

Building the Marketplace of the

Future





Our vision is to **build the Marketplace of the Future**

by facilitating the two-way capital flows between East and West, by using our scale and reputation as a platform to support our stakeholders, and by capturing the megatrend opportunities that are shaping our markets and societies.





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Overview





Strategic and Financial Highlights



Throughout 2022, HKEX demonstrated focus and resilience, launching a range of important strategic initiatives and introducing a range of new products and market enhancements. These included the most significant developments to our mutual-market access Connect franchise since it was first established, the launch of Core Climate – Hong Kong’s first carbon trading platform, and the introduction of a host of new Derivatives and ETF products. And despite the challenging global economic and geopolitical backdrop, HKEX remained one of the world’s premier capital raising venues, with positive sentiment returning to the IPO market in the second half, culminating in a total of 90 new companies from a range of sectors and geographies successfully joining our markets in 2022. HKEX Derivatives Market also had another record year, with Hong Kong fast becoming the region’s key risk management centre. The year finished very strongly for HKEX, with the Group reporting record fourth quarter financials, offsetting in part the softer volumes and numbers in the first half. Whilst the road ahead will not be without challenges, we are excited about the year ahead and we look forward to continuing to execute on our vision to build the Marketplace of the Future.

Nicolas Aguzin

Chief Executive Officer



Strategic & Operational Highlights



Corporate

12 Jan

New strategic cooperation agreement signed with Shenzhen Stock Exchange

29 Mar

HKEX Corporate Day

21 Jun

HKEX Connect Hall grand re-opening

Regulation

1 Jan

Listing Rules amendments for overseas issuers came into effect

29 Apr

Board Diversity & Inclusion in Focus Repository launched

19 Oct

Consultation paper on Listing Regime for Specialist Technology Companies published

Products and Services

21 Feb

First metaverse-themed ETF listed

24 Feb

First pure-play Hong Kong equity ESG ETF listed

18 Mar

First Special Purpose Acquisition Company listed

23 Mar

First carbon futures ETF listed

29 Apr

QME launched new soybean contracts

19 May

First Hong Kong Government retail green bond listed

24 May

LME launched a range of new sustainability certifications on LMEpassport

23 Jun

First blockchain ETF listed

4 Jul

Inclusion of ETFs in Stock Connect

4 Jul

Swap Connect, a new mutual access programme between Hong Kong and Mainland China's interbank interest rate swap markets announced

7 Jul

IR Connect launched

8 Aug

MSCI China A 50 Connect Index Derivatives Warrants listed, Hong Kong's first A-share structured products

28 Oct

Core Climate launched, Hong Kong's first carbon trading platform

31 Oct

Fit-out of a new Hosting Services data hall completed

28 Nov

Hang Seng TECH Index Futures Options launched

16 Dec

First two crypto asset ETFs launched



Market Operations

25 Apr

Electronic Communication Platform upgraded, enabling clients to exchange files with HKEX

3 May

Volatility Control Mechanism expanded to cover Exchange Traded Products

9 May

Derivatives Holiday Trading commenced

13 Jun

New Value-at-Risk (VaR) Platform launched in the Cash Market

12 Aug

Stock Connect trading calendar enhancements announced, facilitating trading on all days where both the Hong Kong and Mainland markets are open

17 Oct

Volatility Control Mechanism and Dynamic Price Banding Mechanism expanded to cover Hang Seng TECH Index Futures

21 Nov

T Session closing hour revised for selected futures and options contracts to support investors capturing underlying market movements in the same trading session

13 Dec

New HKD-RMB Dual Counter Model plan announced, together with Dual Counter Market Making Programme in the Cash Market

19 Dec

The SFC and the CSRC announced in-principle agreement on expansion of eligible stocks included in Stock Connect

Corporate Social Responsibility and ESG

24 Mar

MOU signed with Guangzhou-based China Emissions Exchange to explore Greater Bay Area and international carbon opportunities

31 Mar

2022 HKEX Impact Funding Scheme launched

16 May

2022 HKEX Charity Partnership Programme launched

22 Jun

New HKEX Research Funding Scheme launched

5 Jul

Hong Kong International Carbon Market Council launched

24 Oct

LME confirmed 2040 net-zero commitments

2 Dec

Inaugural HKEX Impact Summit

Financial Highlights

Annual Results

Revenue and Other income

-12%

2022 revenue and other income of \$18,456 million was 12 per cent lower than the record 2021

- Core business revenue was down 9 per cent against 2021, reflecting reduced trading and clearing fees from lower Headline ADT and Stock Connect Northbound ADT, and lower depository fees and listing fees. This was partly offset by the increase in net investment income from Margin Funds and higher trading fees from the Derivatives Market
- Net investment loss on Corporate Funds was \$48 million (2021: income of \$708 million), as the External Portfolio had net fair value losses of \$486 million in 2022 (2021: gains of \$364 million), partly offset by higher investment income from internally-managed Corporate Funds

EBITDA

-19%

EBITDA¹ was 19 per cent lower than 2021 at \$13,185 million, with EBITDA margin at 72 per cent, 6 per cent lower than 2021

Operating Expenses

+12%

Operating expenses were 12 per cent higher than 2021, attributable to higher staff costs and professional fees

Profit Attributable to Shareholders

-20%

Profit attributable to shareholders was \$10,078 million, 20 per cent lower than the record 2021

¹ For the purposes of this Annual Report, EBITDA is defined as earnings before interest expenses and other finance costs, taxation, depreciation and amortisation. It excludes the Group's share of results of the joint ventures. EBITDA margin is calculated based on EBITDA divided by revenue and other income less transaction-related expenses.

Key Financials

	2022 \$m	2021 \$m	Change
Revenue and other income			
Core business revenue	18,374	20,103	(9%)
HKEX Foundation donation income	130	139	(6%)
Net investment (loss)/income of Corporate Funds	(48)	708	N/A
	18,456	20,950	(12%)
Operating expenses	5,095	4,529	12%
EBITDA	13,185	16,269	(19%)
Profit attributable to shareholders	10,078	12,535	(20%)
Capital expenditure	1,184	1,127	5%
Basic earnings per share	\$7.96	\$9.91	(20%)
First interim dividend per share	\$3.45	\$4.69	(26%)
Second interim dividend per share	\$3.69	\$4.18	(12%)
	\$7.14	\$8.87	(20%)
Dividend payout ratio	90%	90%	-

Key Market Statistics

	2022	2021	Change
ADT of equity products traded on the Stock Exchange ¹ (\$bn)	109.0	146.6	(26%)
ADT of DWs, CBBCs and warrants traded on the Stock Exchange (\$bn)	15.9	20.1	(21%)
ADT traded on the Stock Exchange ^{1,2} (Headline ADT) (\$bn)	124.9	166.7	(25%)
ADT of Northbound Trading of Stock Connect ¹ (RMBbn)	100.4	120.1	(16%)
ADT of Southbound Trading of Stock Connect ¹ (\$bn)	31.7	41.7	(24%)
ADV of derivatives contracts traded on the Futures Exchange ('000 contracts)	715 ⁴	538	33%
ADV of stock options contracts traded on the Stock Exchange ('000 contracts)	588	637	(8%)
Chargeable ADV ³ of metals contracts traded on the LME ('000 lots)	506	547	(7%)
ADT of Northbound Bond Connect (RMBbn)	32.2 ⁴	26.6	21%

1 Includes buy and sell trades under Stock Connect

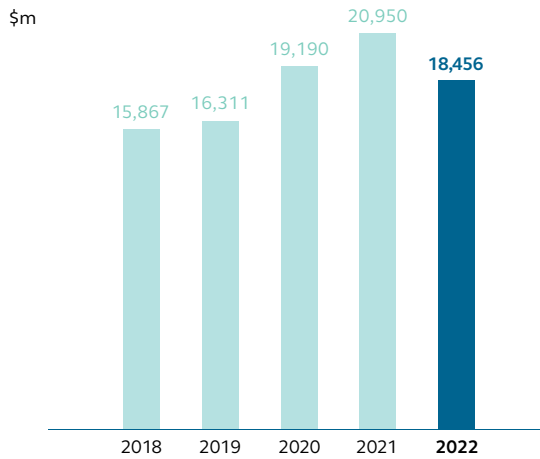
2 ADT of Southbound Trading is included within Headline ADT.

3 Chargeable ADV excludes administrative trades (Admin Trades) and other non-chargeable trades.

4 New record high in 2022

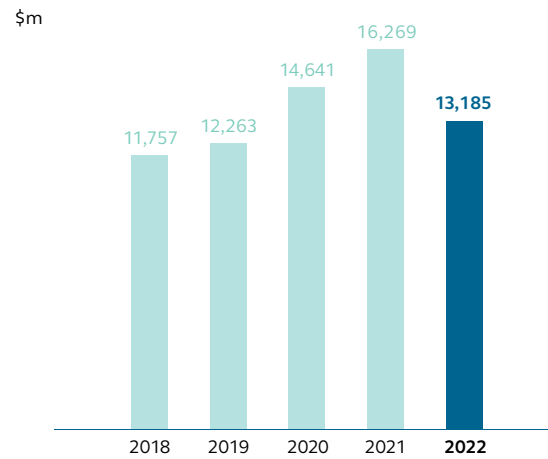
Revenue and Other Income

\$18,456 million
-12%



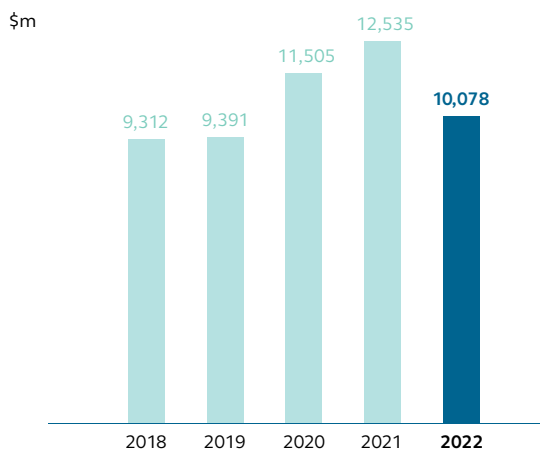
EBITDA

\$13,185 million
-19%



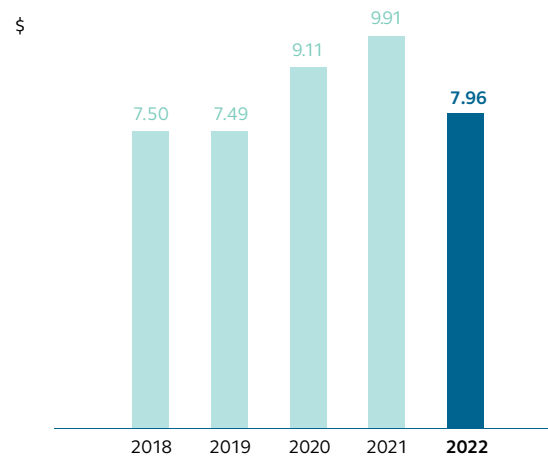
Profit Attributable to Shareholders

\$10,078 million
-20%



Basic Earnings Per Share

\$7.96
-20%



Financial Highlights

Comparison of Q4 2022 with Q4 2021 Results

Revenue and Other income

+10%

Q4 2022 revenue and other income of \$5,201 million was 10 per cent higher than Q4 2021, reaching record fourth quarter high

- Core business revenue was up 7 per cent against Q4 2021, attributable to the increase in net investment income from Margin Funds
- Net investment income on Corporate Funds was up 52 per cent against Q4 2021 due to higher interest income and higher fair value gains of the External Portfolio, but was partly offset by a non-recurring valuation gains of long-term equity investments in 2021

EBITDA

+9%

EBITDA margin remained the same at 74 per cent

Operating Expenses

+12%

Operating expenses were up 12 per cent, attributable to higher staff costs and professional fees

Profit Attributable to Shareholders

+11%

Profit attributable to shareholders was \$2,979 million, 11 per cent higher than Q4 2021, reaching record fourth quarter high

Key Financials

	Q4 2022 \$m	Q4 2021 \$m	Change
Revenue and other income			
Core business revenue	4,772	4,458	7%
HKEX Foundation donation income	53	26	104%
Net investment income of Corporate Funds	376	248	52%
	5,201	4,732	10%
Operating expenses	1,348	1,200	12%
EBITDA	3,807	3,498	9%
Profit attributable to shareholders	2,979	2,674	11%
Capital expenditure	411	404	2%
Basic earnings per share	\$2.35	\$2.11	11%

Key Market Statistics

	Q4 2022	Q4 2021	Change
ADT of equity products traded on the Stock Exchange ¹ (\$bn)	113.6	108.2	5%
ADT of DWs, CBBCs and warrants traded on the Stock Exchange (\$bn)	13.6	18.2	(25%)
ADT traded on the Stock Exchange ^{1,2} (Headline ADT) (\$bn)	127.2	126.4	1%
ADT of Northbound Trading of Stock Connect ¹ (RMBbn)	97.6	110.9	(12%)
ADT of Southbound Trading of Stock Connect ¹ (\$bn)	39.4	27.9	41%
ADV of derivatives contracts traded on the Futures Exchange ('000 contracts)	842 ⁴	506	66%
ADV of stock options contracts traded on the Stock Exchange ('000 contracts)	641	510	26%
Chargeable ADV ³ of metals contracts traded on the LME ('000 lots)	482	555	(13%)
ADT of Northbound Bond Connect (RMBbn)	32.4	27.7	17%

1 Includes buy and sell trades under Stock Connect

2 ADT of Southbound Trading is included within Headline ADT.

3 Chargeable ADV excludes administrative trades (Admin Trades) and other non-chargeable trades.

4 New record quarterly high

Chairman's Statement



2022 was a good year of strategic progress for HKEX, despite ongoing macro challenges and uncertainties. We have delivered a resilient full-year performance, reflecting the continued robustness and strength of our organisation and our markets.



2022 was a good year of strategic progress for HKEX, despite ongoing macro challenges and uncertainties. We have delivered a resilient full-year performance, reflecting the continued robustness and strength of our organisation and our markets. A significant number of important strategic initiatives were accomplished or announced during the year, which have positioned us well to continue to lead and shape the development of the region's global capital markets, supporting our vision to build the Marketplace of the Future.

Our Performance

The volatile macro environment during 2022 continued to impact trading and volumes across global markets, and Hong Kong was no exception. However, market sentiment began to improve in the fourth quarter, resulting in a strong end to the year for HKEX. Throughout the year we were also pleased to see strong performance in the Hong Kong Derivatives Market, with new trading records set across our USD/CNH Futures and a number of other individual derivatives products. Trading through Stock Connect remained resilient, and Northbound Bond Connect trading continued to record new highs in trading volume and number of investors. Driven by the renewed momentum in our IPO market in the second half of the year, Hong Kong remained as one of the world's most active IPO fundraising hubs, raising a total of \$104.6 billion in 2022.

The chargeable average daily volume of metals contracts traded on the LME decreased by 7 per cent from 2021, amid challenging market conditions.

Total revenue and other income of the Group, for the year ended 31 December 2022, amounted to \$18,456 million and the profit attributable to shareholders was \$10,078 million, down 12 per cent and 20 per cent respectively, from the record highs in 2021.

Dividend

The Board declared payment of a second interim dividend of \$3.69 per share, wholly in cash, which, together with the first interim dividend of \$3.45 per share paid in September 2022, results in a full-year dividend of \$7.14 per share.

Strategic Update

In 2022, we made notable progress in strengthening our mutual market connectivity, diversifying our product offerings and enhancing the attractiveness, liquidity and vibrancy of our markets, further deepening our value proposition as a gateway connecting China and the world.

Of particular note was the inclusion of ETFs in Stock Connect, the announcement of the launch of Swap Connect and the proposed inclusion of Hong Kong primary-listed international companies in the Southbound Stock Connect, each marking a new milestone in the further development and connectivity between Hong Kong and Mainland China's capital markets. The launch of Core Climate, Hong Kong's new international carbon marketplace, was another highlight and supports both our commitment to the regional and global growth of a vibrant carbon ecosystem and a healthy sustainable future for us all. In December 2022, we announced that the HKD-RMB Dual Counter Model will be introduced in the first half of 2023, supporting the continued internationalisation of the RMB and further elevating Hong Kong's role as the world's premier offshore RMB hub; we also launched a new Hong Kong SPAC listing framework in January 2022 as well as a market consultation on new listing rules for specialist technology companies in October 2022, which all continue to enhance Hong Kong's reputation as the global listing venue of choice.

Through these initiatives, and other initiatives, we continue to strengthen the global competitiveness and relevance of our markets, reinforcing our leadership role at the heart of the global financial community.

Market Quality and Sustainability

As a leading global exchange group, we are mindful of our responsibilities and the vital role we play in enhancing both the quality of our markets and advancing sustainability across the region and globally.

Through the Hong Kong International Carbon Market Council, established in July 2022, we are collaborating with leading corporates and financial institutions to further enhance Core Climate, facilitating Hong Kong's growth as a premier carbon hub in Asia and beyond, contributing to global efforts towards a low-carbon economy. We are also working closely with the Guangzhou Futures Exchange and the China Emissions Exchange, among others, to explore opportunities in carbon finance in the Greater Bay Area. During 2022, we continued to promote transparency and disclosure of sustainable-themed products through STAGE, our multi-asset sustainable finance platform which now displays more than 110 sustainable-focused products from leading issuers. Our centralised ESG resources platform, ESG Academy, continues to drive market education and provide insights on ESG reporting and best practices to support and guide listed issuers and the broader business community in their sustainability journeys.

Throughout the year, the LME continued its leadership role in driving supply chain sustainability across the global metals industry, in particular, through a number of enhancements of its fast expanding digital credential register, LMEpassport, providing greater comparability and transparency in carbon emissions data. In addition, we were pleased to see that 96 per cent of the LME-listed brands met the first reporting deadline on 30 June 2022 to comply with the LME's responsible sourcing policy underpinned by guidelines set by OECD.

Among our ongoing efforts to promote high standard of governance and disclosure practices among listed issuers in Hong Kong, we amended the Listing Rules to become the first exchange in the world to end single-gender boards for new IPO applicants in 2022, with all listed issuers mandated to follow suit by the end of 2024. We also enhanced share schemes regulation for listed issuers in January 2023 to provide informative disclosure and uphold robust shareholder protection. We are now seeking market feedback on our proposals to expand the paperless listing regime in support of our commitment to sustainability and further enhance our operational efficiency, without compromising investor protection.

Specific details of the Group's performance, achievements and market initiatives in 2022 are set out in the Chief Executive Officer's Review and Business Review sections of this Annual Report.

Corporate Responsibility

At HKEX, we recognise that our role and responsibilities go beyond our duties as a market operator, a regulator and a corporate. That is why we seek to lead by example in promoting best-in-class standards of governance, a strong corporate culture and building a long-term sustainable future for both our markets and our communities.

In 2022, we engaged an independent external consultant to evaluate the performance of the boards of HKEX and its clearing subsidiary, OTC Clear. The evaluation concluded that both of these two boards are effective, and that the HKEX Board had made material progress across aspects since the prior independent board evaluation in 2019.

Building on our unique role in connecting markets and the wider community, we hosted our inaugural HKEX Impact Summit in December 2022, championing corporate philanthropy and fostering stronger collaboration between business and society. Through the HKEX Foundation, we donated over \$130 million in 2022 to support a wide range of projects focusing on financial literacy, diversity and inclusion, poverty relief and environmental stewardship through our two flagship charitable programmes – the HKEX Charity Partnership Programme and HKEX Impact Funding Scheme, as well as directly through partnerships with local charities.

>\$130 million

donated by the
HKEX Foundation in 2022

Underscoring its commitment to responsible supply chains, the LME continued its funding partnership with the charities Pact and The Impact Facility, supporting their multi-year projects to tackle child labour and children's rights issues in African mining communities. The LME also established partnership with Inspire, an education charity based in the UK, to support initiatives focusing on bringing positive impact on local schools and young people's lives.

Details can be found in our 2022 CSR Report, which is available on the HKEX Group website together with this Annual Report.

Outlook

Looking ahead, the macro economic environment looks set to remain challenging and uncertain. Concerns over a global economic slowdown, persistent inflation and ongoing geopolitical tensions will continue to be the key factors shaping the performance of capital markets, while sustainability will remain a broader shared agenda across countries and sectors.

As a purpose-driven organisation and a leading global exchange group, we are fully committed to promoting the long-term sustainability of financial markets and the prosperity of our stakeholders. Our steadfast focus on driving connectivity, innovation and sustainability across our markets and client centricity across our business ensures that we are well placed to meet challenges and capture future growth opportunities.

I would like to take this opportunity to express my gratitude to my fellow Board members for their support and contribution throughout 2022. On behalf of the Board, I would like to extend sincere appreciation to Mr Rafael Gil-Tienda and Mr Stephen Yiu, who will retire from the Board after the conclusion of the 2023 AGM. I would also like to thank members of the International Advisory Council and the Mainland China Advisory Group for their invaluable insights and guidance during the year.

Finally, I would like to thank our shareholders and other valued stakeholders for their ongoing trust and support. I would also like to express heartfelt appreciation to all our employees for their resolute commitment and hard work in pursuing excellence, helping us to progress our strategic priorities and supporting the long-term health of our communities.

Laura M CHA

Chairman

Hong Kong, 23 February 2023

Chief Executive Officer's Review



Our vision to build the Marketplace of the Future provided a clear framework for our energies during 2022, as we executed to strengthen the long-term health and vitality of our business and our markets and support the attractiveness of Hong Kong as a unique East-West superconnector.



HKEX had a busy and productive year in 2022. Against, at times, a challenging macroeconomic and geopolitical backdrop, HKEX delivered solid results, with the second half of the year showing signs of encouraging momentum in the IPO market and a particularly strong performance in the Derivatives Market. Results for the final quarter of the year were the best fourth quarter on record.

Throughout the year, we have focused on delivering our vision to build the Marketplace of the Future, which we articulated at our Corporate Day in March. The three strategic imperatives that underpin this vision are *Connecting China and the World*, *Connecting Capital with Opportunities*, and *Connecting Today with Tomorrow*. These strategic imperatives provided a clear framework for our energies during 2022, as we executed to strengthen the long-term health and vitality of our business and our markets and support the attractiveness of Hong Kong as a unique East-West superconnector.

One of the most significant highlights of 2022 was the beginning of a new chapter in the Hong Kong “Connect” story: the HKEX Connect franchise expanded at a pace not seen since the launch of Stock Connect in 2014 with ETF Connect going live, the announcement of the planned launch of Swap Connect and a number of other extensions and enhancements to the programme. At the same time, we marked significant milestones in enhancing the attractiveness and competitiveness of our markets. These included our proposal on new listing rules for specialist technology companies, the launch of our carbon trading platform, Core Climate, which along with other initiatives will continue to shape the future of capital markets in the region and beyond for many years to come.

These, and other developments during the year, put us in a strong position to support the megatrends of innovation, sustainability, and the exponential growth of China’s capital markets and economy – megatrends that are shaping a world in which Asia is becoming increasingly important.

Market highlights

- IPO market resilience against challenging macroeconomic conditions – 90 listings¹, raising \$104.6 billion, 65 per cent of which was for the new economy sector, putting Hong Kong in the top four markets globally in 2022.
- Northbound Bond Connect ADT reached a record high of RMB32.2 billion, up 21 per cent year-on-year (YoY).
- Stock Connect ADT reflected macro equity market conditions, with Northbound ADT at RMB100.4 billion, down 16 per cent YoY, and Southbound ADT at \$31.7 billion, down 24 per cent YoY.
- The inclusion of international companies in Southbound Stock Connect was announced.
- A consultation paper on new listing rules for specialist technology companies was published, providing a new fundraising channel for “companies of tomorrow”.
- Our Stock Connect programme welcomed the inclusion of ETFs for the first time.
- Swap Connect, a new mutual access programme between Hong Kong and Mainland China’s interbank interest rate swap market, was announced.
- Announcement of the planned introduction of a HKD-RMB Dual Counter Model, alongside a new Dual Counter Market Making Programme in the Hong Kong securities market.
- Announcement of the planned roll-out of China Treasury Bond Futures trading in Hong Kong.
- Core Climate, Hong Kong’s first carbon trading platform, launched.
- Special Purpose Acquisition Company (SPAC) listing route launched, giving issuers an alternative route to market.

1 Includes 1 transfer (2021: 2 transfers) of listings from GEM to Main Board

Primary market

Macroeconomic and geopolitical conditions led to weak sentiment and softness across the global IPO market. Set against this backdrop, Hong Kong's primary market performed well relative to others, retaining its position as one of the world's most active international fundraising hubs. HKEX welcomed 90 new listings raising \$104.6 billion. Moreover, 63 of those took place in the second half of the year – more than double that of the first half. The last month of the year saw 21 listings.

Our market also continued to be a leading fundraising venue for many of the “companies of tomorrow” – 62 of the IPOs in 2022 were from the new economy sector, accounting for 65 per cent of capital raised during the period. On the back of this resilient performance, we enter 2023 with signs of renewed momentum and a robust pipeline.

Secondary market

It was a solid year for HKEX's secondary markets, despite global market fragility. Headline ADT in the Cash Market was \$124.9 billion. While this was a decline of 25 per cent from the exceptional highs of 2021, the performance was consistent with long-term normalised levels and reflected broader global market softness.

HKEX's Derivatives Market had a buoyant year. In 2022, HKEX continued to see robust volumes in the MSCI China A 50 Connect (USD) Index Futures contract, as well as recording a new trading volume high in USD/CNH Futures in October. Hong Kong is already home to the world's most extensive and vibrant offshore A-share derivatives ecosystems and is increasingly seen as a preferred risk management centre in the region.

The average daily number of contracts traded on the Futures Exchange reached a record high, with ADV up 33 per cent YoY. HKEX's suite of Options on Futures contracts – the Hang Seng Index Futures Options and Hang Seng China Enterprises Index Futures Options – saw record highs, with combined open interest with a notional value of over US\$64 billion.

