Instruments: Disclosures, IFRS 9 Financial Instruments and IAS 39 Financial Instruments: Recognition and Measurement: Interest Rate Benchmark Reform – Phase 2
- IFRS 4 Insurance Contracts and IFRS 16 Lease

The adoption of these amendments did not have a material impact on the results of the Company.

The following standards and interpretations have been issued by IASB and IFRIC, but have not been adopted because they are not yet mandatory and the Company has not chosen to early adopt. The Company plans to adopt these standards and interpretations when they become effective. The impact on the Company's financial statements of the future standards, amendments and interpretations is still under review, and where appropriate, a description of the impact of certain standards and amendments is provided below:

LCH SA

NOTES TO THE FINANCIAL STATEMENTS

Year ended 31 December 2021

International accounting standards and interpretations	Effective date
Amendments to IAS 1 Presentation of Financial Statements classification of liabilities	1 January 2023
Amendments to IFRS 3, IAS 16 and IAS 37 and Annual Improvements 2018-2020	1 January 2022
Amendments to IAS 12	1 January 2023
Amendment to IAS 8 – Definition of Accounting Estimates	1 January 2022

The above amendments and standards are not expected to have a material impact on the results of the Company.

Accounting policies

Income Statement

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.

In the statement of cashflows, cashflows denominated in foreign currencies are translated into the functional currency of the Company at the average exchange rate for the year or at the rate prevailing at the time of the transaction where more appropriate.

Finance income and expense

Finance income and expense comprise interest earned on cash deposited with financial counterparties and interest paid on borrowings which reflect the agreed market-based or contractual rate for each transaction undertaken during the financial period and calculated using the effective interest rate method. In conditions where negative interest rates apply, the Company recognises interest paid on cash deposits as an expense and interest received on liabilities as income.

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.

LCH SA

NOTES TO THE FINANCIAL STATEMENTS

Year ended 31 December 2021

Deferred and current tax assets and liabilities are only offset when they arise in the same reporting tax group and where there is both a legal right of offset and the intention to settle on a net basis or to realise the asset and settle the liability simultaneously.

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 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, recognised in "other fees income", 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.

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.

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.

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

Since 1 January 2019 part of the revenue share paid to Euronext is classified as cost of sales.

LCH SA

NOTES TO THE FINANCIAL STATEMENTS

Year ended 31 December 2021

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 has committed to assume obligations in respect of:

- Defined benefit pension scheme for Porto; and
- Defined benefit schemes for Paris.

A full actuarial valuation of these funds was carried out at 31 December 2021 by a qualified independent actuary, MERCER. Major assumptions used by the actuary are included within note 16.

The cost of providing benefits under the defined benefit plans is determined using the projected unit method, which attributes entitlement to benefits to the current period (to determine current service cost) and to the current and prior periods (to determine the present value of defined benefit obligations) 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 is calculated by applying the discount rate to the net defined benefit liability or asset at the start of each annual reporting period.

Actuarial gains and losses are recognised in the statement of other 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, LSEG. The charge to the income statement is determined by the fair value of the options granted or shares awarded at the date of the 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.

LCH SA

NOTES TO THE FINANCIAL STATEMENTS

Year ended 31 December 2021

Statement of Financial Position

Intangible assets

Intangible assets other than non-amortisable intangible assets are initially recognised at cost and are capitalised on the statement of financial position. 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. The useful economic lives are based on management's best estimates such as attrition rates on customer relationships, product upgrade cycles for software and technology assets, market participant perspective for brands and pace of change of regulation for business.

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 5 years, occasionally it will be longer if applicable.

Other non-amortisable assets

Other non-amortisable assets arising on an acquisition are measured at the fair value of consideration less the fair value of the net assets acquired. Other non-amortisable assets are capitalised in the statement of financial position within intangible assets. Following initial recognition other non-amortisable assets are measured at initial value less any accumulated impairment losses.

Property, plant and equipment

Property, plant and equipment are initially recognised at cost and capitalised in the statement of financial position and are 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 10 years);
- computer equipment over 3-5 years;
- Software over 5 years;
- office equipment and other fixed assets over 3-5 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 intangible assets and property, plant and equipment

Other non-amortizable assets 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 fixed asset may not be fully recoverable.

For the purpose of impairment testing, assets are allocated to cash generating units ("CGU") monitored by management, usually at statutory company level. The impairment review involves a comparison of the carrying amount of the non-

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amortisable intangible assets 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 cashflows 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 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 non-amortisable intangible assets allocated to a CGU is taken into account when determining the gain or loss on disposal of the unit.

Financial instruments

Financial assets and liabilities are initially recognised on their settlement date. 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 cashflows generated are 'solely payments of principal and interest' ("SPPI").

Initial recognition:

- a) Financial assets at amortised cost are financial assets that are held in order to collect the contractual cashflows and the contractual terms give rise to cashflows that are solely payments of principal and interest. This includes the Company's cash and cash equivalents and trade and other receivables. Other receivables from clearing members of the CCP businesses also fall within this category.
- b) Financial assets at FVOCI are assets where the objective is achieved by both collecting the contractual cashflows or selling the asset. The contractual cashflows received are SPPI. This category includes investments in financial assets and quoted debt instruments (predominantly government bonds) held by the CCP, which are used under the business model to both collect the contractual cashflows and also to sell; the irrevocable election has been made to classify them at FVOCI. 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.
- c) Financial assets at FVPL include all other financial assets not classified as amortised cost or FVOCI. This category includes CCP businesses' clearing member trading balances comprising repos, derivatives, equity and debt instruments that are marked to market on a daily basis.
- d) 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 Company's trade and other payables, borrowings and other payables to clearing members.
- e) Financial liabilities at 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.

Subsequent measurement

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 cashflows due and the expected cashflows. The difference is discounted at the asset's original effective interest rate and recognised as an allowance against the original value of the asset. ECL is determined by the combination of :

- PD : the company applies the internal rating score (ICS) which is challenged with ratings provided by external agencies. Our internal model are subject to EMIR college and ECB reviews;
- LGD : the company take the conservative approach by applying 100% to all.

Financial assets at amortised cost – the ECL for financial assets held at amortised cost 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.

The ECL on other financial assets held at amortised cost is measured using the general approach. An allowance is calculated based on the 12-month ECL at each reporting date unless there is a significant increase in the financial instrument's credit risk, at which point a loss allowance based on the lifetime ECL is calculated, as described for FVOCI assets.

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. Equity instruments are revalued on a regular basis and impaired if necessary.

Financial assets at FVPL – no ECL is calculated for assets held at FVPL as any expected loss is already recognised in the fair value.

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 cashflow analysis and other valuation techniques commonly used by market participants. Where discounted cashflow analysis and other valuation techniques are used assumptions are validated against market observable inputs.

Investments in equity instruments

Investments in equity instruments that do not give the Company control or significant influence of an entity, but are held for long-term benefit are classified as FVOCI. Dividend income received is recognised directly in profit or loss.