Strategic Development Review

In March, we were pleased to host HKEX Corporate Day, where we shared our vision and strategy with investors, analysts, and other stakeholders, setting out a roadmap to build the Marketplace of the Future.

Three strategic imperatives underpin this vision:

- Connecting China and the World;
- Connecting Capital with Opportunities; and
- Connecting Today with Tomorrow.

Throughout the year, we delivered against this strategy as part of a transformative journey that continues to support and enhance the long-term development of Hong Kong's financial markets and the city's global role as an East-West superconnector.

Connecting China and the World

Sitting at the heart of the most international city in China and the most Chinese city outside the Mainland, HKEX is uniquely positioned to facilitate the vital two-way flows of capital between China and the world – two-way flows that are expected to grow exponentially over the next decade.

To build on this unique position of strength, we continued to help Chinese capital access global opportunities and bring the China growth story to international investors in 2022. In fact, this was a defining year for HKEX's Connect franchise, with the announcements of significant new initiatives that will propel it into the future.

A new chapter in our Connect story

In July, we went live with the inclusion of ETFs in Stock Connect for the first time. We also announced the introduction of Swap Connect, offering mutual access between Hong Kong and Mainland China's interbank interest rate swap markets.

In September, these enhancements were followed by support from the CSRC in relation to:

- Eligible primary-listed international companies would be included in Southbound Stock Connect for the first time;
- RMB counters would be added to Stock Connect; and
- China Treasury Bond Futures would be made available in Hong Kong.

Including international companies in Southbound Stock Connect is potentially game-changing for Hong Kong as an IFC. In addition, all three initiatives are significant foundational pillars for the future growth of Hong Kong as a world-class international listing, risk-management, and offshore RMB hub.

At the same time, we continued to make smaller but essential upgrades to our Connect franchise. For example, in August, we announced Stock Connect trading calendar enhancements, adding new trading days and improving access to the platform.

Forging strong partnerships

We also continued to build relations with key stakeholders in the Mainland. As pandemic restrictions began to ease, I had the pleasure of visiting our partners in Beijing, Guangzhou, and Shenzhen during the year to discuss future opportunities.

At HKEX, we are incredibly excited by the opportunities in the Greater Bay Area and we were delighted to sign a new strategic cooperation agreement with the Shenzhen Stock Exchange and a memorandum of understanding with the Guangzhou-based China Emissions Exchange. The latter will see us exploring Greater Bay Area and international carbon opportunities.

Connecting Capital with Opportunities

Connectivity is in the DNA of HKEX, and to continuously enhance our markets' attractiveness, depth, vibrancy, and diversity, we keep seeking to connect capital with opportunities. In 2022, this involved enhancing our market structure and expanding our product ecosystem.

Supporting the fundraising needs of tomorrow

In our primary market, we launched the SPAC listing route, giving issuers an alternative route to market. The first SPAC was listed in March, and there were five listed as we closed out the year.

Seeking to support further the fundraising needs of innovative companies in the new economy sector, we published a consultation paper on new listing rules for specialist technology companies in October. The proposed new rules will provide a new channel for companies from five technology sectors to seek a listing in Hong Kong, further building on the existing vibrant and diverse new economy ecosystem that characterises our capital markets.

This caters to the funding needs of large-scale advanced technology companies at an early commercialisation stage. It also adds more choice for investors as it will attract new issuers to our markets. More importantly, it provides even more opportunities to connect the ideas and ambitions of the innovative companies of tomorrow to global capital.

Building Asia's derivatives trading hub

In our secondary markets, we made significant progress in strengthening our position as Asia's derivatives trading hub, reflecting increased customer demand for hedging and risk management tools.

In August, the first MSCI China A 50 Connect Index Derivative Warrants were listed – Hong Kong's first A-share structured products. We also launched the Hang Seng TECH Index Futures Options in November, alongside further enhancements to our existing Hang Seng TECH Index derivatives products, providing investors with even more choice and flexibility.

Additionally, we introduced several operational enhancements, including derivatives holiday trading in May, allowing investors to trade non-HKD denominated products during Hong Kong holidays when the markets of their underlying securities may be open.

And in December 2022, we announced the launch of a new HKD-RMB Dual Counter Model alongside a Dual Counter Market Making Programme in our securities market, further supporting the listing, trading, and settlement of RMB counters in the market and elevating Hong Kong's role as the world's premier offshore RMB hub.

Appetite for Exchange Traded Products (ETPs) also surged, with our ETPs reaching almost 180, following 29 new additions. These included many firsts, such as the first metaverse ETF, the first carbon futures ETF, and the first blockchain ETF. Moreover, the average daily turnover of ETPs, including ETFs, increased 56 per cent YoY to \$12.0 billion.

Connecting capital markets and the physical world

As part of the critical global infrastructure that underpins pricing, investment, and risk management for metals, the LME has been on the frontline during an exceptionally challenging period for the metals industry. Throughout 2022, it demonstrated integrity, resourcefulness, and leadership. The decisions it made have not always been universally applauded, but the LME has always sought to put the interests of the market as a whole first.

The LME has had a challenging year but also a seminal year. I believe that 2022 will come to be seen as a year in the LME's 145-year-old history in which it demonstrated its value as a stable and steadfast institution that works in the interest of and connects all stakeholders across geography, market, and industry in a time of tectonic social, technological and economic change. As a parent company, HKEX continues to fully support the LME as it connects capital markets to the physical world.

Taking HKEX on the road

With the world starting to move on from the Covid-19 pandemic, we also took to the road to tell the Hong Kong story and meet our partners, clients, and other stakeholders around the globe. I was delighted to be part of the HKEX delegations to the World Economic Forum in Davos, Switzerland, and the Future Investment Initiative in Riyadh, Saudi Arabia, as well as lead the first HKEX delegation to meet customers, investors, shareholders, and the media in Singapore since 2020.

We ended 2022 by reiterating our commitment to support the growth ambitions of our clients worldwide when we announced our New York office opening in December.

Connecting Today with Tomorrow

The global financial industry is rapidly transforming, evolving, and being disrupted by megatrends such as digitisation, big data, personalised finance, and ESG considerations. This is changing how HKEX's clients and investors behave, redefining the future of capital markets and creating exciting new opportunities for our partners and us.

In 2022, we focused on future-proofing our business by modernising our operations and laying the building blocks that will enable us to offer the "products of the future" while continuing to provide the transparency and trustworthiness that make us one of the world's leading exchange groups.

Fulfilling our role as agents of change

In helping our market participants embrace the opportunities of megatrends, the highlight of 2022 was the launch of Core Climate, Hong Kong's new international carbon marketplace, in October. HKEX has long advocated for ESG governance, disclosure, and investment opportunities. With Core Climate, we marked a major new milestone in this journey by providing a platform for the effective and transparent trading of carbon credits and other green instruments.

In under a month since its launch, approximately 400,000 tonnes of carbon credits from China and around the world were traded on this new platform, placing Core Climate among Asia's most active voluntary carbon marketplaces. The Hong Kong International Carbon Market Council, which was formed in July 2022 and helped shape Core Climate, will continue to provide valuable insights and actively collaborate with HKEX to develop Hong Kong's maturing carbon ecosystem.

We also marked a milestone in our commitment to the highest standards of corporate governance in our markets with the launch of IR Connect in July. This powerful yet accessible investor relations (IR) platform helps Hong Kong-listed companies build connectivity and regular dialogue with their investors.

In addition, our inaugural HKEX Impact Summit became an instant hit on Hong Kong's ESG calendar. Leveraging our strengths as a connector, we devised this event to bring together stakeholders from business, non-profits, government, and academia to build connections and explore the latest trends in corporate philanthropy models. This well-received event demonstrated our continuing commitment – through HKEX Foundation, the markets we operate, and our regulatory function – to build a sustainable healthy community where all our stakeholders and constituents can thrive.

The LME also made significant advances on its sustainability commitments in 2022. In addition to committing to its 2040 net-zero target, it also made enhancements to its digital sustainability credentials register, LMEpassport, and commitments to eliminating human rights abuses and governance issues from metals' supply chains.

Enhancements to LMEpassport will enable greater comparability in carbon emissions data, provide increased transparency on brands using scrap material, and broaden disclosure opportunities to non-LME brands. And in June, 96 per cent of LME brands met the deadline of its first responsible sourcing report, providing information on their chosen tracks to compliance.

Embracing the digitisation of finance

Innovation is another area in which we achieved many milestones in 2022, most notably when we welcomed Asia's first crypto assets ETFs to our markets in December, providing retail investors with exposure to digital assets in a market that has the highest standards of transparency, regulation, and financial infrastructure.

In 2022, we continued to modernise our operating model, focused on solid risk management, excellent execution, client-centricity, innovation, and collaboration.

Highlights include releasing the implementation plan and technical guide for FINI, our solution to shorten the IPO settlement cycle, and supporting market participants in their transitions. We also upgraded our Electronic Communication Platform to unify client access through Client Connect with enhanced system accessibility; and launched the Value-at-Risk (VaR) platform in our Cash Market.

The LME is also an integral part of our group-wide multi-year modernisation journey. In 2022, it set out its market structure evolution proposals, designed to enable it to modernise and adapt to emerging trends and evolving customers. The LME engaged the market on these proposals and comprehensively analysed the responses. The outcomes are designed to enhance the LME's electronic offering and provide greater transparency while preserving optionality for its diverse global customer base.

Strategic Outlook

The broader challenges of 2022 will likely persist into 2023 – inflationary pressures, geopolitical tensions, economic malaise, and the lasting effects of the Covid-19 pandemic. However, the longer-term opportunities are still there.

The massive opportunities arising from China’s ambitious decarbonisation plans will continue to grow. We will continue to see the release of Mainland China’s domestic savings, the exponential growth of investment flow in and out of the Mainland, and the acceleration of international participation in the Mainland’s economy. Moreover, the flourishing of innovation across the board, from greentech to fintech, in Asia, particularly in the Greater Bay Area, will continue to change the world in which we live.

At HKEX, we are looking at this horizon of opportunity. In the year ahead, we will continue to create the building blocks for this next phase of development. We have a great team, a clear strategy, and a firm focus on the long-term health and success of our business and our markets. We are in an excellent place to capture the opportunities ahead as we build the Marketplace of the Future.

Appreciation

The HKEX Group delivered solid results and demonstrated resilience during another challenging year globally. More importantly, it laid the groundwork for a new phase of development. This, of course, would not have been possible without our people’s talent, hard work, and dedication. I want to take this opportunity to thank every one of them for their contributions.

Our vision to build the Marketplace of the Future is predicated on our ability to remain internationally competitive and to achieve this, we need to keep attracting, nurturing, and empowering the very best talent in the world. In 2022, we were delighted to welcome some highly experienced and talented individuals to the company, including 12 new external MD hires.

I also want to express our appreciation and gratitude to the Securities and Futures Commission, the Hong Kong Monetary Authority, our market participants, our customers, partners, and stakeholders around the globe for their continued support. We are proud that together we have continued to strengthen Hong Kong’s financial markets, and we look forward to working closely with you as we build on the developments and achievements of 2022.

Finally, I would like to thank my fellow members of the Board for their support and unwavering trust.

Nicolas AGUZIN

Director and Chief Executive Officer

Hong Kong, 23 February 2023

Organisation





Board and Committees



Laura M Cha



Nicolas Aguzin



Nicholas Allen



Apurv Bagri



Cheah Cheng Hye



Anna Cheung



Susan Chow



Rafael Gil-Tienda



Benjamin Hung



Nisa Leung



Hugo Leung



Stephen Yiu



Zhang Yichen

(As of 23 February 2023)

Board

INEDs

Laura May-Lung CHA * GBM, GBS, JP (Chairman)
Nicholas Charles ALLEN
Apurv BAGRI
CHEAH Cheng Hye
CHEUNG Ming Ming, Anna
CHOW WOO Mo Fong, Susan *
Rafael GIL-TIENDA *
HUNG Pi Cheng, Benjamin * BBS, JP
LEUNG Nisa Bernice Wing-Yu * MH, JP
LEUNG Pak Hon, Hugo
YIU Kin Wah, Stephen * JP
ZHANG Yichen

Executive Director

Alejandro Nicolas AGUZIN (Chief Executive Officer)

Group Company Secretary

FU Yat Hung, David

Committees

Audit Committee

YIU Kin Wah, Stephen (Chairman)
Nicholas Charles ALLEN
CHEUNG Ming Ming, Anna
LEUNG Nisa Bernice Wing-Yu
LEUNG Pak Hon, Hugo

Board Executive Committee

Laura May-Lung CHA (Chairman)
Alejandro Nicolas AGUZIN
CHEAH Cheng Hye
CHEUNG Ming Ming, Anna
LEUNG Pak Hon, Hugo

Corporate Social Responsibility Committee

Laura May-Lung CHA (Chairman)
Alejandro Nicolas AGUZIN
CHEUNG Ming Ming, Anna
CHOW WOO Mo Fong, Susan
ZHANG Yichen

Investment Committee

CHEAH Cheng Hye (Chairman)
HUNG Pi Cheng, Benjamin
LEUNG Pak Hon, Hugo
ZHANG Yichen

Listing Operation Governance Committee

CHOW WOO Mo Fong, Susan (Chairman)
Renu BHATIA ¹
LEUNG Pak Hon, Hugo
Keith Timothy POGSON ²
YIU Kin Wah, Stephen

Nomination and Governance Committee

Laura May-Lung CHA (Chairman)
Apurv BAGRI
CHEAH Cheng Hye
Rafael GIL-TIENDA
HUNG Pi Cheng, Benjamin
ZHANG Yichen

Remuneration Committee

Rafael GIL-TIENDA (Chairman)
Apurv BAGRI
Laura May-Lung CHA
CHEAH Cheng Hye
CHEUNG Ming Ming, Anna
CHOW WOO Mo Fong, Susan

Risk Committee

CHOW WOO Mo Fong, Susan (Chairman)
Nicholas Charles ALLEN
Laura May-Lung CHA
LEUNG Nisa Bernice Wing-Yu
LEUNG Pak Hon, Hugo
YIU Kin Wah, Stephen

Risk Management Committee (statutory) ^Δ

Laura May-Lung CHA ³ (Chairman)
CHAN Ka Chai, Clara ^{** 4}
CHOW WOO Mo Fong, Susan
David Allen GRIMME ^{** 5}
KWOK Pui Fong, Miranda ^{**}
LEUNG Chung Yin, Rico ^{** 6}
LEUNG Pak Hon, Hugo
SUN Yu ^{**}

* Government Appointed Director

** Appointed by the Financial Secretary

Δ Established under Section 65 of the SFO

¹ Member by virtue of being deputy chairman of the Listing Committee of the Stock Exchange

² Member by virtue of being chairman of the Listing Committee of the Stock Exchange

³ Member by virtue of being HKEX's Chairman

⁴ Member by virtue of being Executive Director (Monetary Management) of the Hong Kong Monetary Authority

⁵ Member by virtue of being the Chairman of Hong Kong Interbank Clearing Limited

⁶ Member by virtue of being Executive Director (Supervision of Markets) of the SFC

Board of Directors and Senior Management

Board of Directors



Laura May-Lung CHA GBM, GBS, JP
Chairman, INED

Aged 73

Director since 25 April 2018

Chairman since 4 May 2018

Term of office: 27 April 2022 (re-appointed) to 2024 AGM

Other positions held with the Group

HKEX – chairman of Board Executive Committee, Corporate Social Responsibility Committee, Nomination and Governance Committee, Risk Management Committee (statutory), International Advisory Council and Mainland China Advisory Group, and member of Remuneration Committee and Risk Committee

SEHK – member of Listing Nominating Committee

LME – independent non-executive director and member of Nomination Committee

LMEH – independent non-executive director

HKEX Foundation – chairman and director

Other major offices

World Federation of Exchanges – director (2018–)

Past offices

Unilever PLC (listed on Euronext Amsterdam and London Stock Exchange) – non-executive director (2013-2022)

HSBC Holdings plc * – independent non-executive director (2011-2021)

The Hongkong and Shanghai Banking Corporation Limited – chairman (2019-2021), independent non-executive director (2004-2021) and deputy chairman (2007-2019)

Unilever NV (formerly listed on Euronext Amsterdam) – non-executive director (2013-2020)

China Telecom Corporation Limited * – independent non-executive director (2008-2018)

HKEX – independent non-executive director (2006-2012)

China Securities Regulatory Commission – vice-chairman (2001-2004)

SFC – deputy chairman (1998-2001), executive director (1994-2001), senior director (1993-1994) and assistant director (1991-1993)

Coudert Brothers – lawyer (1985-1990)

Pillsbury, Madison & Sutro – lawyer (1982-1985)

Public service

Listing Policy Panel – member (2018–)

China Securities Regulatory Commission – vice-chairman of International Advisory Council (2004–)

Qualifications

Bachelor of Arts (University of Wisconsin, US)

Juris Doctor (Santa Clara University, US)

State Bar of California (US)

Honorary Fellow (Hong Kong Securities and Investment Institute)

Honorary Doctorate (The Hong Kong Polytechnic University)

* Listed on the Stock Exchange



Alejandro Nicolas AGUZIN
Executive Director, Chief Executive Officer

Aged 54
Joined on 24 May 2021
Chief Executive Officer since 24 May 2021
Ex-officio member of the Board
Term of office: 24 May 2021 to 23 May 2024

Other positions held with the Group

HKEX – member of Board Executive Committee, Corporate Social Responsibility Committee and Mainland China Advisory Group

HKFE, SEHK and HKSCC – chairman

SEHK – ex-officio member of Listing Committee of the Main Board and GEM

HKEX's certain subsidiaries – director

Other directorship

MercadoLibre Inc (listed on NASDAQ) – independent director (2017~)

Past offices

JPMorgan Chase & Co (1990-2021): chief executive officer, international private bank (2019-2021), chairman and chief executive officer, Asia Pacific (2013-2020), senior country officer for Brazil (2008-2009), chief executive officer, Latin America (2005-2012), head of investment banking, Latin America (2002-2012), and head of mergers & acquisitions group, Latin America (2000-2002)

Public service

Listing Policy Panel – member (2021~)

Qualifications

Bachelor of Science in Economics (The Wharton School, University of Pennsylvania, US)



Nicholas Charles ALLEN
INED

Aged 67
Director since 28 April 2021
Term of office: 28 April 2021 (elected) to 2024 AGM

Other positions held with the Group

HKEX – member of Audit Committee and Risk Committee

LME – non-executive director

Other major offices

Link Asset Management Limited (as manager of Link Real Estate Investment Trust *) – chairman and independent non-executive director (2016~)

Mordril Properties Limited – independent non-executive director (2019~)

CLP Holdings Limited * – independent non-executive director (2009~)

Past offices

Lenovo Group Limited * – independent non-executive director (2009-2021)

RAK Rock LLC – independent non-executive director (2018-2021)

Stevin Rock LLC – independent non-executive director (2018-2021)

VinaLand Limited (formerly listed on Alternative Investment Market of London Stock Exchange) – independent non-executive director (2010-2016)

Hysan Development Company Limited * – independent non-executive director (2009-2016)

PricewaterhouseCoopers – partner (1998-2007)

Coopers & Lybrand (1977-1998): partner (1988-1998)

Qualifications

Bachelor of Arts (Economics/Social Studies) (The University of Manchester, UK)

Associate (Hong Kong Institute of Certified Public Accountants)

Fellow (The Institute of Chartered Accountants in England and Wales)

* Listed on the Stock Exchange



Apurv BAGRI
INED

Aged 63
Director since 28 April 2016
Term of office: 27 April 2022 (re-elected) to 2025 AGM

Other positions held with the Group

HKEX – member of Nomination and Governance Committee, and Remuneration Committee

Other major offices

International Wrought Copper Council – director (2013–)
Metdist Group of Companies, London – president and chief executive officer (1980–)

Public service

London Business School – chairman of governing body (2014–)
Dubai Financial Services Authority – director (2004–)

Qualifications

Bachelor of Science in Business Administration
(Bayes Business School, City, University of London, UK)
Doctor of Science (Honoris Causa) (City, University of London, UK)



CHEAH Cheng Hye
Darjah Gemilang Pangkuan Negeri
INED

Aged 68
Director since 26 April 2017
Term of office: 7 May 2020 (re-elected) to 2023 AGM

Other positions held with the Group

HKEX – chairman of Investment Committee, member of Board Executive Committee, Nomination and Governance Committee, and Remuneration Committee

Other major offices

Value Partners Group * – co-chairman and co-chief investment officer (2019–), and executive director (1993–)

Past offices

Value Partners Group * – co-chief investment officer (2010-2019), chairman (2000-2019) and chief investment officer (1993-2010)
Morgan Grenfell Group, Hong Kong – executive director, head of research and proprietary trader (1989-1993)
The Asian Wall Street Journal, Far Eastern Economic Review, Asiaweek, Hong Kong Standard and The Star (Malaysia) – editor and financial journalist (1971-1989)

Public service

HKTDC Belt and Road & Greater Bay Area Committee – member (2019–)
Listing Policy Panel – member (2018–)

Qualifications

Honorary Fellow (The Hong Kong University of Science and Technology)

* The holding company of the group, namely Value Partners Group Limited, has been listed on the Stock Exchange since 2007. In October 2000, Value Partners Limited (“VPL”) and Mr Cheah (one of VPL’s dealing directors and investment adviser directors) were publicly reprimanded by the SFC for placing a number of buy orders in December 1998 which unintentionally resulted in the market price of certain stocks closing higher than they might otherwise have been, and for a number of inadequacies in VPL’s internal procedures and breaches of various regulatory requirements. For details, please refer to the SFC’s enforcement news issued on 5 October 2000.



CHEUNG Ming Ming, Anna
INED

Aged 55
Director since 28 April 2021
Term of office: 28 April 2021 (elected) to 2024 AGM

Other positions held with the Group

HKEX – member of Audit Committee, Board Executive Committee, Corporate Social Responsibility Committee and Remuneration Committee

HKEX Foundation – director

Other major offices

Trinity Acquisition Holdings Limited – independent non-executive director (2021~)

LGT Capital Partners Group Holding Ltd – director (2021~)

Past offices

Jardine Pacific Limited – chief executive (2015-2020)

FountainVest Partners – senior advisor (2013-2015)

LionRock Capital – senior advisor (2012-2013)

3i Group Plc (listed on London Stock Exchange) (2001-2012): partner (2008-2012)

Qualifications

Bachelor of Arts (Computer Science) (University of California, Berkeley, US)

Master of Business Administration (Finance) (The Wharton School, University of Pennsylvania, US)



WOO Mo Fong, Susan
(alias CHOW WOO Mo Fong, Susan)
INED

Aged 69
Director since 7 May 2020
Term of office: 27 April 2022 (re-appointed) to 2024 AGM

Other positions held with the Group

HKEX – chairman of Listing Operation Governance Committee and Risk Committee, and member of Corporate Social Responsibility Committee, Remuneration Committee and Risk Management Committee (statutory)

HKEX Foundation – director

Other major offices

Hutchison Telecommunications (Australia) Limited (listed on Australian Securities Exchange) – non-executive director (2019~)

CK Hutchison Holdings Limited * – non-executive director (2017~)

HK Electric Investments Manager Limited (trustee-manager of HK Electric Investments *) and **HK Electric Investments Limited *** – alternate director (2014~)

CK Infrastructure Holdings Limited * – alternate director (2006~)

Past offices

CK Hutchison Holdings Limited * – senior advisor (2016), and executive director and group deputy managing director (2015-2016)

Hutchison Whampoa Limited (formerly listed on the Stock Exchange) – director (2015-2016), deputy group managing director (1998-2015), and executive director (1993-2015)

Woo Kwan Lee & Lo – partner (1985-1993)

Qualifications

Bachelor of Science (Business Administration) (The University of Bath, UK)

Solicitor (Hong Kong, and England and Wales)

* Listed on the Stock Exchange



Rafael GIL-TIENDA
INED

Aged 70
Director since 29 April 2015
Term of office: 28 April 2021 (re-appointed) to 2023 AGM

Other positions held with the Group

HKEX – chairman of Remuneration Committee, and member of Nomination and Governance Committee

OTC Clear – chairman, independent non-executive director and chairman of Risk Management Committee

Other major offices

JPMorgan Chase Bank (China) Company Limited – independent non-executive director (2018~)

JP Morgan Securities (Asia Pacific) Limited – independent non-executive director (2017~)

Past offices

Oliver Wyman – chairman of Asia Pacific region (2012-2017)

Marsh & McLennan Companies – chairman of Asia Pacific region (2003-2011)

Standard Chartered Bank – head of Asian wholesale banking business (2001-2003), and head of corporate and institutional banking business, Greater China (1998-2001)

Citibank (1977-1998): country manager of Citibank for Spain (1992-1998), for Malaysia (1988-1992) and for China (1984-1988)

Qualifications

Bachelor of Arts (Philosophy, Politics and Economics) (University of Oxford, UK)

Master of Business Administration (University of California, Berkeley, US)



HUNG Pi Cheng, Benjamin BBS, JP
INED

Aged 58
Director since 25 April 2018
Term of office: 27 April 2022 (re-appointed) to 2024 AGM

Other positions held with the Group

HKEX – member of Investment Committee, and Nomination and Governance Committee

SEHK – member of Listing Nominating Committee

Other major offices

Standard Chartered Bank – chief executive officer, Asia (2021~)

Standard Chartered Bank (Hong Kong) Limited – executive director (2019~)

Standard Chartered Bank (China) Limited – chairman (2015~)

Standard Chartered Bank (Singapore) Limited – chairman (2021~)

Past offices

Standard Chartered Bank (2015-2020): chief executive officer of wealth management (2018-2020) and retail banking (2017-2020), and regional chief executive officer, Greater China & North Asia (2015-2020)

Standard Chartered Bank (Hong Kong) Limited (1992-2019): chairman (2014-2019), chief executive officer, Greater China (2014-2015) and chief executive officer and executive director, Hong Kong (2008-2014)

HKEX – member of Risk Management Committee (statutory) (2008-2010 and 2014)

Public service

Hong Kong-United States Business Council – member (2016~)

Hong Kong Institute for Monetary and Financial Research – director (2011~)

Exchange Fund Advisory Committee – member (2009~)

Qualifications

Bachelor of Arts (Business Administration) (University of Washington, US)

Master of Business Administration (University of Toronto, Canada)



LEUNG Nisa Bernice Wing-Yu MH, JP
INED

Aged 52
Director since 28 April 2021
Term of office: 28 April 2021 (appointed) to 2023 AGM

Other positions held with the Group

HKEX – member of Audit Committee and Risk Committee

Other major offices

Qiming Venture Partners – managing partner (2013~)

Zai Lab Limited * (also listed on NSDAQ) – non-executive director (2014~)

CanSino Biologics Inc * (also listed on Shanghai Stock Exchange) – non-executive director (2015~)

Past offices

Venus Medtech (Hangzhou) Inc * – non-executive director (2013-2023)¹

New Horizon Health Limited * – non-executive director (2018-2022)

Gan & Lee Pharmaceutical Holdings Ltd (listed on Shanghai Stock Exchange) – non-executive director (2009-2021)

Qiming Venture Partners – partner (2007-2013)

Qualifications

Bachelor of Science (Cornell University, US)

Master of Business Administration (Stanford University, US)

* Listed on the Stock Exchange

¹ Appointment ceased effective 30 January 2023

² Ceased to be a member of the Committee on Innovation, Technology and Re-industrialisation in December 2022



LEUNG Pak Hon, Hugo
INED

Aged 54
Director since 26 April 2017
Term of office: 7 May 2020 (re-elected) to 2023 AGM

Other positions held with the Group

HKEX – member of Audit Committee, Board Executive Committee, Investment Committee, Listing Operation Governance Committee, Risk Committee and Risk Management Committee (statutory)

OTC Clear – independent non-executive director

Other major offices

BNP Paribas – chief executive officer, Hong Kong (2019~)

BNP Paribas Securities (Asia) Limited – chief executive officer (2015~)

Past offices

BNP Paribas – head of global markets, Hong Kong (2015-2019), head of global equities and commodity derivatives, Greater China (2013-2015)

BNP Paribas Securities (Asia) Limited – deputy chief executive officer (2012-2015), head of equity syndicate and corporate equity (2010-2012), head of equity brokerage (2007-2010), head of Asia (ex-Greater China) product (2004-2007), product sales head for Taiwan (2003-2004) and deputy managing director (2000-2003)

Qualifications

Bachelor of Arts (Economics) (Simon Fraser University, Canada)



YIU Kin Wah, Stephen JP
INED

Aged 62
Director since 26 April 2017
Term of office: 28 April 2021 (re-appointed) to 2023 AGM

Other positions held with the Group

HKEX – chairman of Audit Committee, member of Listing Operation Governance Committee and Risk Committee

SEHK – member of Listing Nominating Committee

LME – independent non-executive director, chairman of Audit and Risk Committee, and member of Remuneration Committee

LME Clear – independent non-executive director, chairman of Audit Committee, and member of Nomination Committee and Remuneration Committee

Other major offices

ANTA Sports Products Limited * – independent non-executive director (2018~)

China Mobile Limited * – independent non-executive director (2017~)

Past offices

KPMG International – member of executive committee and board (2011-2015)

KPMG Asia Pacific – member of board (2011-2015) and executive committee (2009-2015)

KPMG China (including Hong Kong) (1983-2015): chairman and chief executive officer (2011-2015), deputy chairman (2010-2011), audit partner-in-charge (2007-2010), and partner (1994-2015)

Public service

Insurance Authority – chairman (2021~) and non-executive director (2015~)

Independent Commission Against Corruption Complaints Committee – member (2019~)

Exchange Fund Advisory Committee – member (2018~)

Qualifications

Professional Diploma in Accountancy (The Hong Kong Polytechnic University)

Master in Business Administration (Warwick University, UK)

Fellow (Association of Chartered Certified Accountants and Hong Kong Institute of Certified Public Accountants)

* Listed on the Stock Exchange



ZHANG Yichen

INED

Aged 59

Director since 28 April 2021

Term of office: 28 April 2021 (elected) to 2024 AGM

Other positions held with the Group

HKEX – member of Corporate Social Responsibility Committee, Investment Committee, Nomination and Governance Committee, and Mainland China Advisory Group

Other major offices

CITIC Capital Holdings Limited – chairman (2013–) and chief executive officer (2003–)

Harbin Pharmaceutical Group Co Ltd (listed on Shanghai Stock Exchange) – chairman and director (2021–)

China Vanke Co Ltd * (also listed on Shenzhen Stock Exchange) – independent non-executive director (2020–)

AsialInfo Technologies Limited * – non-executive director (2018–)

Past offices

S F Holding Co Ltd (listed on Shenzhen Stock Exchange) – director (2016-2022) ¹

Genertec Universal Medical Group Company Limited * – chairman (2012-2021) and non-executive director (2015-2021)

SINA Corporation (formerly listed on NASDAQ) – independent director (2002-2021)

Frontier Services Group Limited * – non-executive director (2020-2021)

CITIC Capital Holdings Limited – deputy chief executive officer (2002-2003)

CITIC Pacific Communications Limited – president (2000-2002)

CITIC Limited * – executive director (2000-2002)

Merrill Lynch Asia Pacific – managing director (1996-2000)

Public service

The National Committee of the Chinese People's Political Consultative Conference – member (2008–)

Qualifications

Bachelor of Science (Computer Science)

(The Massachusetts Institute of Technology, US)

* Listed on the Stock Exchange

1 Appointment ceased effective 20 December 2022

HKEX Independent Non-executive Directors also serve as the chairman, the deputy chairman, or members of hearing(s) held by the appeal committees of the regulated entities within the HKEX Group from time to time.

Group Company Secretary



FU Yat Hung, David
Group Company Secretary and
Head of Secretarial Services

Aged 58
Joined in January 2020

Past offices

The Hong Kong Chartered Governance Institute
– ex-officio member of council as past president
(2020-2022) and president (2018-2019)

HKTDC Professional Services Advisory Committee
– member (2018-2022)

Standing Committee on Company Law Reform – member
(2017-2020)

SFC – member of Takeovers and Mergers Panel and
Takeovers Appeal Committee (2015-2020)

Swire Properties Limited * – company secretary
(2010-2020)

Cathay Pacific Airways Limited *, **John Swire & Sons (HK)
Limited** and **Swire Pacific Limited** * – company secretary
(2006-2020)

Qualifications

**Bachelor of Arts (Engineering, Economics and
Management)** and **Master of Arts** (University of Oxford,
UK)

Fellow (The Hong Kong Chartered Governance Institute
and The Chartered Governance Institute)

* Listed on the Stock Exchange

Senior Management



CHAN Yiting, Bonnie
Co-Chief Operating Officer

Aged 53
Joined in January 2020
Co-Chief Operating Officer since 1 February 2023

Past offices

HKEX – Head of Listing (January 2020-January 2023) and
Head of IPO Transactions (2007-2010)

Davis Polk & Wardwell LLP – partner (2010-2019)

Public service

¹

**Board of Inland Revenue of the Government of the
HKSAR** – member (2017-)

Qualifications

Bachelor of Laws (The University of Hong Kong)

Master of Laws (Harvard University, US)

¹ Ceased to be an ex-officio member of the Standing Committee
on Company Law Reform effective 1 February 2023



LAU Bik Yun, Vanessa
Group Chief Financial Officer

Aged 50
Joined in October 2015

Past offices

HKEX – Chief Financial Officer, Hong Kong (2017-2020) and Deputy Chief Financial Officer (2015-2017)

Sanford C Bernstein (Hong Kong) Limited – vice president and senior research analyst (2011-2015)

Alcoa Inc – group chief financial officer, global rolled products group (2007-2011)

McKinsey & Company Inc (2001-2007): various professional positions including associate principal, Hong Kong (2005-2007)

PricewaterhouseCoopers (UK) (1994-2000): various professional positions including senior tax manager, mergers and acquisitions tax group (1999-2000)

Qualifications

Bachelor of Arts (Mathematics and Computation) and **Master of Arts** (University of Oxford, UK)

Associate (The Institute of Chartered Accountants in England and Wales)



NG Kit Shuen, Katherine
Head of Listing

Aged 49
Joined in July 2013
Head of Listing since 1 February 2023

Other positions held with the Group

HKFE, HKSCC and SEHK – member of Disciplinary Committee

Past offices

HKEX – Head of Policy and Secretariat Services, Listing (May 2014-January 2023), Chief Operating Officer, Listing (2020-2021), and Head of Policy, Listing (2013-2014)

Hong Kong Securities and Investment Institute – director (2014-2022), and chairman (2018-2021)

Financial Services and the Treasury Bureau of the Government of the HKSAR – political assistant to the Secretary for Financial Services and the Treasury (2008-2012)

Merrill Lynch – director, legal (2005-2008)

Linklaters – solicitor (1996-2005)

Public service

Standing Committee on Company Law Reform – ex-officio member (2023-)

World Wide Fund for Nature Hong Kong – director (2018-)

Our Hong Kong Foundation – advisor (2016-)

Qualifications

Bachelor of Arts (Law) and **Master of Arts (Law)** (University of Cambridge, UK)

Solicitor (Hong Kong, and England and Wales)

Senior Fellow (Hong Kong Securities and Investment Institute)



Richard Alan WISE
Group Chief Risk Officer

Aged 54
Joined in November 2020

Other positions held with the Group

HKFE, HKSCC and SEHK – chairman of Disciplinary Committee

Past offices

Credit Suisse AG – chief risk officer, Asia Pacific (2016-2020)

JP Morgan Chase – global head of market risk management (2012-2016)

JP Morgan Securities LLC – chief risk officer (2012-2016)

JP Morgan (1995-2012): global head of equity risk management (2007-2012), regional head of market risk management, Asia Pacific (2004-2007), head of risk management (1999-2004), and fixed income proprietary trader (1995-1999)

Qualifications

Bachelor of Arts (Mathematics) (University of Cambridge, UK)



YIU Ka Yan, Wilfred
Co-Chief Operating Officer and Head of Equities

Aged 53
Joined in April 2019
Co-Chief Operating Officer and Head of Equities since 1 February 2023

Other positions held with the Group

HKCC and SEOCH – chairman

HKFE and HKSCC – chief executive

SEHK – chief executive and chairman of Compensation Committee

Past offices

HKEX – Chief Operating Officer (November 2022-January 2023), Co-Chief Operating Officer (June-November 2022), Co-Head of Markets (August 2021-January 2023), and Head of Markets (April 2019-July 2021)

Qian Kun Futures Co Ltd – chairman (2012-2019)

Beijing Gao Hua Securities Company Limited – deputy chief executive officer and chief operating officer (2010-2019)

Goldman Sachs (Hong Kong) (2000-2010): managing director, fixed income, currency and commodities (2007-2010)

Credit Suisse First Boston (New York) – assistant vice president (1994-1999)

Public service

SFC – member of Securities Compensation Fund Committee (2020~)

Qualifications

Master of Business Administration (Stern School of Business, New York University, US)

Master of Science (Computer Science) (Stanford University, US)

Bachelor of Science (Computer Science) and **Bachelor of Business Administration** (University of Washington, US)

Vanessa Lau, Richard Wise and Wilfred Yiu also act as directors in certain HKEX's subsidiaries.

John Buckley was HKEX Head of Exchange Operations and Transformation from December 2021 until November 2022, and was HKEX Co-Chief Operating Officer from June 2022 until November 2022.

Calvin Tai was HKEX President and Chief Operating Officer from August 2021 until May 2022.

Management Committee



Nicolas Aguzin
HKEX Chief Executive Officer



Matthew Chamberlain
Group Head of Commodities and LME Chief Executive



Bonnie Y Chan
Co-Chief Operating Officer



Paul Chow
Group General Counsel



Tori Cowley
Group Chief Communications Officer



Vanessa Lau
Group Chief Financial Officer



Richard Leung
Group Chief Technology Officer



Mao Zhirong
Head of Mainland Development



Katherine Ng
Head of Listing



Kerry Rooks
Group Chief People Officer



Adam Singer
Group Chief Compliance Officer



Glenda So
Group Head of Emerging Business & FIC



Richard Wise
Group Chief Risk Officer



Wilfred Yiu
Co-Chief Operating Officer and Head of Equities

Management Discussion and Analysis

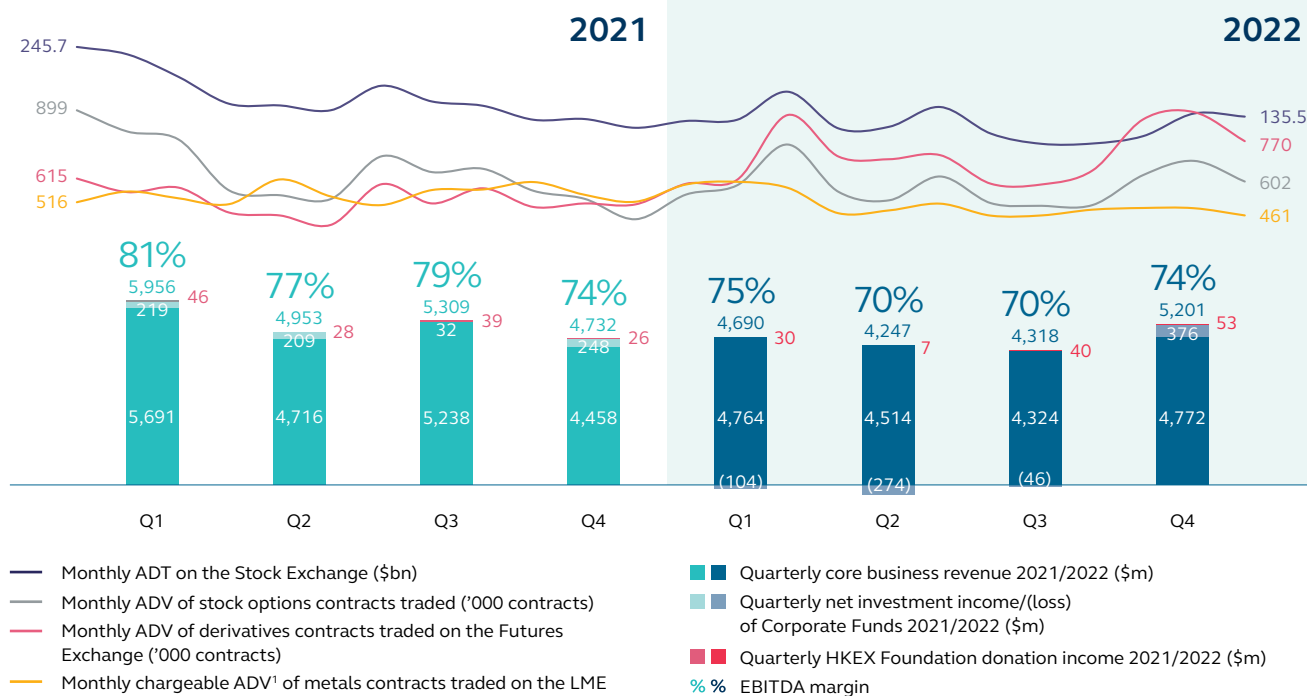




Business Review

Overview

Quarterly Results, Q1 2021 – Q4 2022



1 Chargeable ADV excludes administrative trades (Admin Trades) and other non-chargeable trades.

Fig. 1 – Market activity and Group's revenue and other income/(loss)

HKEX continued to demonstrate its resiliency and relevance in 2022 despite, at times, a challenging macroeconomic and geopolitical backdrop. Throughout the year the business remained firmly focused on the delivery of its strategy, building for the long-term and introducing a range of initiatives that will continue to support the long-term health of Hong Kong's financial markets. The second half of the year showed signs of encouraging momentum in the IPO market; and the Derivatives Market performed particularly well, recording strong volumes as global investors increasingly looked to manage their regional risk. The final quarter of the year was very good for HKEX, with the business reporting record fourth quarter revenue and profits.

Throughout the year, global market sentiment was impacted by concerns over inflation and slowing economic growth and Hong Kong was not immune to this: Headline ADT in 2022 was 25 per cent down on record 2021 volumes, to \$124.9 billion. However, the HKEX Derivatives Market performed well in 2022 with the number of derivatives contracts traded on HKFE reaching a record high and ADV¹ 33 per cent up on 2021, reflecting both increased hedging needs in a volatile market environment and increased demand for HKEX's newly launched derivatives contracts. The IPO market showed encouraging signs of recovery in the second half of the year with proceeds more than four times those raised in the first half: a total 90 new companies listed on HKEX's markets in 2022, complementing the 29 ETP listings and 368 new debt security listings. The IPO pipeline remains robust, with 93 active applications as at 31 December 2022.

1 ADV of derivatives contracts traded on the Futures Exchange and ADV of metals contracts traded on the LME were calculated based on the sum of ADV of the individual products.

Core business revenue for 2022 was \$18,374 million, 9 per cent lower than the record revenue reported in 2021, though in line with the broader long-term trend. This decline reflected reduced trading and clearing fees from lower Headline ADT and Stock Connect Northbound ADT, a decrease in depository, custody and nominee services fees from e-IPO applications and lower listing fees from fewer newly listed DWs and CBBs; this was partly offset by higher trading fees from the Derivatives Market and higher net investment income from Margin Funds. HKEX's External Portfolio was impacted by the weak overall performance of the global equities and fixed income markets, recording net fair value losses of \$486 million in 2022 (2021: gains of \$364 million). As a result, total revenue and other income declined by 12 per cent against record 2021 numbers, though this was much lower than the percentage drop in Headline ADT, reflecting the successful diversification of the Group's business in recent years.

Operating expenses increased by 12 per cent against 2021, mainly due to higher staff costs and the professional fees incurred in relation to the LME's nickel market incident.

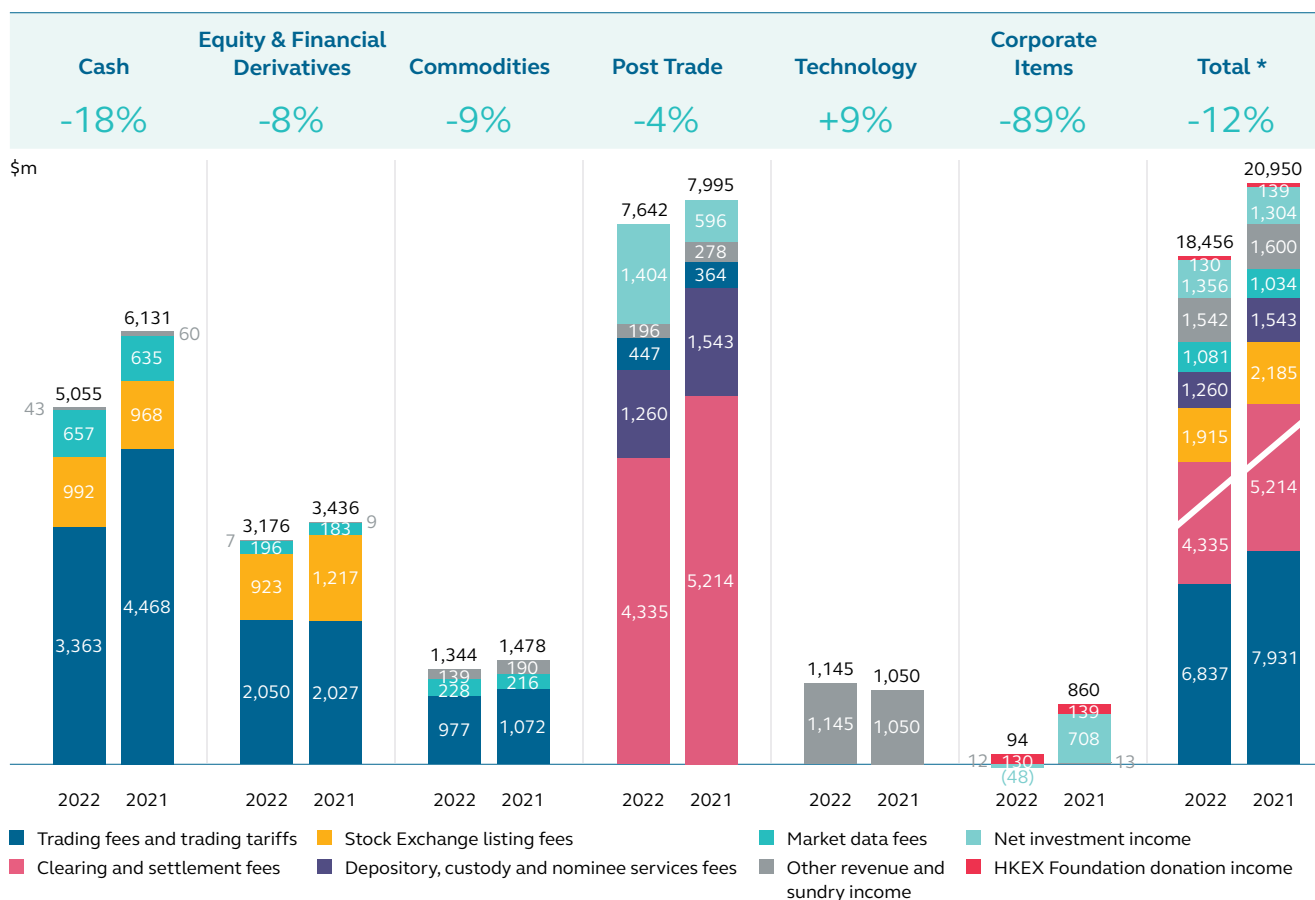
Looking ahead to 2023, sentiment has become more optimistic, reflecting better than expected recent economic data, a relaxation in global monetary and fiscal tightening and Mainland China's stated commitment to continued opening-up. Some uncertainties will persist, particularly around the strength and speed of economic recovery and the fragile situation in Ukraine; however, despite these challenges, HKEX remains very well-positioned to play an increasingly important role in today's fast-evolving, interconnected global markets.

The Group will continue to focus on its three strategic priorities: leveraging its unique China expertise and access; diversifying the business to connect capital with ideas; and actively embracing the trends and innovation that are shaping our industry and society more broadly. We remain a purpose-driven organisation, fully focused on both the success of our community and our vision, to build the Marketplace of the Future – a liquid, vibrant market that customers and stakeholders from across the world want to be part of.



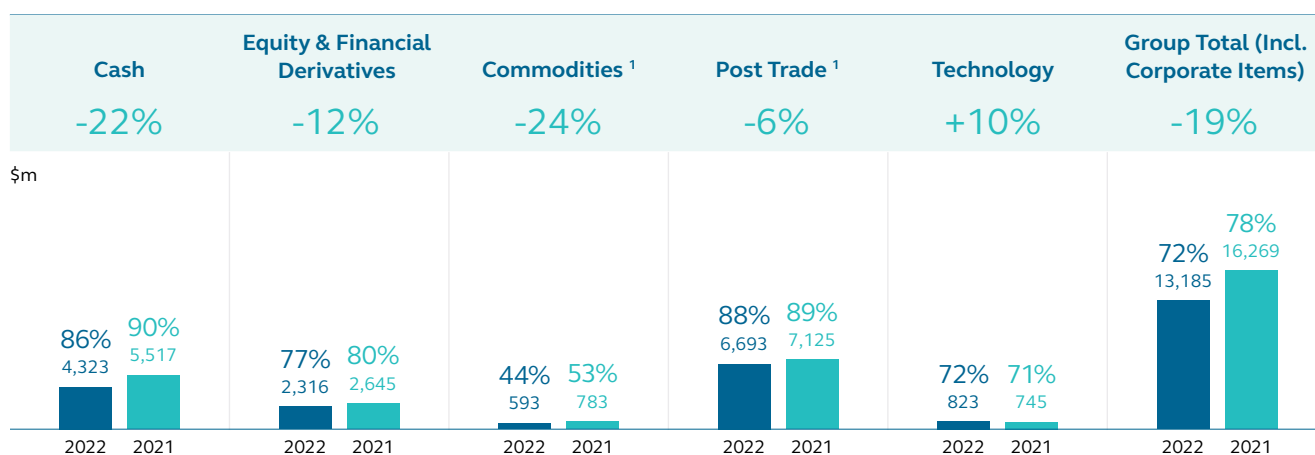
Analysis of Results and Business Update by Operating Segment

Analysis of Revenue and Other Income by Segment



* Total revenue and other income is not presented in the same scale as segmental results, but is proportionately resized.

Analysis of EBITDA and EBITDA Margin by Segment*



% EBITDA margin = EBITDA divided by revenue and other income less transaction-related expenses

* Further details of the results by segment are set out in note 4 to the Consolidated Financial Statements of this Annual Report.

¹ LME Clear EBITDA is reflected in the Post Trade segment.