Trade and other receivables

Trade receivables are initially recognised at fair value and subsequently at amortised cost, less expected credit loss. The Company's approach to calculating expected credit loss allowances is described in the financial instruments policy. Other receivables are initially recognised at fair value and subsequently at amortised cost, less any loss allowance as described above.

Cash and cash equivalents

Cash and cash equivalents comprise 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).

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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).

Fair value measurement

The Company measures financial instruments 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 are 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 17.

For assets and liabilities that are recognised at fair value 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 the fair value hierarchy as explained above.

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 de-recognition 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.

Provisions

A provision is recognised where there is a present obligation, whether legal or constructive, as a result of a past event for which it is probable that a transfer of economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

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The amount recognised as a provision is the present value of the best estimate of the expenditure required to settle the present obligation at the end of the reporting period, i.e. the present value of the amount that the Company would rationally pay to settle the obligation at the balance sheet date or to transfer it to a third party.

Property provisions represent the present value of the Company's estimate of the cost of fulfilling lease obligations for dilapidations on its right-of-use assets.

All provisions are discounted where the time value of money is considered material. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance expense.

Leases

The Company is a lessee of assets. Right-of-use assets are disclosed within property, plant and equipment (note 9) and intangible assets (note 7). The Company recognises a right-of-use asset where it has control of an asset for a period of more than 12 months. Assets are recorded initially at cost and depreciated on a straight-line basis over the shorter of the lease term or the estimated useful economic life. Cost is defined as the lease liabilities recognised plus any initial costs and dilapidations provisions less any lease incentives received. The lease term is the non-cancellable term plus any optional extensions or less any reductions due to break clauses that in the judgement of management are likely to be exercised.

The Company has applied discount rates specific to the country and entity for all leases of property and other assets. The interest rate is based on the expected rate at which the entity could borrow the required funds. In some cases, these rates may be negative.

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

Where a lease is terminated early, this is recognised as a disposal and any difference in value between the asset and the liability is recognised as a profit or loss on disposal. Penalty fees payable are recognised directly in profit or loss as an operating expense.

Lease liabilities are recognised at the net present value of the future payments to be made over the lease term at the commencement of a lease. Where a lease includes a break clause or extension option, management use their best estimate on the likely outcome on a lease by lease basis. Variable lease payments based on an index are estimated at the commencement date and revalued on an annual basis. The net present value is determined using the incremental borrowing rate of the leasing entity, unless there is a rate implicit within the lease agreement.

Lease payments due within the next 12 months are classified as current liabilities; payments due after 12 months are classified as non-current payables.

Short-term leases and leases of low value assets

Rental costs for leased assets that are for less than 12 months or are for assets with an individual value of less than €5,000 are recognised directly in profit or loss on a straight-line basis over the life of the lease.

Equity and related items

Share capital

Called up share capital comprises ordinary shares. Other capital reserves are described in note 20. Other instruments are classified as liabilities if there is an obligation to transfer economic benefits and if not they are included in Shareholders' 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

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the difference between the issue proceeds of shares and their nominal value.

Dividend distributions

Dividend distributions to the Company's equity holders are recognised as a liability in the financial statements in the period in which the dividends are approved by the Company's shareholders. Dividends shall be paid in the six months following the Company shareholder's.

Rating

LCH SA's rating has been confirmed by Standard and Poor's in January 2021 at AA- grade.

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2. Risk management

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 1st line of defence and by the Company risk management team forming the 2nd 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 board. 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 CCPs run 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.

SA has implemented a segregated default waterfall per market which is composed of the following layers:

- Margins and default fund contributions of the defaulting member
- CCP Skin-in-the-Game ("SITG")
- Default fund of the survival members
- Non prefunded resources (e.g. assessment, voluntary payment, service continuity)

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.

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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 CCPs accept both cash in Euros 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.

	2021	2020
	€bn	€bn
Total collateral held		
Margin received in cash	31.4	31.6
Margin received in non-cash securities	23.8	21.9
Guarantees	2.4	3.0
Total margin liability	57.6	56.6

The maximum margin liability during the year was €61.9 billion (2020: €62.0 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 operating business lines 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 business line pre-funded default funds are segregated by clearing service and sized to be sufficient at all times to cover the default of the 2 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 2021 the total of clearing member contributions to the default funds amounted to €5.7 billion (2020: €5.8 billion) (note 15). The maximum amount during the year was €6.4 billion (2020: €6.3 billion). Clearing members are committed to contribute further amounts in the event of a clearing member default equivalent to approximately twice this amount.

Under EMIR, the amount of own capital a CCP must contribute to the default waterfall is at least 25% of its regulatory capital requirements. This layer of CCP capital is known as the Skin-in-the-Game ("SITG"). Note that the regulatory capital requirement is at a low level due to very low market and credit risk capital requirements which are driven by CaLM strategy to deposit all the cash at the Banque De France. This leads to a reduction in SITG, despite the business expansion and the increase in revenues.

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.

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Wrong Way Risk

Risk description

This is the risk that a member's portfolio is highly correlated to the country of domicile, or that the assets and liabilities in the member's portfolio are highly correlated. The consequence is that both assets can lose value at the same time (in the same event) as liabilities can increase in value, so that the exposure to the Clearing House can potentially be magnified in certain stress events.

Risk management approach

The WWR for the cleared portfolios is addressed through additional margins or concentration limits for non-cash collateral.

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 incomes 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. However, additional haircut (credit risk add-on) is assessed on collateral issued by sovereigns with an ICS of 5 or worse, considering various benchmarking quantitative indicators as well as a qualitative assessment.

The Company has investments in the following Sovereigns (or equivalent issuer) as at 31 December 2021:

Sovereign (or equivalent)	2021	Proportion of portfolio	2020	Proportion of portfolio
	Investment value € billion		Investment value € billion	
France	33.4	99.6%	28.6	98%
European Union	0.0	0.1%	0.4	1%
Belgium	0.1	0.1%	0.1	0.5%
Germany	0.1	0.2%	-	0%
Netherlands	-	0.0%	0.1	0.5%
Finland	-	0.0%	0.1	0%
Other	-	0.0%	-	0%
Total	33.6	100%	29.3	100%

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The above total includes all other financial assets of €558.8 million (2020: €1,531.4 million), own cash of €335.4 million (2020: €304.8 million) along with central bank cash deposits of €32,763.8 million (2020: €27,379.7 million).

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 2 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 investment portfolio at 31 December 2021 was €33.6 billion (2020: €29.3 billion), of which 98.33% (2020: 99.68%) was invested securely with an overall average maturity of 5 day (2020: 8 day). The maximum portfolio size during the year was €33.6 billion (2020: €39.1 billion). Note 17 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.

The Company currently interoperates with several other CCPs in Europe for cash cleared products. Interoperability with another CCP poses risks similar to the risks to which the Company is exposed with its clearing members. Credit risk is managed according to the same credit assessment framework applied to clearing members and other counterparties. To cover the latent market risk arising on interoperating exposures, all interoperating CCPs are subject to daily margining. Under European regulations, CCPs are not permitted to contribute to another CCP's default fund but equivalent margin add-ons are applied to interoperating exposures which ensure full protection is pre-funded at all times.