Cash Segment

Key Market Indicators

	2022	2021	Change
ADT of equity products traded on the Stock Exchange ^{1,2} (\$bn)	109.0	146.6	(26%)
ADT of Northbound Trading – Shanghai-Hong Kong Stock Connect ² (RMBbn)	46.2	55.1	(16%)
ADT of Northbound Trading – Shenzhen-Hong Kong Stock Connect ² (RMBbn)	54.2	65.0	(17%)
ADT of Southbound Trading – Shanghai-Hong Kong Stock Connect ² (\$bn)	15.9	20.1	(21%)
ADT of Southbound Trading – Shenzhen-Hong Kong Stock Connect ² (\$bn)	15.8	21.6	(27%)
ADT of Northbound Bond Connect (RMBbn)	32.2 ⁴	26.6	21%
Average daily number of trades of equity products traded on the Stock Exchange ^{1,2} ('000)	1,792	1,949	(8%)
Number of newly listed companies on Main Board ³	90	97	(7%)
Number of newly listed companies on GEM	–	1	(100%)
Number of companies listed on Main Board at 31 Dec	2,257	2,219	2%
Number of companies listed on GEM at 31 Dec	340	353	(4%)
Total	2,597	2,572	1%
Market capitalisation of companies listed on Main Board at 31 Dec (\$bn)	35,582	42,273	(16%)
Market capitalisation of companies listed on GEM at 31 Dec (\$bn)	85	108	(21%)

1 Excludes DWs, CBBCs and warrants (which are included under the Equity and Financial Derivatives segment); and includes Southbound Trading under Stock Connect

2 Includes buy and sell trades under Stock Connect

3 Includes 1 transfer from GEM (2021: 2 transfers)

4 New record high in 2022

	2022 \$bn	2021 \$bn	Change
Total equity funds raised on Main Board			
– IPOs	104.6	331.3	(68%)
– Post-IPO	146.8	438.7	(67%)
Total equity funds raised on GEM			
– IPOs	–	0.1	(100%)
– Post-IPO	2.7	3.2	(16%)
Total	254.1	773.3	(67%)

Analysis of Results

Summary

	2022 \$m	2021 \$m	Change
Trading fees and trading tariffs ¹	3,363	4,468	(25%)
Stock Exchange listing fees ¹	992	968	2%
Market data fees ¹	657	635	3%
Other revenue and sundry income	43	60	(28%)
Total revenue and other income	5,055	6,131	(18%)
Operating expenses ²	(732)	(614)	19%
EBITDA	4,323	5,517	(22%)
EBITDA margin	86%	90%	(4%)

1 Excludes DWs, CBBCs and warrants (which are included under the Equity and Financial Derivatives segment)

2 Includes Listing Division costs apportioned to equity products listed on the Stock Exchange

Trading Fees and Trading Tariffs



- 2022
- 2021
- ADT of equity products traded on the Stock Exchange¹
- ADT of Northbound Trading
- Average daily number of trades of equity products traded on the Stock Exchange ('000)¹

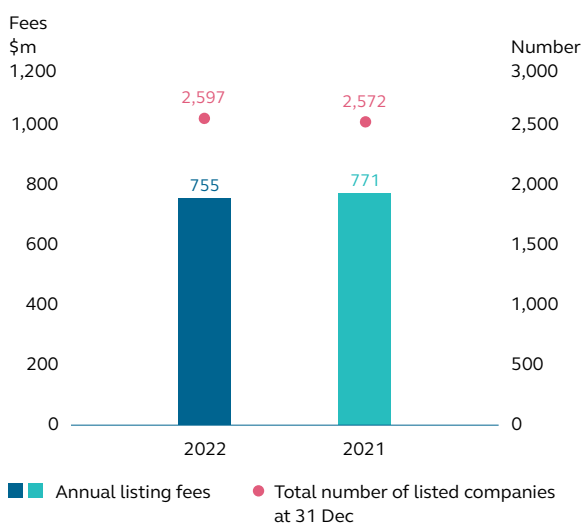
1 Excludes DWs, CBBCs and warrants (which are included under the Equity and Financial Derivatives segment); and includes Southbound Trading under Stock Connect

Trading fees decreased by \$1,060 million, or 26 per cent, from \$4,019 million to \$2,959 million, reflecting the 26 per cent decrease in equity products' ADT and lower ADT of Stock Connect Northbound Trading. Trading tariffs were down by 10 per cent due to the decrease in number of trades of equity products.

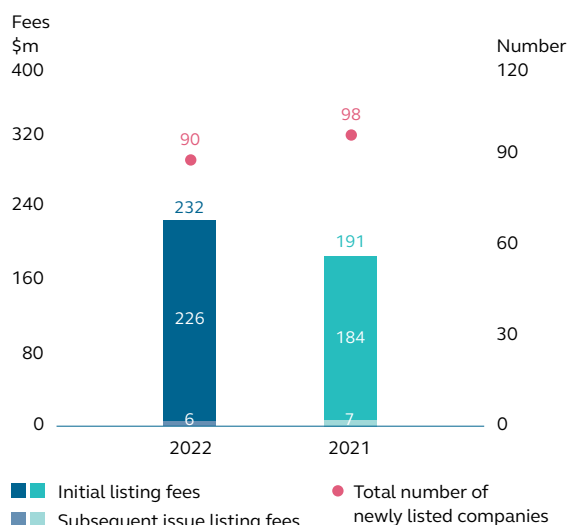
Stock Exchange Listing Fees

	2022 \$m	2021 \$m	Change
Annual listing fees	755	771	(2%)
Initial and subsequent issue listing fees	232	191	21%
Others	5	6	(17%)
Total	992	968	2%

Annual Listing Fees



Initial and Subsequent Issue Listing Fees



Annual listing fees declined by 2 per cent, reflecting lower average fee per company due to lower average nominal values of listed companies, driven by share consolidation and RMB depreciation.

Initial and subsequent issue listing fees were up 21 per cent, mainly due to an increase in forfeitures.

EBITDA

Operating expenses increased by 19 per cent reflecting higher Listing Division allocated costs to the segment, due to higher listing fees from IPO forfeitures (Cash Segment) and lower listing fees received from newly listed DWs and CBCs (Equity and Financial Derivatives Segment); and higher staff costs from payroll adjustments and increased headcount for strategic initiatives. EBITDA margin decreased from 90 per cent to 86 per cent, due to the decrease in total revenue and other income and increase in operating expenses.

Business Update

Despite tighter macro-environment backdrop, geopolitical tension, and the continued impact of the pandemic, the Hong Kong Cash Market remained robust and resilient in 2022. Headline ADT for the Cash Market was \$124.9 billion in 2022, a decrease of 25 per cent against the record 2021 which was skewed by the exceptionally buoyant Q1 2021 trading activity.

Stock Connect

	2022	2021	Change
Northbound Trading value (RMBbn)	23,283	27,630	(16%)
Southbound Trading value (\$bn)	7,236	9,343	(23%)
Total revenue and other income ¹ (\$m)	2,268	2,724	(17%)

¹ \$1,683 million of which arose from trading and clearing activities (2021: \$2,123 million)

Stock Connect operated smoothly and resiliently in 2022, with Northbound and Southbound ADT of RMB100.4 billion and \$31.7 billion respectively, generating revenue and other income of \$2,268 million in 2022 (2021: \$2,724 million).

Key developments of Stock Connect in 2022

- **ETFs included into Stock Connect:** Effective 4 July 2022, eligible ETFs were included in Stock Connect, supporting the continued growth and development of the ETF ecosystem in both Hong Kong and Mainland China. As at 31 December 2022, there were five eligible Southbound ETFs and 83 eligible Northbound ETFs. Since commencement, the ADT for Southbound and Northbound ETFs were \$908 million and RMB67 million respectively, reaching daily record highs of \$5,390 million and RMB504 million on 29 November 2022 and 25 November 2022 respectively
- **Trading calendar enhancements:** On 12 August 2022, the SFC and the CSRC announced that the trading calendar between Hong Kong and Mainland China in relation to Stock Connect would be enhanced to facilitate trading on all days where both the Hong Kong and Mainland markets are open, subject to regulatory approval. The preparation time for implementing the enhancement would take approximately six months
- **Stock Connect expansion:** On 19 December 2022, the SFC and the CSRC announced an in-principle agreement to further expand eligible stocks in Stock Connect. Under the proposal, primary-listed international companies in Hong Kong that fulfil certain eligibility criteria, will become eligible for Southbound Trading; constituent stocks of the SSE A-Share Index and SZSE Composite Index that fulfil certain eligibility criteria, as well as A-shares of A+H companies will be eligible for Northbound Trading. The expansion meets growing investor demand for a broader range of products and further deepens the cross-border market accessibility of the Stock Connect programme

Market Structure Development

Throughout the year HKEX continued to enhance its market microstructure to increase its competitiveness and to enhance operational performance. On 13 December 2022, HKEX announced plans to introduce a new HKD-RMB Dual Counter Model and a Dual Counter Market Making Programme in its securities market, further supporting the listing, trading and settlement of RMB counters in Hong Kong. HKEX expects to commence onboarding for these initiatives in 1H 2023, subject to regulatory approval and market readiness.

Following the SFC's announcement to introduce a new Hong Kong Investor Identification Regime (HKIDR) in 2021, HKEX have been working closely with the SFC and market participants to prepare for the implementation of the HKIDR. On 12 December 2022, the SFC announced that the HKIDR will be launched on 20 March 2023. The implementation of the HKIDR is expected to enable more effective and timely surveillance, reinforce market integrity and enhance investor confidence.

Issuer Business

The macroeconomic and geopolitical backdrop led to weak market sentiment and softness in the global IPO market. However, despite this, HKEX remained one of the world's leading fundraising centres, with a total of 90 company listings raising \$104.6 billion in 2022. After a relatively quiet 1H 2022, the Hong

Kong IPO market showed good signs of recovery in 2H 2022, with 63 IPOs raising a total of \$84.9 billion, more than four times the proceeds raised in 1H 2022. The IPO pipeline remained robust throughout the year, with 93 active applications as at the end of 2022.

New economy listings continued to dominate Hong Kong's IPO market in 2022, with HKEX welcoming 62 new economy company listings, contributing 65 per cent of IPO funds raised during the year. In 2022, 11 US-listed Chinese companies completed homecoming listings in Hong Kong, including three secondary listings (NIO, Tencent Music and 360 DigiTech) and eight dual-primary listings (Zhihu, Beike, OneConnect, Tuya, Noah, MINISO, Kanzhun and Kingsoft Cloud).

Following the introduction of the listing regime for special purpose acquisition companies (SPACs) at the beginning of the year, HKEX welcomed five new SPAC listings in 2022, raising a total of \$5.0 billion.

On 7 July 2022, HKEX launched a new digital investor relations platform, IR Connect. The new portal supports Hong Kong listed issuers in facilitating regular dialogue with global investors and the international analyst community and promotes enhanced connectivity in Hong Kong's markets. In its initial phase of roll-out, IR Connect provides listed issuers with free access to shareholder analysis and market data, key stock statistics and research ratings.

ETF Market Development

ADT of ETPs, which include ETFs and L&I Products, surged to \$12.0 billion in 2022 (2021: \$7.7 billion), surpassing 2015 as ETPs' best performing year ever. HKEX listed ETPs recorded the highest single day turnover of \$38.1 billion on 16 March 2022. The increase in trading activity was driven by foundational ecosystem investments and initiatives over the years, that have increased product diversity, improved market efficiency and reduced trading costs.

HKEX ETP new product listings continue to expand, with 29 new ETPs listed in 2022, including the first metaverse-themed ETF, the first carbon futures ETF, the first blockchain ETF, as well as Asia's first crypto asset ETFs. The listing of the first Bitcoin futures ETF and Ether futures ETF in Hong Kong marks an important milestone for the virtual asset ecosystem in Asia.

On 3 May 2022, the Volatility Control Mechanism (VCM) was expanded to cover ETPs to further safeguard market integrity from extreme price volatility.

Bond Connect

In 2022, Bond Connect continued to cement its position as a preferred channel for international investors, evidenced by robust growth in trading volumes and the number of newly registered investors, despite macroeconomic volatility.

Northbound Bond Connect ADT has been setting record highs every year since its launch in 2017, reaching RMB32.2 billion in 2022, up 21 per cent compared with 2021. Trading volumes in November 2022 reached a monthly record high of RMB823.9 billion, trading volumes on 19 January 2022 recorded a daily record high of RMB69.8 billion and the number of trading tickets reached a daily record high of 1,123 on 30 November 2022.

Market participation in Northbound Bond Connect continued to grow throughout 2022 and investor coverage continued to expand globally, with Brazil and Greece being the latest additions. As at 31 December 2022, a total of 784 registered investors (at entity level) from over 30 jurisdictions globally participated in Bond Connect, up 8 per cent from 728 registered investors as at 31 December 2021.

Key developments of Bond Connect in 2022

- On 4 July 2022, Bond Connect celebrated its 5th anniversary with the announcement of the planned launch of Swap Connect, which will enable investors to participate in the financial derivatives markets in the Mainland and Hong Kong
- On 4 July 2022, a new Northbound primary service was launched, which allows offshore investors to participate in China Interbank Bond Market (CIBM) new issuances directly with onshore underwriters through BCCL's ePrime system
- Effective 11 July 2022, BCCL lowered its service fee for Bond Connect for the third time since 2017, demonstrating its commitment to further facilitate international participation in the CIBM and reducing international investors' trading costs

Listed Bond Market Development

In 2022, 368 new debt securities were listed on the Stock Exchange, with a total issuance amount of \$780 billion. Among these were 75 new green/ESG-related bond listings, raising a total of \$228 billion (2021: 95 listings raising \$283 billion). Total turnover value of debt securities during the year reached \$133 billion, an increase of 28 per cent compared with 2021.

Sustainable Finance

HKEX's Sustainable and Green Exchange (STAGE) continued to gain support from the market and as at 31 December 2022, there were a total of 115 sustainable-focused products displayed on STAGE, including green, social, sustainable or similar bonds, and ESG-related ETPs, from a range of issuers and sectors.

In 2022, HKEX continued its contribution and advocacy towards achieving a low-carbon global economy, with a number of key initiatives set out below.

Key initiatives relating to Carbon and ESG in 2022

- In March 2022, HKEX signed a **MOU with the China Emissions Exchange (CEEX)** to jointly explore the development of a voluntary carbon emission reduction programme in the Guangdong-Hong Kong-Macao Greater Bay Area
- In July 2022, HKEX partnered with 12 leading regional corporates and financial institutions to launch the **Hong Kong International Carbon Market Council**. The focus of the collaboration was to develop an international carbon market, contributing to the realisation of carbon neutrality goals and the development of the green and sustainable finance ecosystem in Hong Kong, Mainland China and beyond
- On 28 October 2022, **HKEX launched Core Climate**, a new international carbon marketplace that seeks to connect capital with climate-related products and opportunities in Hong Kong, Mainland China, Asia and beyond. Core Climate aims to provide an easy-access, one stop and integrated carbon marketplace that includes trading, custody and settlement functions for corporates, investors and project owners across the climate value chain. Since its launch, the platform recorded more than 40 trades by over 20 participants, representing a total volume of around 400,000 tonnes of carbon credits
- Throughout 2022, **HKEX hosted a number of 'ESG Academy' events**, promoting strong ESG stewardship amongst listed issuers and the listed issuer community. These included events focused on De-carbonisation and Diversity
- **HKEX hosted its inaugural HKEX Impact Summit** in December, connecting corporate change-makers and social innovators, facilitating a valuable two-way dialogue on corporate philanthropy and fostering stronger bonds between businesses and society. The Impact Summit explored a broad range of topics on philanthropy trends, new models of non-governmental organisation (NGO) governance and projects that exemplify the creation of shared value

Market Surveillance and Compliance

Throughout 2022, HKEX has continued its efforts in promoting transparency and a strong compliance culture across our business and markets, with a number of key initiatives, as set out below.

Key initiatives on promoting market surveillance and compliance in 2022

- Conducted the 2022 Annual Attestation and Inspection Programme with a focus on three areas: (1) China Connect rules, (2) risk management and (3) clearing rules obligations
- Migrated various surveillance related functions to an enhanced Electronic Communication Platform (ECP), optimising the client experience
- Developed and implemented new Large Open Position (LOP) Reporting arrangements for Derivatives Holiday Trading
- Hosted several education seminars and compliance sharing session, highlighting recent updates to HKEX rules, regulations and compliance issues

Listing Regulation

In 2022, the Stock Exchange issued various proposals and conclusions on Listing Rules amendments, as set out in the following table.

Key Proposals and Conclusions in 2022

	Consultation paper ¹	Consultation conclusions ¹	Effective date of changes (if any)
Proposed Amendments to Listing Rules relating to Share Schemes of Listed Issuers	October 2021	July 2022	1 January 2023
Listing Regime for Specialist Technology Companies	October 2022	1H 2023 (tentative)	–
Proposals to Expand the Paperless Listing Regime and Other Rule Amendments	December 2022	2H 2023 (tentative)	–

¹ All the consultation papers and conclusions are available under the News Centre (Market Consultations) section of the HKEX Market website.

Key Initiatives by the Stock Exchange to Promote Issuers' Self-compliance with the Listing Rules

- Published new guidance letters on (i) guidance for overseas issuers; (ii) change of listing status from secondary listing to dual-primary or primary listing; and (iii) Special Purpose Acquisition Companies
- Published semi-annual (i) Listing Division Newsletter; (ii) Listed Issuer Regulation Newsletter; and (iii) Enforcement Bulletin
- Published (i) Review of Issuers' Annual Reports – 2021 and (ii) 2022 Analysis of ESG Practice Disclosure
- Launched “Board Diversity & Inclusion in Focus” repository to aid access to information on and transparency around board diversity
- Launched an e-learning module on trading arrangements for corporate actions as part of the new e-learning series on ongoing compliance requirements under the Listing Rules

Details of the consultations and other main policy changes and updates arising in 2022, as well as the proposals under review in 2023 and beyond, are set out in the 2022 Listing Committee Report.

IPO Processing, Compliance and Monitoring

The following tables illustrate the work of the Stock Exchange in processing new listings and monitoring issuers' compliance for the purposes of maintaining an orderly, informed, and fair market under Section 21 of the SFO.

Stock Exchange's IPO Work

	2022	2021
Number of listing applications vetted ¹	318	408
Number of applications brought to the Listing Committees (or their delegates) for decisions ²	126	118
– within 120 calendar days	21	48
– between 121 to 180 calendar days	28	47
– after more than 180 calendar days	77	23
Number of applications for which approval was granted in principle ³	153	153
Number of requests for guidance from listing applicants or their advisers seeking clarifications of listing matters	111	209
– Average response time (in business days)	14	14
Number of listing applications for transfer of listing from GEM to Main Board accepted	1	5
Applications listed ⁴	120	132
New listing applications rejected ⁵	–	1
New listing applications withdrawn	5	9
New listing applications returned	–	2
Application in process at year-end	65	131

1 Comprises 187 (2021: 316) new applications and 131 (2021: 92) existing applications brought forward from previous year

2 Refers to listing applications heard by the Listing Committees (or their delegates) for the first time and excludes Chapter 20 listing applications

3 Includes 27 (2021: 35) investment vehicles. At the end of 2022, 28 (2021: 23) approved applications had not yet been listed, and 32 (2021: 15) approved applications had lapsed during the year

4 Includes 30 (2021: 34) investment vehicles listed on Main Board and no deemed new listings (2021: Nil)

5 No rejection decision in 2022 (2021: Nil) was subsequently reversed upon review.

Number of Compliance and Monitoring Actions

	2022	2021
• Announcements of issuers vetted	55,954	65,315
• Circulars of issuers vetted	3,182	3,296
• Share price and trading volume monitoring actions undertaken ¹	7,045	12,541
• Complaints handled	1,098	1,075
• Cases (including complaints) referred to Listing Enforcement Department for investigation	71	93

¹ In 2022, monitoring actions undertaken included 424 enquiries (2021: 608) on unusual share price and trading volume movements, and the actions undertaken led to 24 resumption announcements (2021: 30) on trading suspensions.

Long Suspension

Status of Long Suspended Companies	Main Board		GEM	
	2022	2021	2022	2021
Resumption of trading of securities during the year	31	26	7	6
Cancellation of listing after expiry of prescribed remedial periods during the year	30	18	10	12
Cancellation of listing under grandfathered provisions during the year (Main Board Rule 6.01A(2)(a) or (c) or GEM Rule 9.14A(2)(b))	6	3	-	1
Voluntary withdrawal of listing during the year	2	2	-	-
Companies suspended for 3 months or more at year-end	89	90	17	16

Updates on the work in respect of listed companies' compliance and insights and observations that may assist listed companies in their own compliance, can be found in the semi-annual "Listed Issuer Regulation Newsletter".

Listing Enforcement

The enforcement statistics set out below represent a high level overview of the enforcement work undertaken in 2022 by the Stock Exchange.

Enforcement Statistics

	2022	2021
Cases ^{1,2,3}	141	164
Public sanctions ⁴	29	35
Regulatory letters ⁵	19	12

¹ Figures represent cases handled by Listing Enforcement in 2022 (including those carried over from the previous year and those ongoing at year-end).

² At the end of 2022, there were 37 ongoing investigations (2021: 61).

³ Out of the enforcement cases opened in 2022, none of them (2021: 3) originated from complaint.

⁴ The number of investigation cases that resulted in a public sanction. Actions taken at a lower level in the same case, e.g., private reprimand, are not included.

⁵ The number of cases involving issuance of at least one regulatory letter (i.e., a warning or guidance letter) where, following investigation, disciplinary proceedings before the Listing Committee were not considered appropriate against any party. These letters are recorded as part of the compliance history for the relevant party.

Further details and information relating to enforcement work (including the Stock Exchange's general approach, disciplinary procedures and recent cases) can be found on the HKEX Market website and via the semi-annual publication "Enforcement Bulletin", and are also included in the 2022 Listing Committee Report.

Costs of the Listing Function

The costs associated with the front line regulation of listed issuers, performed by the Listing Committee and the Listing Division, are absorbed by the Cash and Equity and Financial Derivatives segments in proportion to the listing fee income of the two segments.

Equity and Financial Derivatives Segment

Key Market Indicators

	2022	2021	Change
ADT of DWs, CBBCs and warrants traded on the Stock Exchange (\$bn)	15.9	20.1	(21%)
Average daily number of trades of DWs, CBBCs and warrants traded on the Stock Exchange ('000)	351	416	(16%)
ADV of derivatives contracts traded on the Futures Exchange ¹ ('000 contracts)	712 ²	536	33%
ADV of stock options contracts traded on the Stock Exchange ('000 contracts)	588	637	(8%)
Number of newly listed DWs	11,874	16,684	(29%)
Number of newly listed CBBCs	35,017	42,807	(18%)
ADV of contracts traded during After-Hours Trading (AHT) ¹ ('000 contracts)	107 ²	68	57%

	At 31 Dec 2022	At 31 Dec 2021	Change
Open interest of futures and options ¹ ('000 contracts)	10,938	9,916	10%

1 Excludes London Metal Mini Futures, Gold Futures, Silver Futures and Iron Ore Futures contracts (which are included under the Commodities segment)

2 New record high in 2022

Analysis of Results

Summary

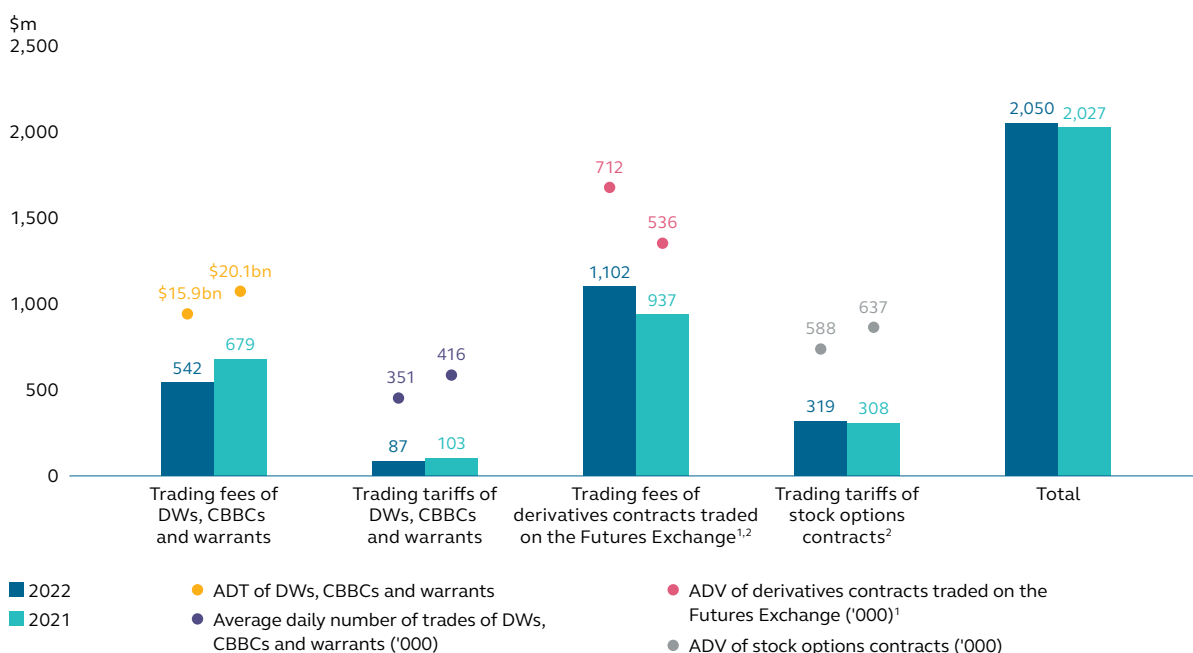
	2022 \$m	2021 \$m	Change
Trading fees and trading tariffs ¹	2,050	2,027	1%
Stock Exchange listing fees	923	1,217	(24%)
Market data fees ¹	196	183	7%
Other revenue and sundry income	7	9	(22%)
Total revenue and other income	3,176	3,436	(8%)
Less: Transaction-related expenses	(165)	(126)	31%
Total revenue and other income less transaction-related expenses	3,011	3,310	(9%)
Operating expenses ²	(695)	(665)	5%
EBITDA	2,316	2,645	(12%)
EBITDA margin ³	77%	80%	(3%)

1 Excludes cash equities (which are included under the Cash segment)

2 Includes Listing Division costs apportioned to DWs, CBBCs and warrants listed on the Stock Exchange

3 EBITDA margin is calculated based on EBITDA divided by total revenue and other income less transaction-related expenses.

Trading Fees and Trading Tariffs



1 Excludes London Metal Mini Futures, Gold Futures, Silver Futures and Iron Ore Futures contracts (which are included under the Commodities segment)

2 Excludes trading fees and trading tariffs allocated to the Post Trade segment (Derivatives contracts traded on the Futures Exchange – 2022: \$352 million; 2021: \$260 million; stock options contracts – 2022: \$95 million; 2021: \$104 million)

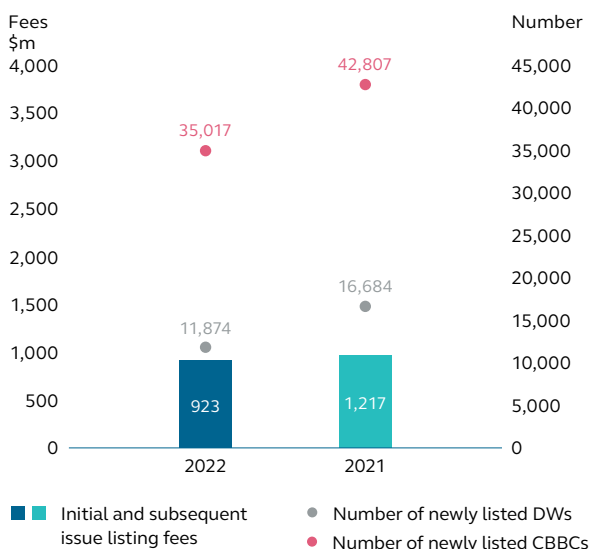
Trading fees and trading tariffs for the segment are generated from both the trading of derivatives on the Stock Exchange (DWs, CBBCs, warrants, and stock options); and the trading of futures and options on the Futures Exchange. A portion of the trading fees and trading tariffs for futures and options contracts is allocated to the Post Trade segment, as the trading and clearing fees of these products are bundled together in the form of trading fees and trading tariffs.

Trading fees and trading tariffs from DWs, CBBCs and warrants decreased by \$153 million, or 20 per cent, to \$629 million (2021: \$782 million), attributable to the 21 per cent decrease in ADT and the 16 per cent decrease in the average daily number of trades.

Derivatives trading fees of the Futures Exchange increased by \$165 million, or 18 per cent, reflecting the increase in the number of derivatives contracts traded during the year, reaching a record high in 2022. The increase was partly offset by lower fees per contract, attributable to fee waivers or discounts granted for certain newly launched products and a lower proportion of higher fee contracts (including HSI futures and options) being traded in 2022. Together with the trading fees allocated to the Post Trade segment and the clearing fees received from Participants, the total trading and clearing fees generated from derivatives contracts traded on the Futures Exchange amounted to \$1,489 million in 2022 (2021: \$1,225 million).

Despite an 8 per cent decrease in ADV, trading tariffs of stock options contracts rose by \$11 million, or 4 per cent, as a larger proportion of higher fee contracts was traded in 2022.

Stock Exchange Listing Fees



Stock Exchange listing fees for the segment are mainly derived from initial and subsequent issue listing fees for DWs and CBBCs. The fees decreased by \$294 million or 24 per cent, reflecting the decrease in number of newly listed DWs and CBBCs compared with the record 2021.

EBITDA

Transaction-related expenses include licence fees and other costs which directly vary with trading transactions. These expenses increased by \$39 million, or 31 per cent, mainly due to an increase in licence fees for the higher number of derivatives contracts traded.

Operating expenses increased by \$30 million, 5 per cent, due to higher staff costs associated with new initiatives and an increase in IT maintenance costs, as a result of upgrades to the Derivatives platform and networks, partly offset by lower Listing Division allocated costs. EBITDA margin decreased from 80 per cent to 77 per cent, reflecting the decrease in total revenue and other income less transaction-related expenses and increase in operating expenses.

Business Update

Driven by the increased popularity of newly launched products and an increase in cross product trading activities, the total number of futures and options contracts traded² in 2022 reached a record high of 319,847,360, up 11 per cent on 2021. HSCEI Futures and Hang Seng TECH Index Futures were major contributors to growth, reaching record high ADV of 183,068 contracts and 75,923 contracts respectively, a 43 per cent and 416 per cent increase compared with 2021 respectively.

In addition, ADV of derivatives contracts traded on HKFE² and ADV of contracts traded during AHT² also recorded all-time highs in 2022, reaching 712,123 contracts and 107,474 contracts respectively.

² Excludes London Metal Mini Futures, Gold Futures, Silver Futures and Iron Ore Futures contracts (which are included under the Commodities segment)

New Record Highs – Full Year Trading Volume

	2022 Number of contracts	Pre-2022 record Number of contracts
Total Futures and Options ¹	319,847,360	295,820,120 (2018)
HSCEI Futures	45,034,706	37,451,281 (2018)
Hang Seng TECH Index Futures	18,677,024	3,650,057 (2021)
RMB Currency Futures – USD/CNH Futures	3,499,105	1,938,891 (2019)
Weekly HSI Options	2,734,821	2,078,915 (2021)
MSCI Taiwan (USD) Index Futures	1,929,068	1,566,224 (2021)

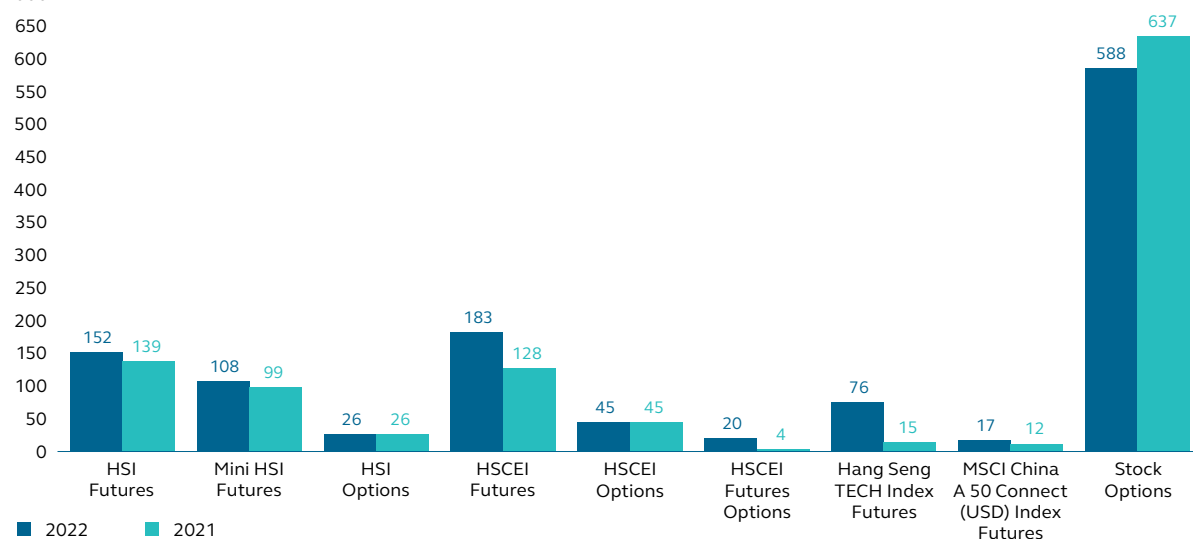
1 Excludes London Metal Mini Futures, Gold Futures, Silver Futures and Iron Ore Futures contracts (which are included under the Commodities segment)

New Record Highs – Single-day Trading Volume and Open Interest

	Single-day trading volume		Open interest	
	Date (2022)	Number of contracts	Date (2022)	Number of contracts
HSI Futures Options	26 May	49,375	15 Dec	141,586
Mini HSI Futures	N/A	N/A	29 Sep	31,150
Weekly HSI Options	4 Nov	29,065	9 Dec	19,701
HSCEI Futures	28 Nov	578,563	28 Dec	758,877
HSCEI Futures Options	5 Dec	70,542	15 Dec	1,079,146
Mini HSCEI Options	25 Nov	40,319	28 Nov	84,583
Hang Seng TECH Index Futures	25 Oct	306,517	29 Dec	187,004
Hang Seng TECH Index Options	28 Sep	6,947	25 Nov	38,788
MSCI China A 50 Connect (USD) Index Futures	16 Feb	65,682	18 Jan	42,718
MSCI Japan Net Total Return (USD) Index Futures	15 Jun	31,792	17 Jun	18,262
MSCI China Net Total Return (USD) Index Futures	13 Dec	23,566	14 Jun	34,522
MSCI Hong Kong Net Total Return (USD) Index Futures	13 Sep	10,040	13 Sep	8,691
MSCI Taiwan Net Total Return (USD) Index Futures	N/A	N/A	16 Dec	31,697
RMB Currency Futures – USD/CNH Futures	28 Oct	47,104	N/A	N/A
RMB Currency Futures – Mini USD/CNH Futures	25 Apr	30,203	14 Mar	11,480

Average Daily Volume of Major Futures and Options Contracts

Number of contracts
'000



Equity Futures and Options Market Development

The Hang Seng TECH Index Products continued to gain traction during the year, recording several daily record highs for volume and open interest (OI). Enhancements were made to the product suite in November 2022 to allow investors to better manage their risks, including the introduction of Hang Seng TECH Index Options in the AHT Session, and the introduction of additional contract months for Hang Seng TECH Index Futures and Hang Seng TECH Index Options.

Since the introduction of the two physically-settled Options on Futures Contracts (HSI Futures Options and HSCEI Futures Options) in 2021, ADV of the two products increased more than four fold compared with 2021³ and OI of these products at 31 December 2022 increased more than seven fold compared with 31 December 2021. HSCEI Futures Options attained several daily record volume highs throughout 2022, with the latest record being 70,542 contracts traded on 5 December 2022. In view of the increasing popularity of these products, HKEX enhanced its offering with the introduction of Hang Seng TECH Index Futures Options on 28 November 2022. Since launch, 10,641 contracts have been traded; and OI has been steadily increasing and stood at 9,761 contracts as of 31 December 2022.

The trading fee waiver on MSCI China A 50 Connect (USD) Index Futures has been replaced by a 50 per cent market-wide trading fee discount, effective 1 July 2022. ADV of this product reached 16,882 contracts in 2022, a 46 per cent increase against ADV in 2021⁴; and the number of contracts traded reached a daily record high of 65,682 contracts on 16 February 2022.

Market Structure Development

Derivatives Holiday Trading was successfully launched on 9 May 2022. The initiative enabled investors to actively manage their non-HKD derivatives portfolios during Hong Kong holidays. There have been seven holiday trading days since launch and operations have been smooth. A total of 66,509 contracts were traded during the holiday trading days, and the ADV of the products traded on the seven holiday trading days was close to 40 per cent of the ADV of the same products during 2022.

In view of the increasing liquidity and volatility of the Hang Seng TECH Index Futures market, the Futures Exchange applied a Volatility Control Mechanism

and Dynamic Price Banding Mechanism to the market, effective from 17 October 2022. These mechanisms are designed to protect the market from extreme volatility and prevent potential market disruption caused by error orders in the event that prices significantly deviate from the prevailing market.

On 21 November 2022, HKEX revised the T Session closing time from 16:30 to 18:30 for selected MSCI Price Return, MSCI Net Total Return and Currency Futures and Options. This revision allows investors to capture the changes in the underlying market movements in the same trading session without interruption, so as to better manage their exposures and to minimise any mark-to-market discrepancy between the futures/options and underlying instruments.

Fixed Income and Currency (FIC) Development

In 2022, the RMB currency derivatives market continued to grow, reflecting increased market demand for currency risk management tools to hedge the volatile CNH FX spot market. USD/CNH Futures contract celebrated its 10-year anniversary in September 2022 and its trading volume set a new annual record of 3,499,105 contracts in 2022, more than double compared with 2021; the contract also reached a daily record high of 47,104 contracts on 28 October 2022. The cash-settled mini USD/CNH Futures contract, which was launched in 2021, continued to gain traction and set a daily record high of 30,203 contracts on 25 April 2022; its annual trading volume in 2022 was 1,001,190 contracts, up 26 per cent compared with 2021.

Following the support explicitly expressed by the CSRC in September 2022, HKEX plans to launch China Treasury Bond Futures, which will provide international investors additional risk management tools for China's onshore bond markets.

Structured Products

Hong Kong was the world's largest structured products market for the 16th consecutive year. Despite the challenging market conditions in 2022, the structured products market remained vibrant and diverse. During 2022, a total of 46,891 structured products were listed. ADT of CBBCs, DWs and warrants was \$15.9 billion in 2022, accounting for 13 per cent of Headline ADT.

3 During the period since launch on 23 August 2021 to 31 December 2021

4 During the period since launch on 18 October 2021 to 31 December 2021

Throughout the year, HKEX strived to expand and diversify the range of products and underlyings, providing customers and global investors with more choice and opportunity in Hong Kong's markets. On 8 August 2022, HKEX welcomed the listing of Hong Kong's first A-share structured products, the MSCI China A 50 Connect Index DWs. The products offer investors a capital efficient China A-share risk management tool, marking a significant milestone in the development of Hong Kong's A-share ecosystem.

As at 31 December 2022, there were a total of 75 DWs listed by seven issuers.

HKEX expanded its range of CBBCs by reintroducing US indices in 2022, broadening investor opportunity to hedge overseas market risk. US index CBBCs made their return on 14 September 2022, with a total of 68 new listings up to 31 December 2022. US index structured products recorded an ADT of \$171.2 million in 2022.

Commodities Segment

Key Market Indicators

	2022 '000 lots	2021 '000 lots	Change
ADV of metals contracts traded on the LME			
– Aluminium	210	229	(8%)
– Copper	119	120	(1%)
– Zinc	85	87	(2%)
– Nickel	47	65	(28%)
– Lead	39	41	(5%)
– Others	6	5	20%
Total chargeable ADV excluding Admin Trades ¹	506	547	(7%)
Chargeable Admin Trades ¹	28	25	12%
Other non-chargeable trades	–	1	(100%)
Total ADV	534	573	(7%)

¹ Admin Trades are chargeable at lower fee rate of US\$0.04 per contract.

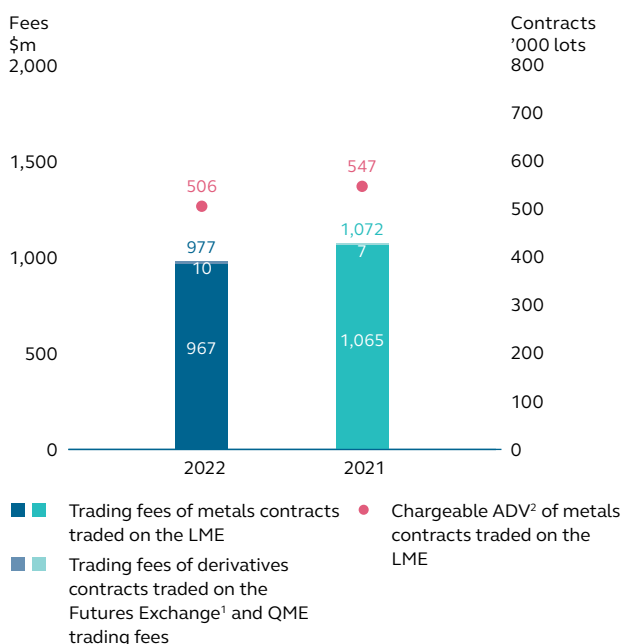
	At 31 Dec 2022 '000 lots	At 31 Dec 2021 '000 lots	Change
Total futures market open interest	1,438	1,702	(16%)

Analysis of Results

Summary

	2022 \$m	2021 \$m	Change
Trading fees and trading tariffs	977	1,072	(9%)
Market data fees	228	216	6%
Other revenue and sundry income			
– Commodities stock levies and warehouse listing fees	43	78	(45%)
– LME financial OTC booking fees	45	53	(15%)
– Others	51	59	(14%)
Total revenue and other income	1,344	1,478	(9%)
Operating expenses	(751)	(695)	8%
EBITDA	593	783	(24%)
EBITDA margin	44%	53%	(9%)

Trading Fees and Trading Tariffs



LME trading fees declined by \$98 million, down 9 per cent due to the 7 per cent decrease in chargeable ADV of metals contracts traded in 2022 and lower average fees per contract.

- 1 Includes London Metal Mini Futures, Gold Futures, Silver Futures and Iron Ore Futures contracts
- 2 Chargeable ADV excludes Admin Trades and other non-chargeable trades.

Other Revenue and Sundry Income

Commodities stock levies and warehouse listing fees declined by \$35 million, or 45 per cent, due to lower warehouse stock levels and lower LMEsword warrant activities, driven by higher demand of metals.

EBITDA

Operating expenses increased by \$56 million, up 8 per cent, primarily due to legal and professional fees relating to the nickel market incident in early 2022, partly offset by lower operating costs incurred by the LME due to depreciation of sterling. EBITDA margin decreased from 53 per cent to 44 per cent, due to the decrease in total revenue and other income and increase in operating expenses.

Business Update

LME

Since the Ring reopened on 6 September 2021, the LME's market has adjusted well to the "split pricing" approach, where Official Prices are established on the Ring and Closing Prices are established electronically.

Unprecedented events in the LME's nickel market on 8 March 2022 led to the LME's decision to suspend trading, having concluded that the market had become disorderly, and ensure that no trading arrangements made on the LME's nickel market that morning prior to the suspension should result in binding contracts under the LME Rulebook. Since then the LME and LME Clear have put in place several measures to ensure an orderly resumption of trading for nickel. These include the application of daily upper and lower price limits for outright nickel contracts (as well as in all base metals contracts); improved visibility of both on-exchange and OTC client positions in nickel; and additional reporting in relation to aggregate on-exchange and OTC nickel positions. The LME and LME Clear separately commissioned an independent review conducted by Oliver Wyman, which sought to (i) form a thorough understanding of what led to the market conditions in the nickel market at the time; (ii) consider the factors that contributed to these conditions; (iii) identify actions that could be taken by the LME and LME Clear to reduce the likelihood of similar market conditions arising in the future; and (iv) mitigate and minimise the impact of them in the event they were to arise. Oliver Wyman's report was published on 10 January 2023 and the LME and LME Clear are preparing an implementation plan setting out how it proposes to deliver against the recommendations in the Oliver Wyman report, which will be published to the market by the end of Q1 2023.

LMEpassport, the LME's digital register for metal data, has continued to gain traction in 2022. More than 30,000 Certificates of Analysis are now available in the system and LMEpassport has also seen strong growth in ESG disclosures. The system now supports a range of new sustainability certifications, enabling greater comparability in carbon emissions data, increasing transparency of brands using scrap material, and allowing disclosure opportunities to non-LME brands. LMEpassport's first artisanal mining (ASM) standard has also been integrated into the platform, supporting the formalisation of ASM in supply chains. As of 31 December 2022, 220 LME-listed brands have published over 375 disclosures under the LME's sustainability taxonomy.

The first reporting deadline for the LME's responsible sourcing rules was on 30 June 2022: these are a mandatory set of requirements that aims to ensure that all LME listed brands meet globally accepted standards for responsible sourcing; and that all LME listed brands must adhere to in order to remain listed on the LME. 96 per cent of LME listed brands complied with the first reporting deadline. Those not complying are in the process of being suspended or delisted, depending on their situation.

In October 2022, the LME and LME Clear committed to its own 2040 net-zero target (for scope 1, 2 and 3 emissions), and will use the Science Based Targets initiative to formalise its strategy.

LME's new contracts, steel scrap and steel rebar, saw volumes increase by 60 per cent and 66 per cent compared with 2021 respectively; new liquidity programmes launched on 1 November 2022 have been designed to build on this to attract new participants and significantly improve liquidity accessible on-screen. The LME also launched 15-minute delayed quotes from LMEselect on lme.com for a selection of steel contracts and several initiatives to increase market engagement including tailored reports and focused events.

HKFE Commodities Product Development

In Hong Kong, USD Gold Futures volumes grew substantially, with 423,547 contracts traded in 2022, compared with 74,272 in 2021. On 17 March 2022, HKEX aligned the price band across all London Mini Futures to 15 per cent with reference to the T Session closing price. To further facilitate a better price discovery process with minimal disruption to participants' operations, there was a further enhancement to this mechanism on 5 August 2022 – if the deviation between the T Session closing price at HKEX and the latest LME closing price exceeds 5 per cent, HKEX will use the LME closing price as the reference price to determine the next day's price band range. This is especially useful when there is significant price movement on the London Mini Futures during Hong Kong public holidays.

QME

Despite the Covid-19 pandemic and lockdowns in Shenzhen and Shanghai in 2022, total trading turnover at QME grew by 144 per cent year-on-year, reaching RMB79.4 billion in 2022. With the successful launch of a new soybean product in April 2022, QME's product portfolio was further expanded this year. In July 2022, QME carried out a pilot case for RMB settlement in cross-border commodities trading via Cross-Border Interbank Payment System (CIPS), China's onshore yuan clearing and settlement system.

Post Trade Segment

Key Market Indicators

	2022	2021	Change
ADT on the Stock Exchange (\$bn)	124.9	166.7	(25%)
Average daily number of Stock Exchange trades ('000)	2,143	2,365	(9%)
Average value per Stock Exchange trade (\$'000)	58	71	(18%)
Average daily value of Settlement Instructions (SIs) for Stock Exchange trades (\$bn)	293.0	403.2	(27%)
Average daily number of SIs for Stock Exchange trades ('000)	112	127	(12%)
Average value per SI for Stock Exchange trades (\$'000)	2,613	3,171	(18%)
ADT of Northbound Trading of Stock Connect ¹ (RMBbn)	100.4	120.1	(16%)
Average daily value of SIs for Northbound Trading of Stock Connect (RMBbn)	27.4	32.5	(16%)
Portfolio values of Northbound Trading of Stock Connect at 31 Dec (RMBbn)	2,242	2,760	(19%)
Portfolio values of Southbound Trading of Stock Connect at 31 Dec (\$bn)	2,233	2,250	(1%)
Chargeable ADV ² of metals contracts traded on the LME ('000 lots)	506	547	(7%)

1 Includes buy and sell trades under Stock Connect

2 Chargeable ADV excludes Admin Trades (which are chargeable at a lower clearing fee rate of US\$0.02 per contract) and other non-chargeable trades.

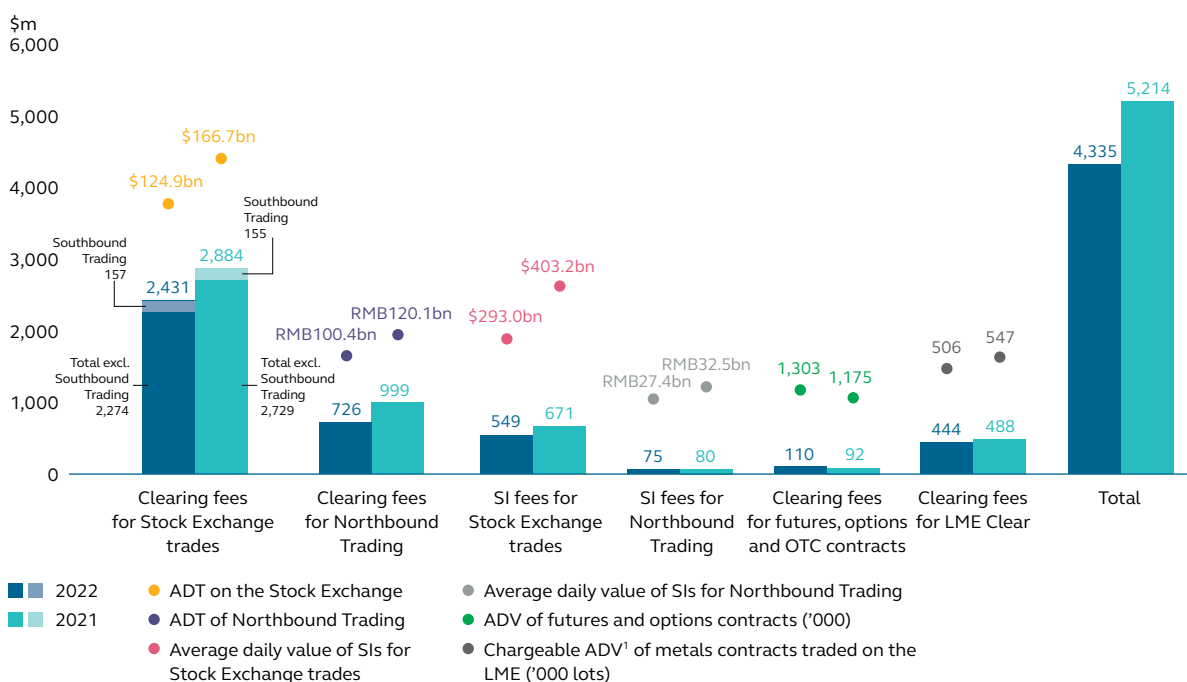
Analysis of Results

Summary

	2022 \$m	2021 \$m	Change
Clearing and settlement fees	4,335	5,214	(17%)
Depository, custody and nominee services fees	1,260	1,543	(18%)
Trading fees and trading tariffs – allocated from Equity and Financial Derivatives segment	447	364	23%
Other revenue and sundry income	196	278	(29%)
	6,238	7,399	(16%)
Net investment income	1,404	596	136%
Total revenue and other income	7,642	7,995	(4%)
Less: Transaction-related expenses	(11)	(26)	(58%)
Total revenue and other income less transaction-related expenses	7,631	7,969	(4%)
Operating expenses	(938)	(844)	11%
EBITDA	6,693	7,125	(6%)
EBITDA margin ¹	88%	89%	(1%)

1 EBITDA margin is calculated based on EBITDA divided by total revenue and other income less transaction-related expenses.

Clearing and Settlement Fees



1 Chargeable ADV excludes Admin Trades (which are chargeable at a lower clearing fee rate of US\$0.02 per contract) and other non-chargeable trades.

Clearing and settlement fees for the Cash Market (including Stock Exchange trades and Northbound Trading) decreased by 19 per cent to \$3,157 million in 2022 (2021: \$3,883 million); and total fees for SIs decreased by 17 per cent to \$624 million in 2022 (2021: \$751 million). The decreases were primarily driven by reduced number of transactions, and lower clearing fees from Stock Connect Northbound Trading due to lower trading volume.

Clearing fees for LME Clear fell by 9 per cent due to the decrease in chargeable ADV of metals contracts traded on the LME.

Depository, Custody and Nominee Services Fees

Depository, custody and nominee services fees do not directly vary with changes in trading volumes. The fees declined by \$283 million, or 18 per cent, to \$1,260 million in 2022 (2021: \$1,543 million), mainly due to a decrease in e-IPO service fees from lower number of e-IPO applications.