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As at 31 December 2021 the total interoperating margin placed with and received under reciprocal arrangements with other CCPs amounted to €4.1 billion and €5.1 billion (2020: €4.4 billion and €2.7 billion) respectively. 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 (Fitch) of the counterparties. The treasury portfolio includes cash at bank and other financial assets.

		31 December 2021	31 December 2020
Fair value of transactions with clearing members (ratings assigned with reference to major agencies)	Notes	€m	€m
Members rated AAA		2,049.7	2,037.1
AA+		-	-
AA		-	-
AA-		4,734.4	2,003.7
A+		182,206.5	187,177.7
A		223,373.3	217,350.5
A-		19,729.3	15,984.7
BBB+		7,149.9	26,699.8
BBB		15,995.0	4,916.4
Other, <BBB		3,794.3	393.7
Unrated		34,169.4	35,382.1
	11	493,201.8	491,945.7

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Company investment portfolio (ratings assigned with reference to major agencies)	€m	€m
AAA/AA+/AA- Government backed	33,609.7	29,263.7
AA/AA+/AAA Secured	-	-
AA/AA+/AAA Unsecured	-	-
AA-/A+/A/A-/BBB+ Secured	-	-
A/A+/AA- Unsecured	-	-
Total investment portfolio	33,609.7	29,263.7

The total credit risk of the Company is represented by the total financial assets of the Company as disclosed in note 17.

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 Company CCPs' 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 2021 was 2 % of the total investment to the French Government (2020: 3% to the French 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 CCPs from a narrow risk management perspective as well as from a macro-economic and regulatory perspective.

Risk management approach

The LCH CCPs 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.

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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 profit after tax and on retained earnings within shareholders' equity:

€m	2021			2020		
	+25bp	+50bp	+100bp	+25bp	+50bp	+100bp
Net exposure of cash and member margin balances	(0.7)	(1.5)	(3.0)	(1.4)	(2.8)	(5.6)
Tax effect of above	0.2	0.4	0.8	0.4	0.9	1.7
Decrease in profit after tax	(0.5)	(1.1)	(2.2)	(1.0)	(2.0)	(3.9)
	-25bp	-50bp	-100bp	-25bp	-50bp	-100bp
Net exposure of cash and member margin balances	0.7	1.5	3.0	1.4	2.8	5.6
Tax effect of above	(0.2)	(0.4)	(0.8)	(0.4)	(0.9)	(1.7)
Increase in profit after tax	0.5	1.1	2.2	1.0	2.0	3.9

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 cashflows 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 CCPs in the Company have sufficient cash to meet their payment obligations supported by facilities to meet short term imbalances between available cash and payment obligations. The CCPs maintain 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 2 clearing member companies with the largest liquidity requirements when additional liquidity will be required so that the CCPs can continue to meet their obligations to clearing members and other counterparties.

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The Company's liquidity management is subject to strict minimum liquidity targets set by senior executives within its Risk and Collateral & Liquidity Management ("CaLM") departments. These targets are reviewed regularly and reported to the risk committees and boards. On a day-to-day basis, CaLM is tasked with ensuring that each Company CCP 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 1 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 cashflows.

	On demand €m	Less than 3 months €m	3 months to 1 year €m	1 to 5 years €m	More than 5 years €m	Total €m
As at 31 December 2021						
Transactions with clearing members	(70.4)	(485,801.0)	(6,771.3)	(559.1)	-	(493,201.8)
Initial margin and other clearing member balances	(32,484.9)	(1,759.9)	-	-	-	(34,244.8)
Default funds	(5,769.9)	-	-	-	-	(5,763.9)
Trade and other payables	-	(69.9)	-	-	-	(69.9)
	On demand €m	Less than 3 months €m	3 months to 1 year €m	1 to 5 years €m	More than 5 years €m	Total €m
As at 31 December 2020						
Transactions with clearing members	(88.0)	(476,727.9)	(15,129.7)	-	-	(491,945.7)
Initial margin and other clearing member balances	(29,194.7)	(3,221.2)	-	-	-	(32,415.9)
Default funds	(5,835.5)	-	-	-	-	(5,835.5)
Trade and other payables	-	(69.1)	-	-	-	(69.1)

For the default funds, the tenor of the liability is matched with the interest dates of the asset. The weighted average maturity of the total treasury portfolio is 5 days (2020: 8 days), with strict risk criteria related to interest rate exposure being applied.

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

Investment risk

Risk description

This is the risk arising from the investment of member collateral to manage daily liquidity needs, either through outright investments, cash deposits or the repo markets.

Risk management approach

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The investment risk brings two types of risks: (i) treasury credit risk (sovereign default or investment counterparty default) and (ii) treasury market risk. SA's investment portfolio is invested in accordance with the Investment Risk Policy which requires secure investment of a significant portion of the portfolio either via reverse repurchase agreements with credit and financial institutions, receiving high quality, liquid 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 be subject to a haircut on their market values. In addition, the weighted average maturity of the portfolio must not exceed two years. While cash may be deposited on an unsecured basis, this can only be short term with high quality banking institutions and limited to an average of 5% and a maximum of 10% of all credit institution investments. Under the Investment Risk Policy, strict limits are applied with respect to investment and counterparty type, as well as to counterparty and issuer concentrations. The direct concentration risks arising from Treasury's investment activities is capped through conservatively set counterparty limits and concentration limits. Breaches are addressed immediately via reallocation of the Treasury investment portfolio. The Treasury unit is responsible for managing the cash and liquidity posted to the CCP, and in doing so the CCP is exposed to Credit Risk.

Settlement risk

Risk description

Settlement risk is the risk that the Company makes a payment or delivery without simultaneously receiving the delivery or payment from the counterparty.

Risk management approach

The Company materially mitigates this risk through the use of guaranteed and irrevocable delivery versus payment mechanisms where available.

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 2 years. The counterparty credit scores are derived from the framework described under credit risk above.

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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 20. 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 under EMIR and a specific add-on for CDS business to €20 million;
- the Company can manage its capital structure by varying returns to its shareholder, issuing new shares or increasing or reducing borrowings.

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. Operational risks are quantified using a Risk Appetite matrix that reflects the frequency and impact of an event.

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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

Pension risk

Pension risk arises from the potential deficit in the Company's defined benefit pension plans due to a number of factors such as mortality rates or changes in inflation assumptions. The schemes are exposed to inflation, interest rate risks and changes in the life expectancy for members.

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 measurable), 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's exit from the EU left significant uncertainty concerning the political and regulatory environment, however LCH SA is allowed under the Bank of England Temporary Recognition Regime (TRR) to provide clearing services and activities in the UK for up to 3 years post 31 December 2020.

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 Comanaging these risks.

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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.

Technology risk

The risk of technology failures disrupting critical services provided by LCH. Such failures may be caused by insufficient capacity to meet transaction volumes, ineffective support and maintenance, or poorly managed change.