Trading Fees and Trading Tariffs

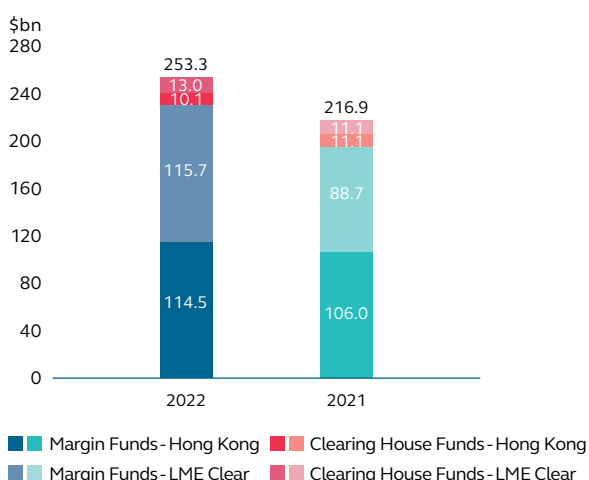
Trading fees and trading tariffs allocated from the Equity and Financial Derivatives segment for clearing derivatives products rose by 23 per cent, due to a 33 per cent increase in ADV of derivatives contracts traded on the Futures Exchange, partly offset by an 8 per cent decrease in ADV of stock options traded (see commentary in the Equity and Financial Derivatives segment).

Other Revenue and Sundry Income

Other revenue decreased by \$82 million, mainly due to lower accommodation income collected from LME Clear CPs on cash collateral as USD investment returns rose above the benchmark interest rate stipulated in the rules of LME Clear.

Net Investment Income

Average fund size



The increase in the average size of Margin Funds during the year was attributable to higher average Margin Fund size of LME Clear, due to higher margin requirements per contract, reflecting heightened volatility; and higher average HKCC Margin Fund size, due to increase in open interests, partly offset by lower margin requirements per contract.

The increase in the average size of Clearing House Funds during the year was attributable to higher average fund size of LME Clear due to changes in risk exposures.

The analysis of net investment income is as follows:

	2022				Total \$m
	HK Clearing Houses		LME Clear		
	Margin Funds \$m	Clearing House Funds \$m	Margin Funds \$m	Clearing House Funds \$m	
Net investment income from:					
– Cash and bank deposits	1,037	47	90	23	1,197
– Debt securities	106	32	69	–	207
Total net investment income	1,143	79	159	23	1,404
Net investment return	1.00%	0.78%	0.14%	0.18%	0.55%

	2021				Total \$m
	HK Clearing Houses		LME Clear		
	Margin Funds \$m	Clearing House Funds \$m	Margin Funds \$m	Clearing House Funds \$m	
Net investment income from:					
– Cash and bank deposits	464	5	74	11	554
– Debt securities	32	1	5	–	38
– Exchange gains	4	–	–	–	4
Total net investment income	500	6	79	11	596
Net investment return	0.47%	0.05%	0.09%	0.10%	0.27%

Net investment income increased by \$808 million, mainly due to higher HKD and USD deposit rates in 2022 and higher average Margin Fund sizes, partly offset by the increase in interest rebates paid to the CPs from higher base rates.

EBITDA

Operating expenses increased by \$94 million, up 11 per cent, due to higher legal and professional fees incurred relating to the nickel market incident, an increase in staff costs from payroll adjustments and higher investment and custodian fees charged on LME Clear Margin Funds. EBITDA margin decreased marginally by 1 per cent to 88 per cent due to the decrease in total revenue and other income less transaction-related expenses and increase in operating expenses.

Business Update

Cash and Derivatives Clearing

On 13 June 2022, HKEX introduced a new Value-at-Risk (VaR) Platform in its securities market. The VaR Platform replaces the previously applied flat rate model with a new VaR model based on individual stock volatility. This significantly strengthens HKEX's resilience and enhances capital efficiency for HKSCC CPs. While the overall margin coverage of HKSCC CPs improved, the overall margin paid by HKSCC CPs was reduced.

The development of Fast Interface for New Issuance (FINI), HKEX's new platform for Hong Kong IPO settlement, remained on track in 2022. User registration was launched in November 2022, and market readiness activities are ongoing. System testing has started, and market rehearsals are scheduled to take place in 1H 2023.

OTC Clear

A joint announcement was made on 4 July 2022 by the SFC, the Hong Kong Monetary Authority (HKMA) and the People's Bank of China (PBoC) on the collaboration between HKEX, China Foreign Exchange Trade System (CFETS) and Shanghai Clearing House (SHCH) to develop Swap Connect, the latest milestone in the development of the HKEX Connect franchise. This will be the world's first derivatives market access scheme, allowing international investors to trade and clear onshore RMB interest rate swaps in Mainland China without changing their existing trading and settlement practices. In its initial stage, Swap Connect will connect Hong Kong and international investors with Mainland China's interbank interest rate swap market through a Northbound route, providing the risk management tools for international investors to trade onshore China fixed income investments. Swap Connect also supports the internationalisation of the RMB and strengthens Hong Kong's unique position as an international financial centre with unrivalled connectivity to China.

OTC Clear cleared a total notional amount of US\$226.8 billion in 2022, up 102 per cent compared to 2021, with clearing volume of Cross Currency Swaps (CCS) doubling that of 2021 to US\$128.0 billion. With strong clearing demand, Deliverable FX (DFX) and Non-deliverable interest rate swaps (NDIRS) clearing volume also grew significantly and reached a record high of US\$15.0 billion and US\$30.3 billion in 2022, compared with US\$3.2 billion and US\$9.2 billion cleared in 2021 respectively.



Technology Segment

Analysis of Results

Summary

	2022 \$m	2021 \$m	Change
Network, terminal user, data line and software sub-license fees	751	720	4%
Hosting Services fees	290	257	13%
BayConnect sales and service revenue and other income	104	73	42%
Total revenue and other income	1,145	1,050	9%
Operating expenses	(322)	(305)	6%
EBITDA	823	745	10%
EBITDA margin	72%	71%	1%

Network, Terminal User, Data Line and Software Sub-license Fees

Network fees rose by \$31 million or 4 per cent, as increased usage of the Orion Central Gateway and China Connect Central Gateway by EPs was partly offset by the lower fees from the sale of new throttles.

Hosting Services Fees

Hosting Services fees increased 13 per cent due to growth in both new customer subscriptions and increased usage by existing customers, with over 37 newly subscribed racks in 2022. As at 31 December 2022, 96 EPs were using HKEX's Hosting Services. These EPs generated, in aggregate, approximately 64 per cent of the Cash Market turnover and trading volume of the Derivatives Market in 2022.

EBITDA

Operating expenses increased by \$17 million (6 per cent) due to an increase in staff costs from payroll adjustments and increased headcount for new initiatives. EBITDA margin rose from 71 per cent in 2021 to 72 per cent in 2022, reflecting the higher percentage increase in total revenue and other income compared to the percentage increase in operating expenses.

Business Update

Trading and Clearing Systems

During 2022, despite market volatility and challenges posed by the pandemic on work arrangements, all of HKEX's major trading, clearing,

settlement and market data dissemination systems for the Cash and Derivatives Markets continued to perform robustly. In the Commodities Market, a power outage at the LME's third party data centre on 10 January 2022 resulted in a temporary market interruption to the LME's electronic trading platform (LMEselect). The root cause was subsequently identified and corrective measures have been duly implemented.

In January 2022, HKEX improved the infrastructure resilience of its derivatives platforms, Hong Kong Futures Automated Trading System (HKATS) and Derivatives Clearing and Settlement System (DCASS), by implementing additional hot standby servers to achieve a higher level of hardware redundancy.

On 25 April 2022, HKEX upgraded its Electronic Communication Platform (ECP), a platform for clients to exchange files with HKEX. The new platform unifies client access through Client Connect, with enhanced system accessibility and resilience and paves the way for new functionality, in turn supporting the health of the whole market.

To support the new HKIDR to be launched in March 2023, HKEX has further enhanced the ECP and Orion Trading Platform – Securities Market (OTP-C), to facilitate the submission of investor information required, and market rehearsals have been completed successfully. To prepare for the launch, Relevant Regulated Intermediaries have been permitted to submit their client identification data to the Exchange via the enhanced ECP since 19 December 2022.

In response to the continuing growth of the Derivatives Market and to maintain the quality of our market data services, a widely adopted compression mechanism was introduced to the Orion Market Data Platform – Derivatives Market (OMD-D) Derivatives Lite (D-Lite) Stock Option Market (SOM) datafeed in November 2022. This implementation eases the risks of bandwidth increase for clients, lowering their operating costs, and is more sustainable than increasing the bandwidth headroom in the long run. The mechanism will be further implemented in the Derivatives Standard (DS) SOM datafeed in Q1 2023.

Hosting Services

In 1H 2022, Hosting Services completed an upgrade and offered high power density racks to enrich the hosting product portfolio. In October 2022, the fit-out of a new Hosting Services data hall was completed and is now in service to meet customer demands.

Corporate Items

“Corporate Items” is not a business segment but comprises central income (including net investment income of the Corporate Funds and HKEX Foundation donation income), the costs of central support functions that provide services to all operating segments, HKEX Foundation charitable donations and other costs not directly related to any operating segments.

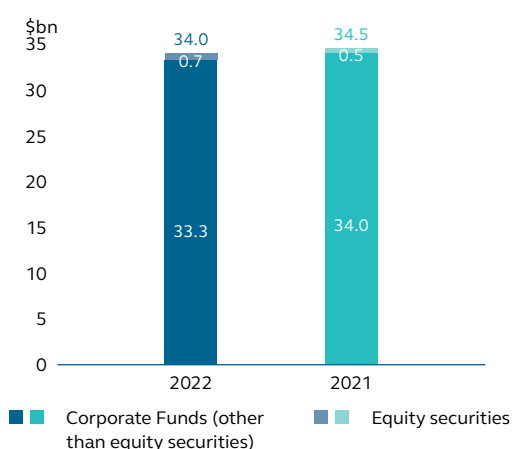
Analysis of Results

Summary

	2022 \$m	2021 \$m	Change
Net investment (loss)/income	(48)	708	N/A
HKEX Foundation donation income	130	139	(6%)
Others	12	13	(8%)
Total revenue and other income	94	860	(89%)
Operating expenses			
– HKEX Foundation charitable donations	(136)	(105)	30%
– Others	(1,521)	(1,301)	17%
EBITDA	(1,563)	(546)	186%

Net Investment Income

Average fund size



Average fund size of Corporate Funds decreased marginally due to decreases in fair values of the External Portfolio, as cash generated by the business was mostly deployed to fund the payment of cash dividends and capital expenditure.

The analysis of net investment (loss)/income is as follows:

	Corporate Funds	
	2022 \$m	2021 \$m
Net investment (loss)/income from:		
– External Portfolio	(486)	364
– Cash and bank deposits	459	172
– Equity securities ¹	(21)	121
– Debt securities	17	2
– Exchange (losses)/gains	(17)	49
Total net investment (loss)/income	(48)	708
Net investment return	(0.14%)	2.06%

¹ Investments in minority stakes of unlisted companies

Net investment income from Corporate Funds decreased by \$756 million compared with 2021 due to net fair value losses on the External Portfolio in 2022 and the non-recurring gains on valuation of long-term equity investments in 2021, partly offset by higher interest income from internally-managed Corporate Funds, reflecting higher deposit rates in 2022.

The fair value (losses)/gains on the External Portfolio came from funds invested in the following strategies:

Strategy	2022 \$m	2021 \$m
Public equities	(327)	222
Diversifiers ¹	38	113
Government Bonds and Mortgage-backed Securities	(197)	29
Total fair value (losses)/gains	(486)	364

¹ Diversifiers comprise Absolute Return and Multi-Sector Fixed Income asset classes.

In 2022, as part of HKEX's External Portfolio de-risking commitments, \$2 billion was redeemed from the External Portfolio. The redemption proceeds are invested internally with the rest of the Corporate Funds and help to reduce the impact of market volatility on HKEX earnings.

EBITDA

Excluding HKEX Foundation charitable donation expenses (funded by HKEX Foundation income), operating expenses increased by 17 per cent against 2021, due to increased staff costs from increased headcount for strategic initiatives.

EBITDA decreased by \$1,017 million mainly due to the decrease in net investment income of Corporate Funds and increase in operating expenses.

Business Update

Corporate Social Responsibility

Throughout 2022, HKEX continued to play an active role in shaping the long-term sustainability of global financial markets. HKEX, as a corporate, regulator and market operator, was committed to promoting good corporate governance and ESG stewardship through the ongoing publication of training and guidance materials, industry knowledge sharing and demonstrating leadership on best practices.

To reinforce its commitment in tackling climate change, the Group continued to make efforts in facilitating the transition to a net-zero global economy across its markets, business and operations. Throughout the year, the Group focused on the development of a regional and global sustainable finance ecosystem, including the establishment of the Hong Kong International Carbon Market Council in July and the launch of Core Climate, a new voluntary international carbon trading market, in October. Core Climate seeks to facilitate effective and transparent trading of carbon credits and other instruments to support the global transition to net zero. The Group also continued to promote sustainable and green finance through HKEX's STAGE and enhance sustainability transparency for the LME's traded metals through its digital credentials register, LMEpassport, which supports producers in reporting on a wide range of sustainability metrics.

As a purpose-led organisation committed to the long-term prosperity of its community, HKEX hosted its inaugural HKEX Impact Summit in December (see details in the Cash segment). Other key CSR and sustainability initiatives implemented throughout 2022 included the annual "HKEX Goes Green" campaign promoting environmental stewardship across our markets and operations; the launch of a digital volunteering platform for HKEX staff and the first-ever group-wide Global Wellness Challenge, promoting employee wellness and community engagement. Further information on HKEX's CSR activities can be found in HKEX's 2022 CSR Report.

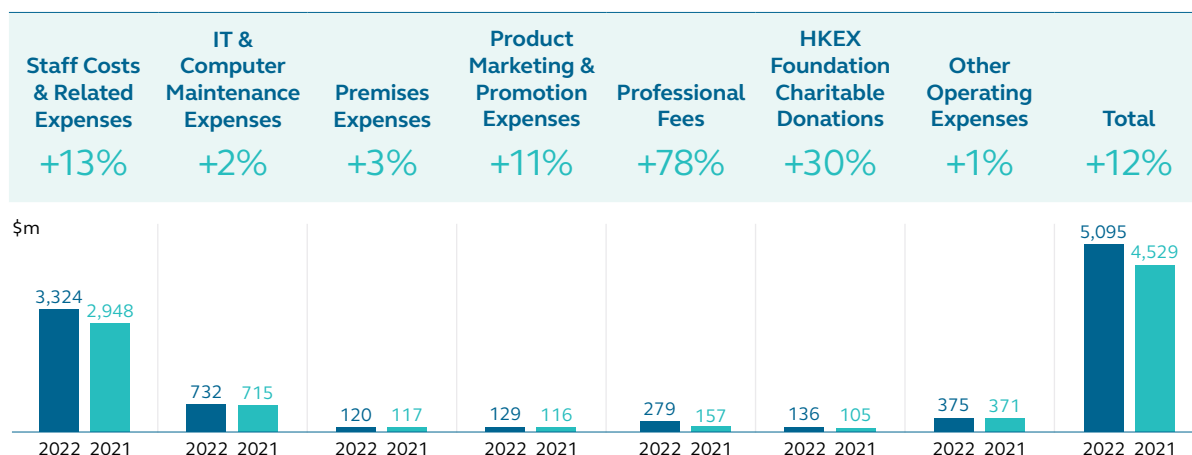
HKEX Foundation and Group Philanthropy

HKEX Foundation continued to act as HKEX's dedicated charitable channel, facilitating and advocating for meaningful change through programmes that build better lives and a better community. Through HKEX Foundation, HKEX continued to deepen its engagement and connectivity with the community. During the year, HKEX Foundation funded a wide range of projects and charities focusing on financial literacy, diversity and inclusion, poverty relief and environmental sustainability. HKEX strengthened its partnerships with local charitable bodies and social enterprises through scaling up the HKEX Charity Partnership Programme and the HKEX Impact Funding Scheme. Complementing the existing HKEX Foundation University Scholarship Programme, HKEX Foundation was pleased to introduce a new Research Funding Scheme during the year, supporting innovative university-backed research projects that help to provide valuable insight into financial markets, ESG and broader sustainability. In London, the LME announced a new partnership with Inspire, a charity and an education business partnership which seeks to empower young people to reach their full potential and realise their ambitions.

In 2022, HKEX Foundation raised \$156 million (including \$26 million donation from HKEX), principally from HKEX's Stock Code for Charity Scheme, and made a total of \$136 million charitable donations to various causes in the community. Since its establishment, HKEX Foundation has donated over \$350 million, supporting more than 60 projects, directly benefitting more than 430,000 individuals in Hong Kong. As at 31 December 2022, the Foundation had a cumulative surplus of \$22 million for future donations and expenditures.

Expenses, Other Costs and Taxation

Operating Expenses



Staff costs and related expenses increased by \$376 million (13 per cent) mainly due to an increase in headcount for strategic initiatives and payroll adjustments, reflecting HKEX's commitment to continuous investment in skills and talent.

IT and computer maintenance expenses consumed by the Group, excluding costs of services and goods directly consumed by participants of \$74 million (2021: \$81 million), were \$658 million (2021: \$634 million). The increase was mainly attributable to higher maintenance expenses for new IT systems and upgraded networks.

Product marketing and promotion expenses increased by \$13 million (11 per cent), due to higher marketing expenses and cash incentives relating to new products.

Professional fees increased by \$122 million (78 per cent), due primarily to legal and professional fees incurred for claims and independent reviews relating to the nickel market incident.

Depreciation and Amortisation

	2022 \$m	2021 \$m	Change
Depreciation and amortisation	1,459	1,354	8%

Depreciation and amortisation increased by \$105 million (8 per cent), due to the completion of a new secondary data centre, the refurbishment of the Connect Hall, and new IT systems and upgrades in 2H 2021 and 2022.

Finance Costs

	2022 \$m	2021 \$m	Change
Finance costs	138	154	(10%)

Finance costs decreased due to lower interest expense on lease liabilities.

Taxation

	2022 \$m	2021 \$m	Change
Taxation	1,564	2,343	(33%)

Taxation decreased due to lower profit before taxation and higher non-taxable investment income in 2022 and reflecting the one-off deferred tax charge of \$160 million recorded in 2021 on acquired LME intangible assets arising from approval of the change of statutory UK tax rate.

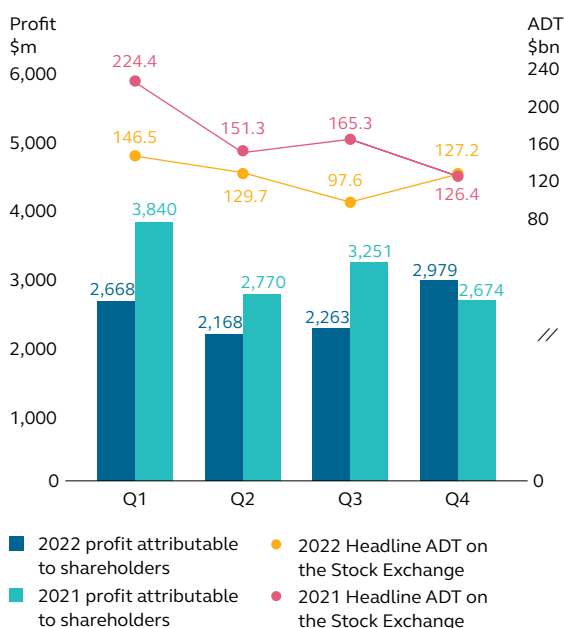
Financial Review

Analysis of Results by Quarter

Quarterly Results

	Q1 2022 \$m	Q2 2022 \$m	Q3 2022 \$m	Q4 2022 \$m	Total 2022 \$m
Trading fees and trading tariffs	1,915	1,638	1,513	1,771	6,837
Clearing and settlement fees	1,234	1,057	973	1,071	4,335
Stock Exchange listing fees	561	433	459	462	1,915
Depository, custody and nominee services fees	226	421	380	233	1,260
Market data fees	268	278	263	272	1,081
Other revenue and sundry income	397	383	356	406	1,542
Net investment income	59	30	334	933	1,356
HKEX Foundation donation income	30	7	40	53	130
Revenue and other income	4,690	4,247	4,318	5,201	18,456
Less: Transaction-related expenses	(39)	(48)	(43)	(46)	(176)
Revenue and other income less transaction-related expenses	4,651	4,199	4,275	5,155	18,280
Operating expenses					
Staff costs and related expenses	(803)	(864)	(831)	(826)	(3,324)
IT and computer maintenance expenses	(172)	(191)	(176)	(193)	(732)
Premises expenses	(28)	(30)	(30)	(32)	(120)
Product marketing and promotion expenses	(33)	(17)	(29)	(50)	(129)
Professional fees	(32)	(45)	(80)	(122)	(279)
HKEX Foundation charitable donations	(23)	(33)	(63)	(17)	(136)
Other operating expenses	(87)	(98)	(82)	(108)	(375)
	(1,178)	(1,278)	(1,291)	(1,348)	(5,095)
EBITDA	3,473	2,921	2,984	3,807	13,185
Depreciation and amortisation	(354)	(363)	(355)	(387)	(1,459)
Operating profit	3,119	2,558	2,629	3,420	11,726
Finance costs	(36)	(37)	(32)	(33)	(138)
Share of profits less losses of joint ventures	25	17	14	15	71
Profit before taxation	3,108	2,538	2,611	3,402	11,659
Taxation	(445)	(372)	(343)	(404)	(1,564)
Profit for period/year	2,663	2,166	2,268	2,998	10,095
Loss/(profit) attributable to non-controlling interests	5	2	(5)	(19)	(17)
Profit attributable to shareholders	2,668	2,168	2,263	2,979	10,078
	Q1 2021 \$m	Q2 2021 \$m	Q3 2021 \$m	Q4 2021 \$m	Total 2021 \$m
Revenue and other income	5,956	4,953	5,309	4,732	20,950
Profit attributable to shareholders	3,840	2,770	3,251	2,674	12,535

Analysis of Quarterly Results



Profit for the first three quarters of 2022 were lower than 2021, as a result of lower Headline ADT from weak market sentiment, and the fair value losses of the External Portfolio.

Market sentiment improved in the fourth quarter, and Headline ADT increased by 30 per cent against Q3 2022 to \$127.2 billion, 1 per cent higher than Q4 2021. Coupled with the fair value gains of the External Portfolio, and higher net interest income under higher interest rate environment, Q4 2022 revenue and other income reached all time record fourth quarter high.

Changes to Key Items in Consolidated Statement of Financial Position

(A) Significant Financial Assets and Financial Liabilities by Funds

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m	Change
Financial assets			
Cash and cash equivalents	184,965	181,361	2%
Financial assets measured at fair value through profit or loss	6,964	9,437	(26%)
Financial assets measured at fair value through other comprehensive income	14,962	9,755	53%
Financial assets measured at amortised cost	70,494	51,828	36%
Derivative financial instruments	80,718	91,424	(12%)
Total	358,103	343,805	4%

The Group's financial assets comprised financial assets of Corporate Funds, Margin Funds, Clearing House Funds, derivative financial instruments (including base, ferrous, and precious metals derivatives contracts, and forward foreign exchange contracts), and cash prepayments and collateral for A-shares traded under Stock Connect, as follows:

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m	Change
Financial assets			
Corporate Funds ¹	34,830	33,794	3%
Margin Funds ²	217,693	191,240	14%
Clearing House Funds	22,052	19,975	10%
Derivative financial instruments	80,718	91,424	(12%)
Cash prepayments and collateral for A-shares	2,810	7,372	(62%)
Total	358,103	343,805	4%

¹ Includes \$1,298 million (31 December 2021: \$1,267 million) solely used for supporting contributions to default funds (Skin-in-the-Game), and default fund credits for HKSCC Guarantee Fund and HKCC Reserve Fund

² Excludes Settlement Reserve Fund and Settlement Guarantee Fund paid to ChinaClear and margin receivable from CPs of \$10,209 million (31 December 2021: \$12,764 million), which are included in accounts receivable, prepayments and deposits

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m	Change
Financial liabilities			
Derivative financial instruments	80,705	91,424	(12%)
Margin deposits, Mainland security and settlement deposits, and cash collateral from CPs	227,902	203,536	12%
CPs' contributions to Clearing House Funds	21,205	19,182	11%
Total	329,812	314,142	5%

The increase in financial assets and financial liabilities of Margin Funds at 31 December 2022 compared with 31 December 2021 was mainly attributable to increased contributions from HKCC CPs and members of LME Clear due to higher margin requirements and increased open positions of futures and options on HKCC, partly offset by decreased contributions from HKSCC CPs due to lower Cash Market turnover and lower Stock Connect trading volume.

Financial assets and financial liabilities of Clearing House Funds at 31 December 2022 were higher than the balance at 31 December 2021, as higher contributions required from members of LME Clear were partly offset by lower contributions from SEOCH CPs, in response to changes in risk exposures.

Margin Funds and Clearing House Funds of LME Clear are mainly invested in overnight reverse repurchase investments, where high quality assets are held against such investments as collateral. In Hong Kong, Clearing House Funds are predominantly kept overnight or invested in Exchange Fund Bills issued by the Hong Kong Monetary Authority due to regulatory requirements. For Margin Funds, a certain proportion of the funds are kept overnight to meet withdrawal requests from CPs (approximately 20 per cent at 31 December 2022), a certain proportion is invested in long-term investment grade debt securities (approximately 5 per cent at 31 December 2022) and the remaining funds are invested in time deposits with maturity of up to 12 months (weighted original maturity of seven months as at 31 December 2022).

Financial assets of Corporate Funds at 31 December 2022 increased by 3 per cent compared with 31 December 2021, as cash generated by the business over the past year was mostly offset by the cash paid for the

2021 second interim dividend and 2022 first interim dividend, and decrease in fair value of the External Portfolio.

A portion of the Corporate Funds is invested in a diversified portfolio of investment funds which are designed to enhance returns and mitigate portfolio volatility and asset class concentration risk. Further details of investments in the External Portfolio are included in note 54(a)(iv) to the Consolidated Financial Statements of this Annual Report.