Business continuity risk

Adequate procedures, tools and facilities are in place to minimize disruption of critical business processes due to incidents affecting IT systems, people and premises.

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 risk

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

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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. Clearing fees

		Paris	Amsterdam	Brussels	Lisbon	Oslo	Total
31 December 2021		€m	€m	€m	€m	€m	€m
Clearing Fee	Cash Equities	21.6	3.2	1.0	-	-	25.8
	Listed Derivatives	35.9	10.7	0.2	-	0.4	47.2
	CDSClear	1.5	-	-	-	-	1.5
	Fixed income	80.8	3.7	5.6	1.5	-	91.6
	EUROGC	0.5	-	-	-	-	0.5
Clearing service	Listed Derivatives	0.2	-	-	-	-	0.2
Membership Fee	Cash Equities	3.4	-	-	-	-	3.4
	Listed Derivatives	0.6	-	-	-	-	0.6
	CDSClear	15.3	-	-	-	-	15.3
Periodic Fee	Cash Equities	0.1	-	-	-	-	0.1
	CDSClear	0.6	-	-	-	-	0.6
		160.5	17.6	6.8	1.5	0.4	186.8

On EquityClear, Cash Equity clearing revenue slightly decreased compared to previous year due to lower volatility on markets which is more than offset by higher clearing revenue on Listed Derivatives due to new volumes records on Commodities and additional clearing fees from Oslo (started in Dec-20)

CDSClear clearing revenue is made of 9 general unlimited members paying an annual membership fee of €1.3m, 2 select members an annual membership fee of €0.25m, 1 select member an annual membership fee of €0.45m, 2 introductory members an annual membership fee of €0.2m, 2 introductory members an annual membership fee of €0.4m and 7 CIO members.

RepoClear clearing revenue strongly increased in 2021 mainly driven by market growth, market activity, membership extension and further diversification of the pool (new bonds and products), leading to record nominal and trade sides cleared in 2021. Italian and French debts generated more than half of the RepoClear clearing revenue in 2021.

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31 December 2020		Paris €m	Amsterdam €m	Brussels €m	Lisbon €m	Total €m
Clearing Fee	Cash Equities	21.4	4.4	1.1	-	27.0
	Listed Derivatives	33.1	11.6	0.3	-	45.0
	CDSClear	0.9	-	-	-	0.9
	EUROGC	0.2	-	-	-	0.2
	Fixed Income	70.7	-	-	-	70.7
Clearing service	Listed Derivatives	0.3	-	-	-	0.3
Membership Fee	Cash Equities	3.5	-	-	-	3.5
	Listed Derivatives	0.6	-	-	-	0.6
	CDSClear	16.3	-	-	-	16.3
Periodic Fee	Cash Equities	0.1	-	-	-	0.1
	CDSClear	0.4	-	-	-	0.4
		147.7	16.0	1.4	-	165.1

4. Operating expenses

	Year ended 31 December 2021	Year ended 31 December 2020
	€m	€m
Employee costs (note 17)	55.0	49.3
Depreciation and amortisation	19.0	15.0
Property costs	1.0	1.2
IT costs	22.7	21.8
Professional fees	3.2	3.0
Other costs	10.0	9.2
Operating expenses	110.9	99.6
Depreciation and amortisation		
Amortisation of intangible assets	14.4	12.2
Depreciation of property, plant and equipment	3.4	2.9
Impairment - intangible assets	1.2	-
Impairment - tangible assets	0.1	-
Depreciation, amortization and impairment	19.0	15.0
Other operating expenditure includes		
Property lease rentals	0.6	0.5
Auditors' remuneration		
Fees payable for the audit of the Company	0.5	0.5
Fees payable for the audit of the Company's subsidiaries	-	-
Other assurance services on behalf of the Company's subsidiaries	-	-
Audit fees	0.5	0.5

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5. Finance income and expense

	Year ended 31 December 2021	Year ended 31 December 2020
	€m	€m
Dividends received	-	-
Interest received on own funds	-	-
Finance income	-	-
Bank and finance interest	(1.7)	(1.6)
Net finance expense on pension assets	(0.0)	(0.0)
Lease interest expense	(0.1)	0.0
Finance expense	(1.8)	(1.6)
Net finance income/(expense)	(1.8)	(1.6)

6. Taxation

The Company recognises liabilities for the estimated tax charge at the year end. Where the final tax liability is different from that estimate, such differences are reflected in the period in which such determination is made. Income tax provisions are recognised on the basis that the relevant tax authorities are fully aware of any situations giving rise to uncertainty.

A multi-lateral transfer pricing agreement signed by representatives of the French, Belgian, and Dutch tax authorities has been in effect since 1 January 2004 and has been renewed on April 2014 until 31 December 2015. This agreement allowed the distribution of the earnings that are jointly generated by LCH SA, which has its registered office in Paris, and by its Dutch and Belgian branches. Belgian branch was closed in 2020. Since 2016, no further agreements have been reviewed and signed with the respective tax authorities. However, the Company continues to apply the same profit-sharing methodologies approved with the last agreement for Dutch branch.

LCH SA's Portuguese branch is not considered as a permanent establishment for Portuguese corporate tax purposes, and its assets and operations are therefore assimilated with those of its parent company, a French tax resident. LCH SA therefore records no corporate tax charge payable to the Portuguese tax authorities.

The standard corporate tax rate is 27.5% in France, 25% in the Netherlands.

The major components of taxation are as follows:

	Year ended 31 December 2021	Year ended 31 December 2020
	€m	€m
Current tax		
France current tax charge	(37.6)	(33.9)
Adjustments in respect of current taxation in previous years	-	-
Other European locations current tax charge	(6.4)	(6.4)
Adjustments in respect of current taxation in previous years	0.3	-
Total Current taxation	(43.7)	(40.4)

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	Year ended 31 December 2021	Year ended 31 December 2020
	€m	€m
Deferred tax		
Relating to the origination and reversal of temporary differences	0.0	0.2
Effect of future rate changes	-	-
Adjustment in respect of previous years	-	-
Total Deferred tax	0.0	0.2
Tax income/(expense) reported in the income statement	(43.7)	(40.2)
Statement of comprehensive income		
Tax relating to remeasurement gains on French defined benefit plans	(0.2)	0.2
Tax relating to remeasurement (gains)/losses on other European defined benefit plans	-	-
Tax income/(expense) reported in the statement of comprehensive income	(0.2)	0.2

Deferred tax	Statement of financial position		Income statement/OCI	
	2021	2020	2021	2020
	€m	€m	€m	€m
Post-employment benefits	1.1	0.9	0.2	0.1
Deferred compensation	2.8	2.7	0.1	0.2
Tax on provisions and other temporary differences	1.3	1.8	(0.5)	(0.1)
Deferred tax charge			(0.2)	0.2
Deferred tax asset/(liability)	5.2	5.4		

	2021 €m	2020 €m
Net deferred tax asset at 1 January	5.4	5.2
Deferred tax in income statement	0.0	0.2
Deferred tax relating to remeasurement gains/(losses) on defined benefit pension plans	(0.2)	0.0
Net deferred tax asset/(liability) at 31 December	5.2	5.4

clear income tax payable is the net between the current tax due to tax authorities and the pre-payments settled along the year. The amount was €16.1 million in 2021.

	2021 €m	2020 €m
Reconciliation of tax credit/(charge)		
Accounting profit before taxation	156.5	128.7
Tax at French statutory corporation tax rate of 27,5% (2020: 31%)	(43.1)	(39.9)
Disallowed expenses and non-taxable income	(0.1)	(0.1)
Adjustments in respect of prior periods	-	-
Net effect of different tax rates of other European locations	(0.5)	0.4
Other	0.0	(0.6)
Taxation	(43.7)	(40.2)
Effective corporation tax rate	27.9%	31.2%

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7. Intangible assets

	31 December 2021			31 December 2020		
	Self-developed software	Other intangible assets	Total	Self-developed software	Other intangible assets	Total
	€m	€m	€m	€m	€m	€m
Cost at 1 January	175.7	52.7	228.4	153.0	52.7	205.7
Additions	32.5	-	32.5	22.7	-	22.7
Disposals	-	-	-	-	-	-
Asset transfer	-	-	-	-	-	-
At 31 December	208.2	52.7	260.9	175.7	52.7	228.4
Accumulated amortisation at 1 January	101.0	43.6	144.7	88.8	43.6	132.5
Amortisation charge for the year	14.4	-	14.4	12.2	-	12.2
Disposals	-	-	-	-	-	-
Impairment of intangible asset	1.2	-	1.2	-	-	-
Asset transfer	-	-	-	-	-	-
At 31 December	116.6	43.6	160.3	101.0	43.6	144.7
Net book value at 31 December	91.6	9.0	100.6	74.7	9.0	83.7

The portion of capitalised self-developed software costs disclosed above that relates to software not currently brought into use amounted to €41.4 million (2020: €38.9 million). Following IAS 36 requirements, management reviewed intangible assets to be held and used for impairment. The impairment of €1.2million is the portion of the work performed on the MRisk module which will finally not be used (Group's choice to use MLM)

In the group policy, if an asset is disposed without selling to a third party, it should be impaired to nil book value, and then the cost and accumulated amortisation disposed of. Thus, the cost is recognised in the amortisation line and there is a nil loss on disposal.

Where an asset is disposed of to a 3rd party in exchange for cash, it should remain as a profit/loss on disposal.

Other intangible assets amounting to €9.0 million consist of non-amortizable assets resulting from the merger of the Company's branches into LCH SA as initial book value: €43.6 million for the Amsterdam branch, €6.5 million for the Porto branch and €2.6 million for the Brussels branch. Those intangibles have been impaired over the past years respectively of €35.8 million for the Amsterdam branch, €6.5 million for the Porto branch and €1.3 million for the Brussels branch.

8. 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 cashflow projections.

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Assumptions

The key assumptions used in the valuations relate to discounted cashflow projections prepared by management covering a 5-year period. The cashflow projections are based on the Company's budget for 2022 and the Company approved plan for the 2 financial years following the last financial year in the budget. Cashflows 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 cash generating unit ("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:

- The values assigned to short and medium term revenue and cost growth are based on the 2022 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;
- Long-term growth rates of 5,5% (2020: 2.3%) represent management's internal forecasts based on external estimates of GDP and inflation;
- The pre-tax discount rate of 10.59% (2020: 10.78%) 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

Having completed the tests as described above, no assets required to be impaired by (2020: €0 million).

Sensitivity analysis

Reasonably possible changes in key assumptions and rates are detailed below and the likely impact on the value in use or impairment noted:

	Base case	Adjusted	Other non-amortisable intangible assets
At 31 December 2021			€m
Reduction in clearing revenues	various	-10.0%	No impairment
Long-term cashflow growth	5.5%	0.0%	No impairment
Pre-tax discount rate	10.59%	14.1%	No impairment

Other non-amortisable intangible assets

	Base case	Adjusted	Increase in impairment
At 31 December 2021			€m
Reduction in clearing revenues	various	-10.0%	-
Cashflow growth beyond the 5-year	5.5%	0.0%	-
Pre-tax discount rate	10.59%	14.1%	-

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9. Property, plant and equipment

	Right of use assets - property €m	Right of use assets - other €m	Leasehold refurbishm ent €m	Computer equipment €m	Office equipment €m	Total €m
At 31 December 2021						
Cost at 1 January	15.7	0.4	2.5	4.2	2.9	25.7
Asset transfer	-	-	-	-	-	-
Adjustment and adoption of new standard	-	-	-	-	-	-
Additions	-	-	0.6	0.9	(0.6)	0.9
Disposals	-	(0.1)	(2.3)	(4.1)	(0.7)	(7.2)
At 31 December	15.7	0.3	0.8	1.0	1.6	19.4
Accumulated depreciation at 1 January	5.2	0.2	2.2	4.1	1.5	13.3
Depreciation charge for the year	3.0	0.0	0.2	0.1	0.0	3.4
Impairment	-	-	-	-	-	-
Disposals	-	-	(2.3)	(4.1)	(0.7)	(7.1)
At 31 December	8.3	0.2	0.1	0.1	0.8	9.5
Net book value at 31 December 2021	7.4	0.1	0.7	0.9	0.8	9.9

	Right of use assets - property €m	Right of use assets - other €m	Leasehold refurbishm ent €m	Computer equipment €m	Office equipment €m	Total €m
At 31 December 2020						
Cost at 1 January	13.7	0.3	2.6	4.2	2.4	23.2
Asset transfer	-	-	-	-	-	-
Adjustment and adoption of new standard	1.9	0.1	-	-	-	2.0
Additions	-	-	0.0	0.0	0.6	0.6
Disposals	-	-	(0.0)	(0.1)	(0.0)	(0.2)
At 31 December	15.7	0.4	2.5	4.2	2.9	25.7
Accumulated depreciation at 1 January	2.6	0.1	2.2	4.1	1.5	10.6
Depreciation charge for the year	2.6	0.1	0.0	0.0	0.0	2.8
Impairment	-	-	-	-	-	-
Disposals	-	-	(0.0)	-	(0.0)	(0.1)
At 31 December	5.2	0.2	2.2	4.1	1.5	13.3
Net book value at 31 December 2020	10.4	0.2	0.3	0.0	1.4	12.4

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10. Financial assets at FVOCI - equity

	2021	2020
	€m	€m
Cost at 1 January	0.5	0.5
Acquisition	0.2	-
Cost at 31 December	0.7	0.5

The securities held in financial assets at FVOCI-equity amount to 0.5 million. All OSEO shares have been sold to BPI for a non-significant amount.

11. Balances with clearing members

	31 December	31 December
	2021	2020
	€m	€m
Assets		
Fair value of transactions with clearing members	493,201.8	491,945.7
Other clearing member balances	6,727.7	9,378.9
	499,929.6	501,324.6
Liabilities		
Fair value of transactions with clearing members	(493,201.8)	(491,945.7)
Initial margin and other clearing member balances	(34,244.8)	(32,415.9)
	(527,446.7)	(524,361.6)

The balances due from clearing members recorded in the statement of financial position of €493,201.8million (2020: €491,945.7million) are fully secured by collateral held by the Company.