(B) Fixed Assets, Intangible Assets, Right-of-use Assets and Capital Commitments

The total net book value of the Group's fixed assets and intangible assets rose by \$31 million from \$20,577 million at 31 December 2021 to \$20,608 million at 31 December 2022. The increase was mainly due to additions of assets¹ of \$1,184 million partly offset by depreciation and amortisation of \$1,153 million. Additions during the year were mainly related to the development and upgrade of various trading and clearing systems (notably trading systems for Commodities Market), and the development of a new data hall for Hosting Services.

The Group's operating leases, which mainly relate to leases of office premises, are recognised as right-of-use assets. Such assets decreased by \$292 million to \$1,604 million (31 December 2021: \$1,896 million), mainly due to depreciation during the year.

The Group's capital commitments¹ at 31 December 2022, including those authorised by the Board but not yet contracted for, amounted to \$1,024 million (31 December 2021: \$815 million). They were mainly related to the development and upgrade of IT systems including the cash, derivatives and commodities trading and clearing systems.

1 Exclude right-of-use assets recognised under HKFRS 16: Leases

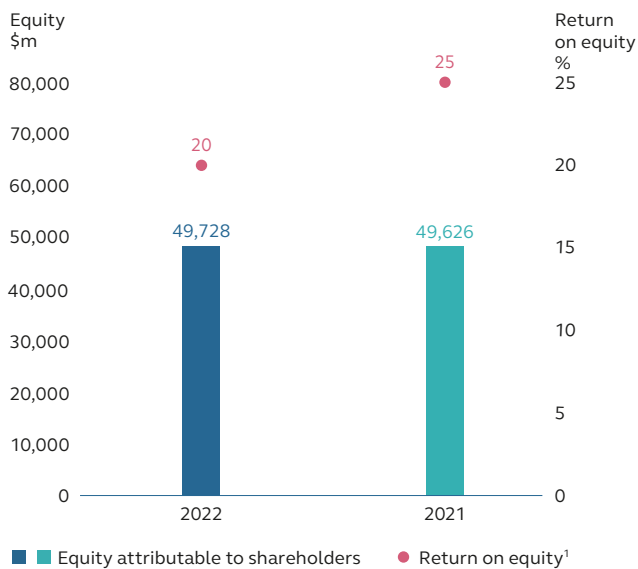
(C) Significant Investments Held, Material Acquisitions and Disposals of Subsidiaries, and Future Plans for Material Investments or Capital Assets

Save for those disclosed in this Annual Report, there were no other significant investments held, nor were there material acquisitions or disposals of subsidiaries during the year under review. Apart from those disclosed in this Annual Report, there were no material investments or additions of capital assets authorised by the Board at the date of this Annual Report.

(D) Equity attributable to Shareholders and Return on Equity

Equity attributable to shareholders increased by \$102 million to \$49,728 million at 31 December 2022 (31 December 2021: \$49,626 million). This arose principally from the increase in retained earnings of \$374 million mainly attributable to profit for the year less dividends declared or paid, but was partly offset by decrease in revaluation reserve arising from the fair value losses of fixed rate debt securities held under the Margin Funds.

Equity attributable to Shareholders and Return on Equity



Return on equity decreased by 5 per cent due to lower profit for 2022 compared with the record 2021.

1 Based on equity attributable to shareholders at year-end

Liquidity, Financial Resources and Gearing

Working capital increased by \$425 million to \$29,530 million at 31 December 2022 (31 December 2021: \$29,105 million). The increase was mainly due to profit attributable to shareholders of \$10,078 million, partly offset by payment of 2021 second interim dividend and 2022 first interim dividend of \$9,656 million.

At 31 December 2022, the Group had the following outstanding borrowings:

	At 31 Dec 2022		At 31 Dec 2021	
	Carrying value \$m	Maturity	Carrying value \$m	Maturity
Written put options to non-controlling interests	491	N/A	426	N/A

At 31 December 2022, the Group had a gross gearing ratio (i.e., gross debt divided by adjusted capital) of 1 per cent (31 December 2021: 1 per cent), and a net gearing ratio (i.e., net debt divided by adjusted capital) of zero per cent (31 December 2021: zero per cent). For this purpose, gross debt is defined as total borrowings (excluding lease liabilities) and net debt² is defined as gross debt less cash and cash equivalents of Corporate Funds (excluding those reserved for supporting contributions to default funds and default fund credits for Clearing House Funds), and adjusted capital as all components of equity attributable to shareholders of HKEX other than designated reserves.

At 31 December 2022, the Group's total available banking facilities for its daily operations amounted to \$22,839 million (31 December 2021: \$21,249 million), which included \$16,338 million (31 December 2021: \$14,748 million) of committed banking facilities and \$6,500 million (31 December 2021: \$6,500 million) of repurchase facilities.

The Group has also put in place foreign exchange facilities for its daily clearing operations and for the RMB Equity Trading Support Facility to support the trading of RMB stocks listed on the Stock Exchange. At 31 December 2022, the total amount of the facilities was \$28,493 million (31 December 2021: \$31,041 million).

In addition, the Group has arranged contingency banking facilities amounting to RMB13,000 million (31 December 2021: RMB13,000 million) for settling payment obligations to ChinaClear should there be events that disrupt normal settlement arrangements for Stock Connect.

At 31 December 2022, 88 per cent (31 December 2021: 83 per cent) of the Group's cash and cash equivalents were denominated in HKD or USD.

Pledges of Assets

Details of pledges of assets are included in note 52 to the Consolidated Financial Statements of this Annual Report.

Exposure to Fluctuations in Exchange Rates and Related Hedges

Details of the Group's exposure to fluctuations in exchange rates and related hedges are included in note 54(a)(i) – Foreign exchange risk to the Consolidated Financial Statements of this Annual Report.

Contingent Liabilities

Details of contingent liabilities are included in note 49 to the Consolidated Financial Statements of this Annual Report.

² Net debt is zero when the amount of cash and cash equivalents of Corporate Funds (excluding those reserved for supporting contributions to default funds and default fund credits for Clearing House Funds) is higher than gross debt.

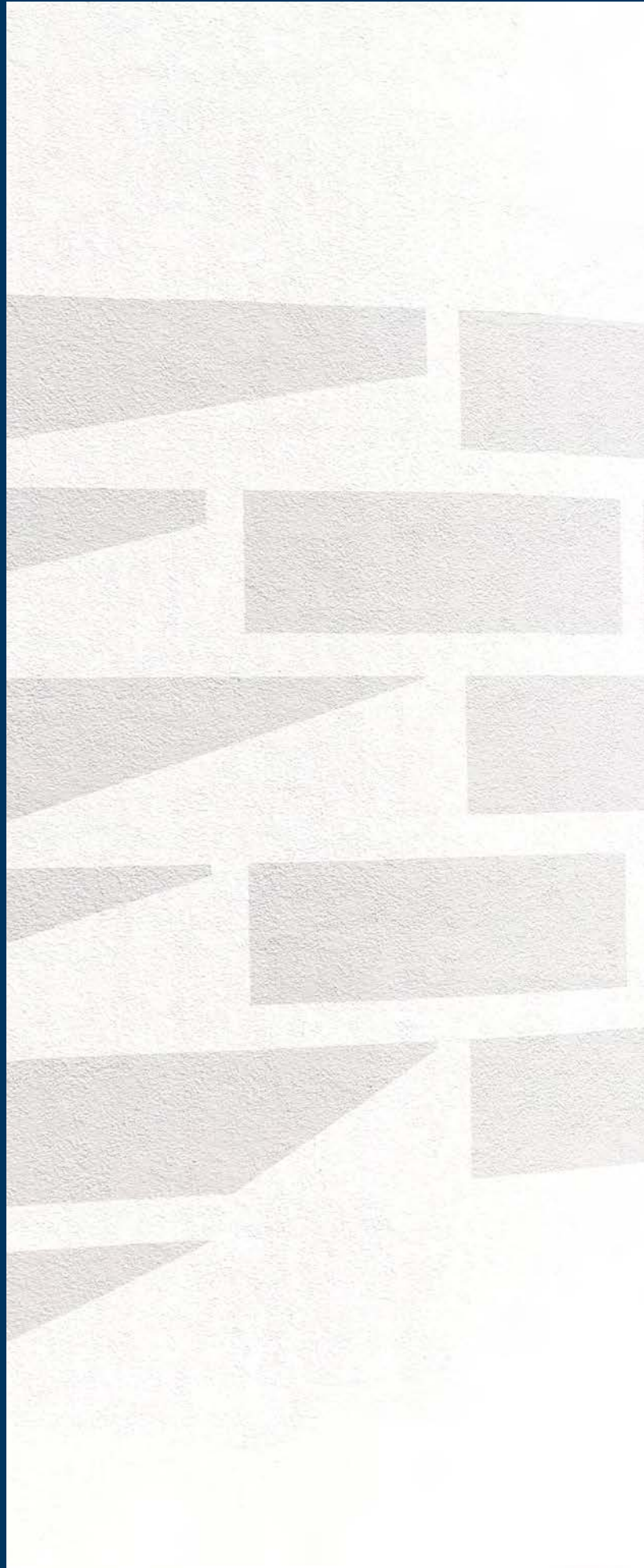
10-Year Financial Statistics

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Key Market Statistics										
Headline ADT traded on the Stock Exchange (\$bn)	124.9	166.7	129.5	87.2	107.4	88.2	66.9	105.6	69.5	62.6
ADV of derivatives contracts traded on the Futures Exchange ('000 contracts)	715	538	612	630	687	443	465	394	275	284
ADV of stock options contracts traded on the Stock Exchange ('000 contracts)	588	637	526	442	517	428	298	374	302	249
Chargeable ADV of metals contracts traded on LME ('000 lots)	506	547	571	617	627	602	618	670	700	676
Consolidated Income Statement										
(\$m)										
Revenue and other income	18,456	20,950	19,190	16,311	15,867	13,180	11,116	13,375	9,849	8,723
Less: Transaction-related expenses	(176)	(152)	(110)	(51)	(54)	(40)	(39)	(36)	(27)	(27)
Revenue and other income less transaction-related expenses	18,280	20,798	19,080	16,260	15,813	13,140	11,077	13,339	9,822	8,696
Operating expenses	(5,095)	(4,529)	(4,439)	(3,997)	(4,056)	(3,526)	(3,416)	(3,254)	(2,931)	(2,750)
EBITDA	13,185	16,269	14,641	12,263	11,757	9,614	7,661	10,085	6,891	5,946
Depreciation and amortisation	(1,459)	(1,354)	(1,197)	(1,044)	(762)	(858)	(771)	(684)	(647)	(507)
Costs relating to proposed combination with LSEG	-	-	-	(123)	-	-	-	-	-	-
Finance costs	(138)	(154)	(181)	(177)	(114)	(134)	(82)	(114)	(196)	(183)
Share of profits/(losses) of joint ventures	71	80	69	32	2	(12)	(9)	(9)	(10)	(10)
Profit before taxation	11,659	14,841	13,332	10,951	10,883	8,610	6,799	9,278	6,038	5,246
Taxation	(1,564)	(2,343)	(1,845)	(1,561)	(1,592)	(1,255)	(1,058)	(1,347)	(900)	(700)
Profit for the year	10,095	12,498	11,487	9,390	9,291	7,355	5,741	7,931	5,138	4,546
(Profit)/loss attributable to non-controlling interests	(17)	37	18	1	21	49	28	25	27	6
Profit attributable to shareholders	10,078	12,535	11,505	9,391	9,312	7,404	5,769	7,956	5,165	4,552
Dividend per share (\$)	7.14	8.87	8.17	6.71	6.71	5.40	4.25	5.95	3.98	3.54
Basic earnings per share (\$)	7.96	9.91	9.11	7.49	7.50	6.03	4.76	6.70	4.44	3.95
Consolidated Statement of Financial Position										
(\$m)										
Non-current assets	23,573	24,235	23,413	23,856	20,165	19,586	19,508	19,622	19,672	20,797
Current assets	382,478	375,069	375,693	255,195	235,783	298,018	227,810	218,571	232,188	65,146
Current liabilities	(352,948)	(345,964)	(346,334)	(230,937)	(213,581)	(278,566)	(210,688)	(203,976)	(222,564)	(57,538)
Net current assets	29,530	29,105	29,359	24,258	22,202	19,452	17,122	14,595	9,624	7,608
Total assets less current liabilities	53,103	53,340	52,772	48,114	42,367	39,038	36,630	34,217	29,296	28,405
Non-current liabilities	(3,004)	(3,430)	(3,536)	(3,613)	(1,464)	(1,663)	(4,246)	(4,255)	(7,937)	(7,887)
Total equity	50,099	49,910	49,236	44,501	40,903	37,375	32,384	29,962	21,359	20,518
Non-controlling interests	(371)	(284)	(318)	(328)	(174)	(102)	(118)	(146)	(86)	(113)
Equity attributable to HKEX's shareholders	49,728	49,626	48,918	44,173	40,729	37,273	32,266	29,816	21,273	20,405
Equity per share ¹ (\$)	39.30	39.22	38.64	35.12	32.65	30.14	26.42	24.74	18.26	17.59
Financial Ratios										
Dividend payout ratio	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Cost to income ratio ²	28%	22%	23%	25%	26%	27%	31%	24%	30%	32%
Pre-tax profit margin ²	64%	71%	70%	67%	69%	66%	61%	70%	62%	60%
Return on equity ³	20%	25%	24%	21%	23%	20%	18%	27%	24%	22%
Current ratio	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.1

Notes:

- Based on number of shares issued and fully paid less number of shares held for the Share Award Scheme at 31 December
- For the purpose of computing cost (i.e., operating expenses) to income ratio and pre-tax profit margin, income includes revenue and other income less transaction-related expenses and share of profits/losses of joint ventures.
- Based on equity attributable to HKEX's shareholders at year-end

Governance





Corporate Governance Report

The Board is committed to high standards of corporate governance and recognises that good governance is vital for the long-term success and sustainability of HKEX businesses.

HKEX's key corporate governance practices and activities during the year ended 31 December 2022 are highlighted in this report and the Committee Reports, as well as in the 2022 CSR Report which is available on the HKEX Group website together with this Annual Report. All the Committee Reports form part of this report.

More details about HKEX's corporate governance structure, principles and practices are available on the HKEX Group website [CG](#).

Committee Reports

Nomination and Governance Committee Report: pages 96 to 99

Audit Committee Report: pages 100 to 102

Risk Committee Report: pages 103 to 107

Remuneration Committee Report: pages 108 to 115

CSR Committee Report: pages 116 and 117

[HKEX Group website](#) (www.hkexgroup.com)

About HKEX (Our Structure) section [OS](#)

Investor Relations section [IR](#)

Corporate Governance section [CG](#)

Corporate Social Responsibility section [CSR](#)

Governance Highlights

Board structure

- 12 of the 13 Directors are independent
- Members of all governance related committees* are INEDs
- 4 of the 13 Directors are female
- Set a goal to achieve gender parity on the Board
- Diverse range of expertise and experience
- Periodic Board refreshment

Board and governance process

- International Advisory Council provides the Board with expert insight and perspective from around the world
- Mainland China Advisory Group advises the Board on the development of China's financial markets and economy
- 46 Board and committee meetings in total in 2022
- Completion of an independent Board evaluation
- Annual review of succession plans
- Annual review of compensation policies
- Robust risk management and internal controls framework
- Embedded compliance culture
- Proactive and ongoing stakeholder engagement

* Refer to the Audit Committee, the Nomination and Governance Committee, the Remuneration Committee, and the Risk Committee

Compliance with Corporate Governance Code

Throughout 2022, HKEX complied with all code provisions and, where appropriate, adopted the recommended best practices set out in the Corporate Governance Code, with the following exceptions:

Code Provision B.2.2 (Retirement by rotation of directors)

- The Government Appointed Directors, all being Non-executive Directors, are not subject to election or re-election by Shareholders as their appointments are governed by the SFO.
- The Chief Executive Officer in his capacity as a Director is not subject to retirement by rotation, as his term on the Board is coterminous with his employment as the Chief Executive Officer with HKEX under HKEX's Articles.

HKEX has applied the principles of the Corporate Governance Code to its corporate governance structure and practices as described in this report and on the HKEX Group website [CG](#) / [IR](#) / [OS](#). A checklist detailing HKEX's compliance with the Corporate Governance Code is available on the HKEX Group website [CG](#). The Board has delegated its corporate governance functions to the Nomination and Governance Committee. A summary of the work of the Committee in 2022/2023 is set out in the Nomination and Governance Committee Report.

HKEX's Culture

HKEX is committed to developing a positive and progressive culture that is built on its Purpose, Vision, and Values; one that allows employees across the Group to thrive, meet their full potential, and that enables the Company to deliver long-term sustainable growth and success and to fulfil its role as an international exchange operator and market regulator.

Throughout 2022, HKEX continued to strengthen its cultural framework by focusing on four specific areas: client centricity, operational excellence, people first, and positivity, through various initiatives set out in the Business Review and the Governance sections of this Annual Report and the 2022 CSR Report.

HKEX's Purpose

To Connect, Promote and Progress our Markets and the Communities they support for the prosperity of all.

HKEX's Vision

Building the Marketplace of the Future

HKEX's Values

- **Integrity** – We always do the right thing.
- **Diversity** – We recognise that great ideas come from anywhere.
- **Excellence** – We promote best-in-class in all that we do.
- **Collaboration** – We're always better together.
- **Engagement** – We are engaged in the markets and communities in which we operate.

More information about HKEX's Purpose, Vision, and Values is available on the HKEX Group website (About HKEX section).

Strategic Planning

HKEX has a rigorous and ongoing strategic planning process to identify and assess the opportunities and challenges that the Group might face and to develop a planned course of action for the Group to generate sustainable long-term value for Shareholders. Details of HKEX's strategic initiatives and priorities for fulfilling its Purpose and Vision are available in the Chief Executive Officer's Review section of this Annual Report and on the HKEX Group website (About HKEX section).

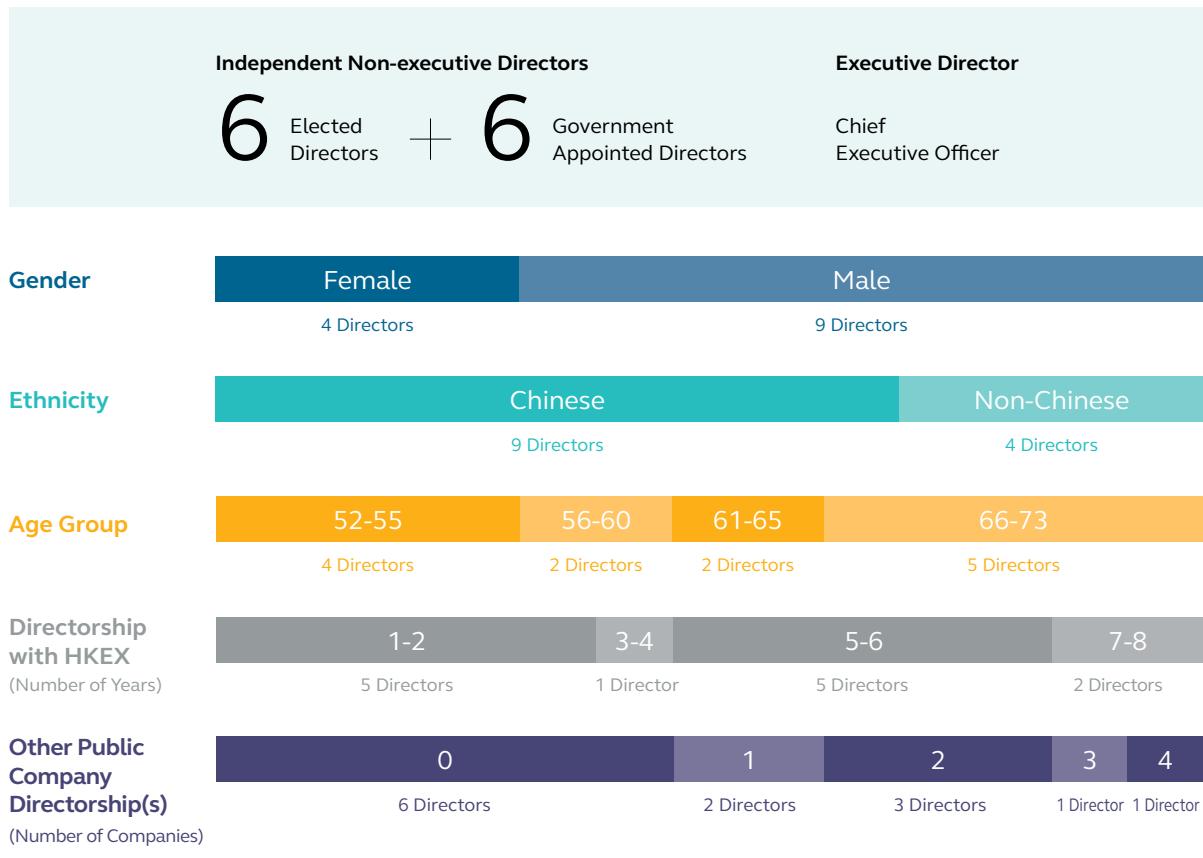
In addition to the mid-year strategy review in March 2022, the Board held a strategy meeting in September 2022 at which the Board and senior executives held in-depth discussions of the Group's strategic direction in support of its Purpose and Vision.

The strategic achievements during the year are reported in the Chief Executive Officer's Review and Business Review sections of this Annual Report.

The Board

Board Composition

The Board's structure is governed by HKEX's Articles and the SFO. The Board has an appropriate mix of skills, experience and diversity that are relevant to HKEX's strategy, governance and business, and strong independent leadership, which underpin its effectiveness and efficiency. Its approach to achieving diversity is set out in the Board Diversity Policy, which is available on the HKEX Group website [CG](#).



The skills matrix below sets out the skills and expertise of the Board that are most relevant to HKEX's strategy, governance and business and to enabling the Board to effectively discharge its duties and responsibilities in attaining HKEX's strategic objectives and achieving sustainable and balanced development for the Group, particularly in terms of:

- Overseeing implementation of HKEX's strategic imperatives in "Connecting China and the World", "Connecting Capital with Opportunities", and "Connecting Today with Tomorrow", to support its vision to build the Marketplace of the Future;
- Promoting sustainability and best-in-class governance and CSR practices across its business, markets and communities, to fulfil its Purpose;
- Overseeing implementation of robust risk management framework and internal controls in view of HKEX's combined role as a market regulator with a public duty and a listed company; and
- Promoting a positive and progressive culture across the organisation, enabling HKEX to deliver long-term sustainable performance and fulfil its role as a responsible corporate citizen.

Directors' Skills and Experience

	Executive leadership & strategy/directorship or senior executive experience with other listed company(ies)	Capital market expertise	International business	Mainland China exposure	Accounting professionals/ financial management expertise	Legal professionals/ regulatory & compliance/ risk management	Digital
INEDs							
Laura M Cha (Chairman)	•	•	•	•		•	
Nicholas Allen	•		•	•	•	•	
Apurv Bagri	•	•	•		•	•	
C H Cheah	•	•	•	•			
Anna Cheung	•	•	•	•	•	•	•
Susan Chow	•		•	•		•	
Rafael Gil-Tienda	•	•	•	•		•	
Benjamin Hung	•	•	•	•			
Nisa Leung	•	•	•	•			•
Hugo Leung	•	•	•	•		•	
Stephen Yiu	•		•	•	•	•	•
Zhang Yichen	•	•	•	•			
Executive Director							
Nicolas Aguzin	•	•	•	•	•	•	•
Coverage (% of entire Board)	100%	77%	100%	92%	38%	69%	31%

The names of the Directors in office during 2022 and up to the date of this report are set out in the Directors' Report contained in this Annual Report. The brief biographies of the current Directors, including their membership at various Board Committees of HKEX, are set out in the Board and Committees section and the Board of Directors and Senior Management section of this Annual Report.

Under HKEX's Articles, the term of office of Non-executive Directors is not more than three years (subject to re-appointment or re-election), although each Government Appointed Director is normally appointed for a term of approximately two years (subject to re-appointment). Staggered terms of service enable the Board to have a good balance of experienced and new Directors. The average tenure of the current Directors as at the date of this report is 4.1 years. The service term of Rafael Gil-Tienda, Nisa Leung and Stephen Yiu (Government Appointed Directors), and C H Cheah and Hugo Leung (Elected Directors) will expire at the conclusion of the 2023 AGM. The Government has appointed Carlson Tong and Joseph Yam and re-appointed Nisa Leung as members of the Board, each for a term of approximately two years from the conclusion of the 2023 AGM until the conclusion of the AGM to be held in 2025. On 23 February 2023, the Board accepted the nomination by the Nomination and

Governance Committee and recommended C H Cheah and Hugo Leung to stand for re-election at the 2023 AGM.

Information about the Board Diversity Policy and the Nomination Policy along with the results of the review of the Board composition and independence, and the nomination of Board candidate during 2022/2023 are set out in the Nomination and Governance Committee Report.

Roles and Responsibilities

Good governance emanates from an effective and accountable board. At HKEX, the Board directly, and indirectly through its committees, leads and provides direction to management by laying down strategies and overseeing their implementation by management. The Board monitors the Group's operating and financial performance, reviews the Group's compensation policies and succession planning, and ensures that a positive and progressive culture, effective governance and CSR policies, and sound internal control and risk management systems are in place. The Board operates under defined terms of reference which set out matters specifically reserved for its decision. The terms of reference are available on the HKEX Group website [OS](#).

For effective oversight and leadership, the Board regularly reviews reports from the Chief Executive Officer and senior executives on the progress of the approved strategies, plans and budgets, and receives updates and advice from the Board committees, external market and industry experts and management on the Group's business performance and development, regulatory landscape, ESG, risk management, and human capital management. In light of the increasingly competitive and complex global environment, the International Advisory Council has been established to provide the Board with expert insight and perspective from around the world. A Mainland China Advisory Group has also been established to advise the Board on the development of China's financial markets and economy. Further details relating to the Board committees, the International Advisory Council, the Mainland China Advisory Group, the Consultative Panels, and HKEX's management functions are set out in the Board Delegation section below.