At 31 December 2021 the total of fully collateralized loans in respect of Fixed Income transactions was €493,131.4 million (2020: €491,857.6 million). The collateral has in turn been passed on to fixed income counterparties to secure the Company's liabilities in respect of Repos contracts. CDS and Listed Derivatives – Equities and commodities futures – were respectively worth €15.0 million (2020: €17.2 million) and €55.4 million (2020: €70.9 million). These represent overnight variation margins that are passed through between counterparties on asset side to ones on sell side.

The total net amount of non-cash collateral not recognized on the balance sheet, including that in respect of initial margin, was €23,795.8 million (2020: €21,937.8 million) and the total amount of guarantees held was €2,371.9 million (2020: €3,040.7 million). To date this collateral has not been utilized.

Balances with clearing members include €4,107.9 million (2020: €4,380.9 million) due from and €5,092.1 million (2020: €2,657.7 million) due to Cassa di Compensazione Garanzia S.p.A (CC&G), a former fellow LSEG subsidiary company which has been sold to Euronext in 2021.

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This also include the balance for collateral basket repos for €1,759.9 million (2020: €3,221.2 million) which are valued at amortized cost and are also fully secured by collateral held by the Company.

12. Trade and other receivables

	31 December 2021	31 December 2020
	€m	€m
Non-current		
Deposits	0.4	0.3
Current		
Trade receivables	21.1	19.8
Other receivables	6.3	7.5
Prepayments	1.3	1.9
Amounts owed by parent companies	0.4	0.9
Total Current	29.0	30.1

Non-current assets include LCH's contribution to the Single Resolution Fund (increased in 2019 by €2.7 million further to over weighting of company risk profile) that that had been partially in July 2020.

13. Cash and cash equivalents

	31 December 2021	31 December 2020
	€m	€m
Cash at bank and in hand	335.4	304.8
Cash and cash equivalents	335.4	304.8
Clearing business cash at bank	32,763.8	27,379.7
Clearing business cash and cash equivalents	32,763.8	27,379.7
Total cash and cash equivalents	33,099.2	27,684.5

Cash and cash equivalents are held with authorised counterparties of a high credit standing. Cash is held in unsecured interest bearing current and call accounts, short-term deposits and AAA-rated money market funds throughout the group. Short-term deposits within the CCP businesses are in overnight or short-term secured investments (reverse repos). Management does not expect any losses from non-performance by counterparties holding cash and cash equivalents and there are no material differences between book and fair values. Cash and cash equivalents do not include amounts held by the CCPs on behalf of their clearing members.

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.

€42.5 million (2020: €34.9 million) of the cash at bank is restricted as the Company's own resources to be used as Skin in The Game in the default waterfall. This is allocated by default fund on a pro rata basis as follows at 31 December 2021: €20.0 million on

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CDS Clear, €10.4 million on Equity and Commodity Clear, €10.6 million on Repo Clear and €1.4 million on Euro GC+.

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

14. Trade and other payables

	31 December 2021	31 December 2020
	€m	€m
Non-current		
Employee benefits	6.9	7.3
Trade payables	5.6	9.1
Total non-current trade and other payables	12.5	16.4
Current		
Trade payables	21.6	19.8
Other taxation and social security	32.8	31.0
Amounts owed to parent	0.5	2.4
Amounts owed to companies under common control	5.6	4.4
Other payables	6.6	8.7
Lease liabilities	2.7	2.7
Total current trade and other payables	69.9	69.1

15. Default funds

The purpose of 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 2021 were €5,763.9 million (2020: €5,835.5 million).

16. Employee benefits

i) Staff costs

All staff and directors

	Year ended 31 December 2021	Year ended 31 December 2020
	€m	€m
Salaries and other benefits	37.3	34.0
Social security costs	13.9	13.3
Share-based compensation	1.8	1.8
Pension costs	0.4	0.4
Staff costs before non-underlying items	53.4	49.5
Staff costs included in non-underlying items	1.6	(0.2)

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Total staff costs	55.0	49.3
Average monthly number of staff employed	194	184

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

	Year ended 31 December 2021	Year ended 31 December 2020
	€m	€m
Remuneration and other short-term employee benefits	2.5	2.2
Deferred bonus and other long-term employee benefits	0.3	0.3
Share-based payment costs	1.6	1.1
Pension contributions	-	-
Compensation for loss of office	-	-
Aggregate emoluments of for key management personnel	4.4	3.6

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 consists of the executive director and certain senior staff who are regarded as running the business on a day-to-day basis.

Directors' remuneration

	Year ended 31 December 2021	Year ended 31 December 2020
	€m	€m
Remuneration	3.3	2.6

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 LSEG share option-based arrangements during the financial year:

- The LSEG Long Term Incentive Plan 2014 (LSEG LTIP)
- The LCH Group Long Term Incentive Plan (LCH LTIP)
- The LSEG SAYE Option Scheme and LSEG International Sharesave Plan (together SAYE schemes)
- 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

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(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) (40%) performance and adjusted basic earnings per share growth (EPS) (60%) over a 3-year period. The following targets applied to options granted in 2021:

EPS element (60%): Absolute growth over 3 years	TSR element (40%): Absolute growth over 3 years	Proportion of element that vests
More than 18% p.a.	Upper quartile ranking	100%
8% p.a.	Medium ranking	25%*
Less than 8% p.a.	Less than medium ranking	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 3 years:

- 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 earnings before interest, tax, depreciation and amortisation (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 3-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.

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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:

Efficiency metric: EBITDA margin level	Growth Metric: EBIT level	Percentage of shares that vest
<i>2017 award:</i>		
53% or more	€337 million or more	100%
48%	€306 million	62.5%
41%	€275 million	25%
Below 41%	Below €275 million	0%
<i>2018 award:</i>		
53% or more	€393 million or more	100%
50%	€357 million	62.5%
48%	€321 million	25%
Below 48%	Below €321 million	0%
<i>2019 award:</i>		
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.

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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
1 January 2021	28,928	46,435	16,164	£41.93
Granted in year	17,762	-	-	-
Net transfers	-	-	-	-
Exercised in year	(4,364)	(20,518)	(3,527)	£33.38
Lapsed/forfeited in year	(848)	(4,014)	(1,629)	£38.06
31 December 2021	41,478	21,903	11,008	£45.25

136 of the options were exercisable as at 31 December 2021 (2020: 1,815). 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 £77.96 (2020: £81.75). 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 2021	Number outstanding	Weighted average remaining contractual life Years
LSEG LTIPs - nil	41,418	1.3
LCH LTIP - nil	21,903	0.3
SAYE – between £30.00 and £50.00	6,716	0.4
SAYE - over £50.01	4,292	1.4
Total	74,389	1.0

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	
	Performance shares	Deferred bonus
Grant date	26-Mar-2021	26-Mar-2021
Grant date share price (£)	£71.08	£71.01
Expected life (years)	3 years	1 to 3 years
Dividend yield	0.99%	0.83% to 0.99%
Risk-free interest rate	0.06%	(0.01%) to 0.06%
Volatility	28.2%	28.15% to 30.00%
Fair value TSR (£)	£34.35	-
Fair value EPS (£)	£69.01	-
Fair value non-market conditions (£)	-	£71.08

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	SAYE	Restricted Plan	
Grant date	01-oct-21	26-mar-21	14-sep-21
Grant date share price (£)	£74.48	£71.08	£81.06
Expected life (years)	3.3 years	0,5 year – 5 years	0,5 year – 5 years
Exercise price (£)	£64.94	nil	nil
Dividend yield	0.92%	0.83% to 1.07%	0.87% to 0.98%
Risk-free interest rate	0.44%	(0.01%) - 0.35%	0.04% - 0.26%
Volatility	25.6%	28.15% - 30.0%	21.37% - 30.55%
Fair value non-market conditions (£)	£17.04	£67.4 - £70.79	£78.33 - £80.7

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 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 schemes

The Company pays fixed contributions to the defined contribution scheme in Portugal 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. There is no expense charged to the income statement in 2020 and 2021 representing contributions payable to the plan by the Company at rates specified in the rules of the plan.

Defined benefit schemes

The Company has obligations in respect of retirement indemnity and long-service award schemes in Paris. The provisions have been calculated by a qualified actuary as at 31 December 2021.

The Company is not aware of any events subsequent to 31 December 2021, which would have a material impact on the results of the valuations.

Weighted-average assumptions to determine benefit obligations

	2021		2020	
	France	Porto	France	Porto
Discount rate	1.0%	1.0%	0.5%	0.5%
Rate of salary increase	2.5%	2.5%	2.5%	2.5%
Rate of price inflation	1.9%	1.9%	1.8%	1.5%
Rate of pension increases	N/A	1.5%	N/A	1.5%

Implied life expectancy at age 60

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	2021		2020	
	France	Porto	France	Porto
Male currently aged 60	23.3	20.6	23.3	20.6
Male currently aged 45	23.3	20.6	23.3	20.6
Female currently aged 60	27.5	20.6	27.5	20.6
Female currently aged 45	27.5	20.6	27.5	20.6

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

	2021		2020	
	France €m	Porto €m	France €m	Porto €m
Benefit obligation as at 1 January	7.3	0.4	6.8	0.7
Pension (income)/expense:				
Current service cost	0.8	0.0	0.7	0.0
Past service gain (curtailment gain)	(0.2)	0.0	(0.4)	0.0
Net interest	0.0	0.0	0.0	0.0
Re-measurement (losses)/gains:				
Effect of changes in demographic assumptions	(0.4)	0.0	0.0	0.0
Effect of changes in financial assumptions	(0.6)	(0.1)	0.2	0.0
Effect of experience adjustments	0.0	0.0	0.0	0.0
Reduction in obligation due to settlement	0.0	0.0	0.0	0.0
Benefits paid	0.0	0.0	(0.0)	(0.3)
Benefit obligation as at 31 December	6.9	0.3	7.3	0.4

Changes in scheme assets

	2021		2020	
	France €m	Porto €m	France €m	Porto €m
Fair value of scheme assets as at 1 January	0.0	0.4	0.0	0.8
Pension income:				
Net interest	0.0	0.0	0.0	0.0
Re-measurement gains:				
Return on plan assets (excluding interest income)	0.0	0.0	0.0	0.0
Employer contributions	0.0	0.0	0.0	0.0
Benefits paid	0.0	0.0	0.0	(0.4)
Fair value of scheme assets as at 31 December	0.0	0.4	0.0	0.4

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Fair value of scheme assets with a quoted market price

	2021	2020
	Porto	Porto
Cash and cash equivalents	0.0	0.0
Equity instruments	0.0	0.0
Debt / LDI instruments	0.4	0.4
Total fair value of assets	0.4	0.4
Present value of funded obligations	(0.4)	(0.4)
Surplus	-	-

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:

	2021		2020	
	France	Porto	France	Porto
	€m	€m	€m	€m
Discount rate - increase by 0.25%	(0.3)	N/A	(0.3)	N/A
Discount rate - decrease by 0.25%	0.3	N/A	0.3	N/A
Discount rate - increase by 0.5%	N/A	N/A	N/A	N/A

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:

	France	Porto
	€'m	€'m
Within the next 12 months	-	-
Between 2 and 5 years	1.2	-
Following 5 years	2.0	-
Total	3.2	-

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17. Financial instruments

The financial instruments of the Company are categorized as follows:

	Notes	31 December 2021 €m	31 December 2020 €m
Financial assets at fair value through profit or loss			
Fair value of transactions with clearing members	11	493,201.8	491,945.7
Financial assets at fair value through OCI			
Treasury bills		558.8	1,531.4
Equity		0.7	0.5
Financial assets at amortised cost			
Trade and other receivables	12	29.0	30.1
Other clearing member balances	11	6,727.7	9,378.9
Clearing business cash and cash equivalents	13	32,763.8	27,379.7
Own cash and cash equivalents	13	335.4	304.8
Financial liabilities at fair value through profit or loss			
Fair value of transactions with clearing members	11	(493,201.8)	(491,945.7)
Financial liabilities at amortised cost			
Trade and other payables	14	(69.9)	(69.1)
Initial margin and other member balances	11	(34,244.8)	(32,415.9)
Default funds	15	(5,763.9)	(5,835.5)

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 were deemed 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 that 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.

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The Company held the following significant financial instruments measured at fair value:

	2021			2020		
	Level 1 €m	Level 2 €m	Total €m	Level 1 €m	Level 2 €m	Total €m
Assets measured at fair value						
Fair value of transactions with clearing members – non-derivatives	-	493,131.4	493,131.4	-	491,857.6	491,857.6
Fair value of transactions with clearing members – derivatives	55.4	15.0	70.4	70.9	17.2	88.0
Treasury bills	558.8	-	558.8	1,531.4	-	1,531.4
Equity		0.7			0.5	
Government backed, bank issued certificates of deposits	-	-	-	-	-	-
Liabilities measured at fair value						
Fair value of transactions with clearing members – non-derivatives	-	(493,131.4)	(493,131.4)	-	(491,857.6)	(491,857.6)
Fair value of transactions with clearing members	(55.4)	(15.0)	(70.4)	(70.9)	(17.2)	(88.0)

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.

Income statement

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

	31 December 2021 €m	31 December 2020 €m
Treasury income on assets held at fair value through the income statement		
Treasury income on assets held at amortised cost	-	-
Treasury income on liabilities held at amortised cost	229.8	196.7
Net fair value (loss)/gain on revaluation of other financial assets held at fair value included in net interest income	-	-
Treasury income	229.8	196.7
Treasury expense on assets held at fair value	-	-
Treasury expense on assets held at amortised cost	(160.4)	(137.8)
Treasury expense on liabilities held at amortised cost	-	-
Treasury expense	(160.4)	(137.8)
Net treasury income	69.4	58.9
Finance income on assets held at amortised cost	-	-
Finance expense on liabilities held at amortised cost	-	-
Net finance income from financial instruments	-	-

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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 liabilities

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

The following table shows the impact of netting arrangements on all financial assets and liabilities that are reported net on the statement of financial position.

	Gross amounts €m	Amounts offset €m	Net amounts as reported €m
31 December 2021			
Repurchase agreements	629,153.8	(136,022.4)	493,131.4
Other financial assets	1,003.9	(933.5)	70.4
Total assets	630,157.7	(136,955.9)	493,201.8
Reverse repurchase agreements	(629,153.8)	136,022.4	(493,131.4)
Other financial liabilities	(1,003.9)	933.5	(70.4)
Total liabilities	(630,157.7)	136,955.9	(493,201.8)
	Gross amounts €m	Amounts offset €m	Net amounts as reported €m
31 December 2020			
Repurchase agreements	584,066.7	(92,209.0)	491,857.6
Other financial assets	390.3	(302.3)	88.0
Total assets	584,457.0	(92,511.3)	491,945.7
Reverse repurchase agreements	(584,066.7)	92,209.0	(491,857.6)
Other financial liabilities	(390.3)	302.3	(88.0)
Total liabilities	(584,457.0)	92,511.3	(491,945.7)

As a CCP, the Company operates as a 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 €493,201.8 million (2020: €491,945.7 million) to nil. The Company holds default funds for :

- Equities and derivatives of €1,836.0 million (2020: €929.9 million)
- CDS of €1,754.7 million (2020: €2,716.6 million)
- Repos of €1,905.1 million (2020: €1,907.9 million)
- Collateral basket repos for €268.0 million (2020: €281.0 million)

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In addition, the Company holds member collateral for :

- Equities and derivatives €8,631.1 million (2020: €6,786.4 million)
- Repos for €38,474.8 million (2020: €34,600.6 million)
- CDS for €4,211.2 million (2020: €4,191.7 million)
- other transactions €705.8 million (2020: €573.1 million)

18. Commitments and contingencies

Operating leases

At 31 December 2021 the Company had annual commitments under non-cancellable operating leases. The total future minimum lease payments due are as follows:

	31 December 2021	31 December 2020
	€m	€m
Within 1 year	3.5	3.3
Between 1 and 5 years	5.1	11.3
More than 5 years	-	-
	8.6	14.6

The lease for the main Paris office commenced from 1 January 2015, expiring 31 May 2024.

The Company has no finance leases.

Supplier agreements

LCH SA and the ATOS group entered into a new Heads of Terms concerning the 5-year IT service contract, effective from January 2014. This extends the contract until December 2023, with a right to terminate from January 2022. The estimated maximum value of the commitment to January 2022 is €27.5 million from 1st of January 2021 (Until 2023, €41.6 million).

Treasury assets supporting operational facilities

At 31 December 2021, the Company had assets and collateral in support of central bank activity, which amounted to €2,454.6 million (2020: €2,423.9 million). LCH SA pledges securities as collateral for clearing activity with Banque de France for the purpose of securing overnight borrowings.

19. Share capital and reserves

Share capital

Ordinary shares

The Company has 7,416,700 fully paid-up ordinary shares of €15.24 each in issue as at 31 December 2021 (2020: 7,416,700).

No additional event has been recognised on the share capital of LCH SA following the integration of Euronext in 2018, as

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minority shareholding with 11.1%.

Other reserves

Share premium

No additional share premium has been recognised on the shares issued in the year (2020: nil).

Other capital reserves

The balance of €42.9 million (2020: €42.2 million) includes non-distributable reserves of €11.3 million (2020: €11.3 million).

Distributable reserves

Retained earnings of €267.4 million (2020: €215.1 million) are regarded as distributable. €28 million of 2020 result has been allocated to retained earnings.

20. Capital management

The Company's approach to capital management is to maintain a strong capital base that will support the development of the business, meet regulatory requirements at all times and maintain good credit ratings. This is managed with reference to external capital requirements, including a consideration of future impacts of LCH 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.

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

LCH SA is regulated as a credit institution by the ACPR and as a CCP and an investment service provider by l'Autorité des marchés financiers (AMF) in Paris, France. It is subject to standard capital adequacy rules under EMIR and Basel III. It is also regulated by the CFTC as a DCO in the USA. The US Securities and Exchange Commission (SEC) has approved an application by LCH's CDSClear unit for registration as a clearing agency. The authorisation, granted on December 29, 2016, allows LCH to begin clearing single-name credit default swap (CDS) contracts for US clients.

LCH SA is subject to capital adequacy rules under EMIR. Since December 2013, it is also regulated by the CFTC's Subpart C rules.

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

In particular, it is required to ensure that its EMIR capital requirement is met by both its capital and audited reserves and adjusted liquid financial resources.

Basel III

In accordance with Basel III Pillar 1 framework, the Company is required to maintain ratio of capital to risk weighted assets

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that cannot fall under a threshold of 4.5% of core equity, 6% of Tier 1 capital, 2.5% of capital conservation buffer and 10.5% of total capital in 2021. LCH SA has applied the new framework of Basel III, CRR 2 since June 28th 2021.

21. Related party transactions

Key management compensation personnel

Details of key management personnel and their total remuneration are disclosed in note 16.

Ultimate parent company and group companies

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 2021 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 2021 are available from the company secretary, London Stock Exchange Group plc, 10 Paternoster Square, London, EC4M 7LS.

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 2021, 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 companies under common control which have passed through the income statement during the year, together with details of outstanding balances, are set out below.

	31 December 2021	31 December 2020
	€m	€m
Transactions with parent companies		
<i>Income statement</i>		
Services recharged to parent companies	-	-
Services recharged from parent companies	5.8	5.0
	5.8	5.0
<i>Statement of financial position</i>		
Amounts due to parent companies	(2.1)	(2.1)
Transactions with companies under common control		
<i>Income statement</i>		
Services recharged to companies under common control	-	-
Services recharged from companies under common control	13.0	10.6
Project recharge income with companies under common control	0.2	(0.4)
Project recharge cost from companies under common control	14.3	9.3
	27.5	19.5

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<i>Statement of financial position</i>		
	(3.6)	(3.6)
	31 December 2021	31 December 2020
	€m	€m
Transactions with subsidiary		
<i>Income statement</i>		
Project recharge income (netted with administrative expenses)	-	-
Services recharged to fellow subsidiary	-	-
Royalties and maintenance recharged from associate	-	-
	-	-
<i>Statement of financial position</i>		
Intangible assets acquired from subsidiary (note 7)	-	-

In 2020, the Belgian branch of LCH SA was closed following a decision of the general meeting of May 2020, for an effective date on 30 June 2020. All the procedures were conducted with French and Belgian regulators to inform them of this decision.

22. Subsequent events

Subsequent events have been evaluated by the Company through 22 February 2022, the date these financial statements are available to be issued.