Board Effectiveness

The Board recognises that conducting regular evaluation of its performance is essential to good corporate governance and Board effectiveness. In 2022, the Board engaged an independent external consultant to evaluate the performance of the boards and key governance committees of HKEX and its subsidiary, OTC Clear.

The evaluation drew from four sources of information:

- (i) Self-assessment survey responses from directors and executives who work closely with the boards and their governance committees;
- (ii) Reviews of key governance documents and select board papers and minutes;
- (iii) Interviews with the directors and select executives; and
- (iv) Observations of board and committee meetings.

The scope of the evaluation focused on four aspects of the boards' operations: artifacts and interactions within the board, interactions between the board and the institution, relationship and interface between the board and the subsidiaries, and effectiveness of board committees.

The evaluation concluded that the Board is compliant with the Corporate Governance Code and that both the Board and the OTC Clear Board are effective. The evaluation also noted that many of the Board's strengths observed in the prior 2019 independent evaluation persist, and material progress has been made across aspects, particularly improvements in the effectiveness of the Board Risk Committee. On a forward-looking basis, the Board shall give attention to the following dimensions:

- Fostering closer collaboration between the Board and senior management, and providing ongoing support to strategic initiatives
- Continuing to evolve the Board's collective expertise and experience to align with the Group's future directions
- Continuing to optimise the focus of the Board versus senior management, and to revisit the setup of certain Board committees
- Further optimising governance models for major subsidiaries to balance visibility, accountability and independence

The evaluation results were presented to the HKEX Nomination and Governance Committee and the Board in October and December 2022 respectively. Recommendations for improvement are being followed up.

Chairman and Chief Executive Officer

The roles of the Chairman and the Chief Executive ("Chief Executive Officer") of HKEX are complementary, but importantly, they are distinct and separate with a clear and well established division of responsibilities. Details of their respective roles and responsibilities are available on the HKEX Group website [CG](#).

Key Responsibilities of Chairman and Chief Executive Officer



The Chairman, the Chief Executive Officer and other Directors do not have any financial, business, family, material or other relevant relationships with each other.

Induction and Development

Upon appointment to the Board, Directors are provided with comprehensive induction training conducted by senior executives and external legal advisers to ensure that they have a thorough understanding of the statutory duties of HKEX as an exchange controller, the Group's operations and governance policies, as well as their role and responsibilities as Board members. Every new Board member receives a Director's Handbook containing the Board's terms of reference, an overview of HKEX's corporate governance framework and Directors' responsibilities, and the Guidelines on Conduct, which set out policies governing conflicts of interest and the anti-bribery and anti-corruption guidelines for Directors. The Director's Handbook and more information about induction training for new Directors are available on the HKEX Group website [www.hkex.com.hk](#).

Ongoing training helps Directors keep abreast of current trends and issues facing the Group, while enabling them to update and refresh the skills and knowledge necessary for the performance of their duties. Directors are invited to attend the Board knowledge sessions, the Board strategy meetings, and the International Advisory Council meetings held during the year, at which external industry experts, Council members, or senior executives of HKEX are engaged on various topics of interest, in particular on global strategies, market best practices, and the latest market trends and developments.

All Directors are required to provide HKEX with their training records, and to confirm their respective records on a quarterly basis. The records are maintained by the Group Company Secretary for annual review by the Nomination and Governance Committee. During 2022, the Directors received an aggregate of about 810 hours of training by attending or participating in Board knowledge sessions, management briefings, and events such as conferences, seminars, and workshops on Directors' duties and other topics relevant to HKEX's strategy, business and governance.

2022 Directors' Training by Topic

	Average hours of training: 62					
	HKEX's strategy/business	Economy/financial markets & products	Director's duties/ESG practices	Financial reporting/risk management	Legislative/regulatory compliance	Digital
INEDs						
Laura M Cha (Chairman)	•	•	•	•	•	•
Nicholas Allen	•	•	•	•	•	•
Apurv Bagri	•	•	•	•	•	•
C H Cheah	•	•	•	•	•	•
Anna Cheung	•	•	•	•	•	•
Susan Chow	•	•	•	•	•	•
Rafael Gil-Tienda	•	•	•	•	•	•
Benjamin Hung	•	•	•	•	•	•
Nisa Leung	•	•	•	•	•	•
Hugo Leung	•	•	•	•	•	•
Stephen Yiu	•	•	•	•	•	•
Zhang Yichen	•	•	•	•	•	•
Executive Director						
Nicolas Aguzin	•	•	•	•	•	•



Board Process

In addition to the mid-year strategy review in March 2022 and the strategy meeting in September 2022, the Board held seven meetings in 2022 to discuss key matters relating to the Group's strategies, business operations, performance, governance, risk management, CSR, investor relations, and human capital, and bi-annual meetings with the Chairman and Deputy Chairmen of the Listing Committee to discuss listing related matters.

Meetings of Non-executive Directors are held from time to time, as appropriate. The HKEX Chairman also has regular gatherings with other Directors, occasionally without the presence of the Chief Executive Officer, to consider issues in an informal setting.

Attendance Record of Directors and Committee Members in 2022 ¹

	2022 AGM		Board				Listing Operation	Nomination and	Panel ²	Remuneration	Risk	Risk Management
	Board	Audit Committee	Executive Committee	CSR Committee	Investment Committee	Governance Committee	Governance Committee	Member Selection Committee	Committee	Committee	Committee	Committee (statutory)
Number of Meetings	1	7	4	4	4	4	4	6	-	5	4	4
INEDs												
Laura M Cha (Chairman)	1/1	7/7		4/4	4/4			6/6		5/5	4/4	4/4
Nicholas Allen	1/1	7/7	4/4								4/4	
Apurv Bagri	1/1	7/7						6/6		5/5		
C H Cheah	1/1	7/7		4/4		4/4		6/6	-	5/5		
Anna Cheung ³	1/1	7/7	4/4	4/4	4/4					4/4		
Susan Chow	1/1	7/7			4/4		4/4			5/5	4/4	4/4
Rafael Gil-Tienda	1/1	7/7						6/6		5/5		
Benjamin Hung	1/1	7/7				4/4		6/6				
Nisa Leung	1/1	7/7	4/4						-		4/4	
Hugo Leung	1/1	7/7	4/4	4/4		4/4	4/4		-		4/4	4/4
Stephen Yiu	1/1	7/7	4/4				4/4		-		4/4	
Zhang Yichen ⁴	1/1	7/7			2/4	4/4		2/4	-			
Executive Director												
Nicolas Aguzin	1/1	7/7		4/4	4/4							
Market Professionals												
Peter Brien ⁵							2/2					
Renu Bhatia ⁵							2/2					
Clara Chan												4/4
David Grimme												4/4
Miranda Kwok												3/4
Rico Leung												4/4
Keith Pogson ⁵							4/4					
Sun Yu												2/4
Attendance Rate	100%	100%	100%	100%	90%	100%	100%	94%	N/A	100%	100%	91% ⁶

1 During 2022, certain members of the Board also performed a regulatory role by serving as members of the Listing Nominating Committee and/or the Listing Policy Panel, and attending as the Chairman, the Deputy Chairman, or members of hearing(s) held by the appeal committees of the regulated entities within the Group from time to time.

2 The Panel Member Selection Committee was dissolved with effect from the conclusion of the 2022 AGM on 27 April 2022, with the roles and functions of the Committee being transferred to the relevant subsidiaries of HKEX. No meeting was held by the Committee from 1 January to 27 April 2022.

3 Ms Cheung was appointed as a member of the Remuneration Committee on 27 April 2022.

4 Mr Zhang was appointed as a member of the Nomination and Governance Committee on 27 April 2022.

5 Ms Bhatia was appointed as a member of the Listing Operation Governance Committee by virtue of her position as the Deputy Chairman of the Listing Committee, to replace Mr Brien who ceased to be the Chairman of the Listing Committee on 8 July 2022. Mr Pogson remained as a member of the Listing Operation Governance Committee following his appointment as the Chairman of the Listing Committee with effect from 8 July 2022.

6 The attendance rate calculation took into account the attendance by the alternate member of the committee.

To facilitate effective oversight and decision making by the Board, HKEX has established a Group Escalation and Incident Reporting Policy to set out guidelines on handling critical concerns relating to the Group’s operations and performance. A Continuous Disclosure and Communication Policy is in place to ensure timely reporting of inside information to the Board and communication with the Group’s stakeholders, which together with other key features of the Board process are available on the HKEX Group website [CG](#).

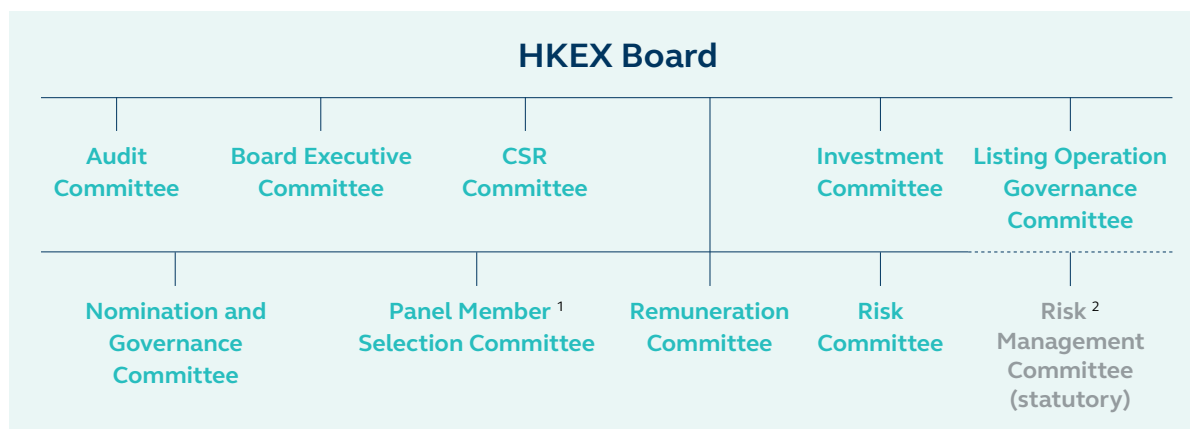
Group Company Secretary

All Directors have access to the advice and services of the Group Company Secretary. The Group Company Secretary reports to the HKEX Chairman on Board governance matters, and is responsible for ensuring that Board procedures are followed and for facilitating information flows and communications among Directors, as well as with Shareholders and management.

The Group Company Secretary’s biography is set out in the Board of Directors and Senior Management section of this Annual Report. During 2022, the Group Company Secretary attended over 15 hours of professional training.

Board Delegation

Committees



1 Dissolved with effect from the conclusion of the 2022 AGM on 27 April 2022, with the roles and functions of the Committee being transferred to the relevant subsidiaries of HKEX
 2 A statutory committee established under Section 65 of the SFO

The Board has delegated authority to various committees to deal with specific matters under defined terms of reference.

The composition and terms of reference of the Board committees are reviewed annually to ensure that they remain relevant and in line with the Group’s business and changes in governance practices. The list of members of the Board committees as at the date of this report is set out in the Board and Committees section of this Annual Report. The attendance record of members of the Board committees in 2022 is set out in “Board Process” above. Details about the Board committees, including their terms of reference, are available on the HKEX Group website [CG](#) / [OS](#). Further information on the work of the Nomination and Governance Committee, Audit Committee, Risk Committee, Remuneration Committee and Corporate Social Responsibility Committee in 2022/2023 are set out in their respective reports contained in this Annual Report.

International Advisory Council

HKEX has established an International Advisory Council to provide the Board with insight and expertise from around the world, on business, economics, technology, and finance, drawing on the extensive skills and experience of its members. Following the expiry of Marcus Wallenberg's and Mary Schapiro's memberships on the Council in May 2022 and February 2023 respectively, the Council comprises five members, and is chaired by the HKEX Chairman. Two Council meetings were held in 2022.

The terms of reference of the Council are available on the HKEX Group website [OS](#).

Members of International Advisory Council

- Laura M CHA (Chairman)
- Stuart GULLIVER
- Weijian SHAN
- Neil SHEN
- Joseph TSAI

Mainland China Advisory Group

HKEX has established the Mainland China Advisory Group ("Advisory Group") to advise the Board on the development of China's financial markets and economy. The Advisory Group is chaired by the HKEX Chairman, and also includes HKEX Chief Executive Officer, as well as a Director and three other senior industry experts with deep China market knowledge and experience. Three Advisory Group meetings were held in 2022.

The terms of reference of the Advisory Group are available on the HKEX Group website [OS](#).

Members of Mainland China Advisory Group

- Laura M CHA (Chairman)
- Nicolas AGUZIN
- Fred HU
- MA Weihua
- ZHANG Lei
- ZHANG Yichen

Consultative Panels

With effective from 1 June 2022, the Cash Market Consultative Panel, the Clearing Consultative Panel and the Derivatives Market Consultative Panel, which provide market expertise and advice to the Group in relation to the trading and clearing in Hong Kong's securities and derivatives markets, have become consultative panels of SEHK, HKSCC and HKFE respectively, and are chaired by management representatives of HKEX. The composition and terms of reference of the Consultative Panels are available on the HKEX Group website [OS](#).

Management

Senior executives, under the leadership of the Chief Executive Officer, are responsible for the day-to-day management of the Group's businesses and implementation of the strategies approved by the Board. The Management Committee, a management decision-making body chaired by the Chief Executive Officer with defined authority delegated by the Board, aims to meet at least twice a month. Its membership as at the date of this report is set out in the Management Committee section of this Annual Report, and its duties are available on the HKEX Group website [OS](#). Members of the Senior Management as at the date of this report and their biographies are set out in the Board of Directors and Senior Management section of this Annual Report.

During 2022, several senior executive changes were made to support the Group's latest strategic focus and replace retired or outgoing executives. Details are set out in the Media Centre (News Release) section of the HKEX Group website. HKEX's updated organisation structure is available on the HKEX Group website [OS](#).

The Board recognises the importance of continuity in senior executives and identifying leaders with appropriate skills and experience to support delivery of the Group's strategic initiatives. Succession planning for senior executives is considered by the Nomination and Governance Committee and the Board annually.

Given the competitive business environment in which the Group operates, HKEX arranges professional development programmes for its senior executives to support its long-term growth and success. During 2022, the Senior Management (excluding HKEX Chief Executive Officer) received an aggregate of about 380 hours of training by attending or participating in conferences, seminars, and workshops on various topics, including HKEX's strategy and business, development of the financial markets, regulatory compliance, ESG practices, risk management, digital technology, and leadership and management skills. Other employees of the Group also attended continuous professional development or other training courses throughout the year. Details are set out in the 2022 CSR Report.

Subsidiary Governance

HKEX is committed to fostering good governance and a strong compliance culture at all levels of the organisation. To ensure an integrated, Group-wide approach towards upholding high governance standards, HKEX regularly reviews and enhances the governance structures and processes of its subsidiaries.

For effective oversight of its subsidiaries, HKEX has established a new Subsidiary Management Framework to enhance risk governance. HKEX promotes governance linkages within the Group through common memberships between the Board and the boards and committees of subsidiaries and appointment of HKEX's senior executives to the boards of the subsidiaries. A list of the directors of HKEX subsidiaries is set out in the Directors' Report contained in this Annual Report. Details about the governance structures of the Group's major subsidiaries (including composition and terms of reference of their boards and committees) are available on the HKEX Group website [OS](#). Induction training and materials have been provided to subsidiaries' non-executive directors to facilitate their understanding of the Group's business and their duties and obligations as a director.

HKEX has implemented a number of Group-wide governance policies and systems, which are subject to regular review, to support its commitment to high standards of business, professional, and ethical conduct, and to ensure best practices across the organisation. HKEX has also established whistleblowing channels for external parties to raise concerns in relation to possible misconduct of the Group, its employees or directors in a confidential or anonymous manner, or both. Details of these whistleblowing channels are available on the HKEX Market website. The Board has delegated authority to the Audit Committee to review the

Group Anti-Bribery and Anti-Corruption Policy and the Group Whistleblowing Policy periodically and receive updates on matters concerning breaches of the Group Anti-Bribery and Anti-Corruption Policy and whistleblowing disclosures.

Key governance policies for employees

- Code of Conduct
- Continuous Disclosure and Communication Policy
- Group Anti-Bribery and Anti-Corruption Policy
- Group Anti-Fraud Policy
- Group Compliance Framework
- Group Personal Account Dealing Policy
- Group Prevention of Financial Crime Policy
- Group Whistleblowing Policy

The Group also organises regular training for new and existing employees to reinforce a strong culture of compliance and risk management.

More information about the Group's governance policies and practices is available on the HKEX Group website [CG](#) / [CSR](#) and in the 2022 CSR Report.

Conflict Management

As a recognised exchange controller, HKEX shall act in the interest of the public with particular regard to the interest of the investing public, and ensure that the interest of the public prevails where it conflicts with HKEX's interest. Given its role of being the exchange controller and a listed company, HKEX has implemented a number of measures to ensure a level playing field with other listed issuers. These include the entering into of an MOU between the SFC and the Stock Exchange, the separation of the regulatory function, and the establishment of a Conflict Committee. More information about HKEX's public and corporate responsibilities and its conflict management measures is available on the HKEX Group website [CG](#).

The HKEX's Guidelines on Conduct as set out in the Director's Handbook serve to provide guidance to directors and committee members of the Group on avoiding conflicts of interest and on the circumstances under which appropriate action(s) shall be taken by the director in conflict. The Guidelines set out the policy governing the acceptance by the Group's directors of external appointments in listed and unlisted companies, which contain specific safeguards that shall be undertaken by HKEX and each director to avoid potential conflicts of interest. The Director's Handbook is available on the HKEX Group website [CG](#).

Remuneration of Directors and Senior Management

HKEX has formal and transparent procedures for fixing the remuneration packages of individual Directors and senior executives. Information about HKEX's remuneration policies and the Remuneration Committee, including its work in 2022/2023, is set out in the Remuneration Committee Report.

Directors' Securities Transactions and Interests in HKEX

Compliance with Model Code

HKEX has adopted the Model Code as its own code of conduct regarding Directors' securities transactions. In response to a specific enquiry by the Company, all Directors confirmed that they complied with the Model Code at all applicable times during 2022.

Directors' Interests and Short Positions in Shares and Underlying Shares of HKEX

The interests and short positions of Directors, including the Chief Executive Officer, in the shares and underlying shares of HKEX (within the meaning of Part XV of the SFO) as at 31 December 2022 as recorded in the register required to be kept under Section 352 of the SFO, or as otherwise notified to HKEX and the SFC under the Model Code, are set out below.

Long Positions in Shares and Underlying Shares of HKEX

Name of Director	Number of shares/underlying shares held					% of HKEX ¹ shares in issue
	Personal interests	Family interests	Corporate interests	Other interests	Total	
Nicolas Aguzin	403,823 ²	–	–	–	403,823	0.03
Anna Cheung	300	–	–	–	300	0.00
Stephen Yiu	–	2,000 ³	–	–	2,000	0.00

1 Based on 1,267,836,895 HKEX shares in issue as at 31 December 2022

2 Includes Mr Aguzin's interest in Awarded Shares and shares acquired out of the dividends from the Awarded Shares, in an aggregate of 195,799 shares which remained unvested under the Share Award Scheme as at 31 December 2022. Details of Mr Aguzin's interest in Awarded Shares are set out in the Remuneration Committee Report.

3 Mr Yiu's spouse was the beneficial owner of those shares.

Save as disclosed above, none of the Directors had any interests or short positions in the shares, underlying shares or debentures of HKEX or any of its associated corporations (within the meaning of Part XV of the SFO) as at 31 December 2022 as recorded in the register required to be kept under Section 352 of the SFO, or as otherwise notified to HKEX and the SFC under the Model Code.

Apart from the Awarded Shares as disclosed in the Remuneration Committee Report and notes 15 and 43 to the Consolidated Financial Statements, during 2022, none of the Directors (including their spouses and children under the age of 18) had any interests in or was granted any right to subscribe for the securities of HKEX or its associated corporations (within the meaning of Part XV of the SFO), or had exercised any such rights.

Other Persons' Interests and Short Positions in Shares and Underlying Shares of HKEX

Minority Controllers

As at the date of this report, other than the Government which has been a Minority Controller since 7 September 2007, 12 entities have been approved by the SFC as Minority Controllers. According to the Participant Shareholding Report as at 31 December 2022, these 12 Minority Controllers in aggregate held approximately 74 per cent of HKEX shares in issue. More information about Minority Controllers is set out on the HKEX Group website [CG](#).

Other persons' interests and short positions in the shares and underlying shares of HKEX (within the meaning of Part XV of the SFO) as at 31 December 2022 as recorded in the register required to be kept under Section 336 of the SFO are set out below.

Long Positions in Shares and Underlying Shares of HKEX

Name	Capacity	Number of shares/ underlying shares held	Total	% of HKEX ¹ shares in issue
HKSAR Government (for the account of the Exchange Fund)	Beneficial owner	74,840,961 ²	74,840,961	5.90

1 Based on 1,267,836,895 HKEX shares in issue as at 31 December 2022

2 Based on Hong Kong Monetary Authority's notification to HKEX on 4 June 2018

Save as disclosed above, no other persons had any interests or short positions in the shares or underlying shares of HKEX as at 31 December 2022 as recorded in the register required to be kept under Section 336 of the SFO, or as otherwise notified to HKEX and the Stock Exchange.

Senior Management

All employees of the Group are obliged to follow the Company's restrictions on dealing in securities, futures contracts, and other derivatives, which are on terms no less stringent than the Model Code, as set out in the Group Personal Account Dealing Policy. Senior Management's interests in the shares and underlying shares of HKEX as at 31 December 2022 are set out below.

Senior Management ¹	Number of shares held	Number of shares that ² remained unvested under the Share Award Scheme	Derivatives (number of underlying shares)
Bonnie Y Chan	10,989	18,364	–
Vanessa Lau	44,512	13,106	–
Katherine Ng	36,315	7,062	–
Richard Wise	–	22,356	–
Wilfred Yiu	34,839	15,644	–

1 HKEX Chief Executive Officer's interest in the shares and underlying shares of HKEX as at 31 December 2022 is set out in the "Directors' Securities Transactions and Interests in HKEX" above.

2 Details of the Senior Management's interests in the Awarded Shares are set out in the Remuneration Committee Report.

Continuing Connected Transactions

In June 2000, the SFC granted a waiver to HKEX from strict compliance with the Main Board Listing Rules with respect to certain continuing connected transactions as referred to in (A), (B) and (C) below. The waiver has remained valid since then. The following table sets out the types of the continuing connected transactions subject to the waiver, and details of any of these continuing connected transactions entered into by the Group during 2022.

- A. Transactions between HKEX or its subsidiaries and HKEX's connected person(s) arising from or in connection with the use of the facilities provided by the Group for the trading, clearing and/or settlement of securities and futures products, and transactions, and all services offered by the Group which are ancillary, incidental or otherwise related to the foregoing:
- The Group did not enter into any of the above transactions with HKEX's connected persons during 2022.
- B. Transactions between HKEX or its subsidiaries and HKEX's connected person(s) arising from or in connection with the listing of securities on the Stock Exchange, and all services offered by the Group which are ancillary, incidental or otherwise related to the foregoing:
- Laura M Cha, the HKEX Chairman, was interested in the transactions entered into by HKR International Limited and Hanison Construction Holdings Limited, which are listed on the Stock Exchange and are Mrs Cha's associates by virtue of the Main Board Listing Rules.
- C. Transactions between HKEX or its subsidiaries and HKEX's connected person(s) arising from or in connection with the HKSCC arrangement on behalf of CCASS Participants for: (i) carrying out "buy-in" when a CCASS Participant has failed to deliver securities on time for settlement under the CNS System or the Isolated Trades System operated by CCASS; (ii) the purchase or sale of securities in connection with the liquidation of the positions of a CCASS Participant that has been declared by HKSCC to be in default; and (iii) the sale of entitlements of securities held through CCASS (collectively referred to as Buy-in Transactions):
- The Group did not enter into any Buy-in Transactions with HKEX's connected persons during 2022.

The Board has delegated authority to the Audit Committee to review the above continuing connected transactions pursuant to Rule 14A.55 of the Main Board Listing Rules. The results of the Audit Committee's review are set out in the Audit Committee Report.

The Company's external auditor was engaged to report on the above continuing connected transactions of the Group in accordance with Hong Kong Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information", and with reference to Practice Note 740 (Revised) "Auditor's Letter on Continuing Connected Transactions under the Hong Kong Listing Rules" issued by the HKICPA. The external auditor has issued an unqualified report containing its findings and conclusions in respect of the transactions disclosed above in accordance with Rule 14A.56 of the Main Board Listing Rules. The Company has provided a copy of the report to the SFC and the Stock Exchange.

Related Party Transactions

During 2022, the Group entered into certain transactions with “related parties” as defined under the applicable accounting standards. Related party transactions are disclosed in note 51 to the Consolidated Financial Statements. They include the following connected transactions under the Main Board Listing Rules.

Related party transactions which constitute connected transactions

Payment of membership fee by an associate of a Director to the LME as covered in note 51(a) to the Consolidated Financial Statements

Compensation to the Chief Executive Officer and the directors of HKEX’s subsidiaries and remuneration to HKEX’s Non-executive Directors, which formed part of the “Key management personnel compensation” described in note 51(b) to the Consolidated Financial Statements

Compliance with Main Board Listing Rules

This was a connected transaction exempt from the connected transaction requirements under Rule 14A.76(1) of the Main Board Listing Rules.

These were continuing connected transactions exempt from the connected transaction requirements under Rule 14A.76(1) or 14A.95 of the Main Board Listing Rules.

Accountability and Audit

Financial Reporting

The Board, which is responsible for overseeing the preparation of annual financial statements, receives monthly updates on the Group’s performance, financial position, and prospects. HKEX publishes its annual, interim, and quarterly results within three months, two months, and 45 days respectively after the relevant period ends. In preparing the financial statements for the year ended 31 December 2022, the Board adopted appropriate accounting policies consistently, made prudent and reasonable judgements and estimates, and ensured that the financial statements were prepared on a going concern basis and show a true and fair view of the consolidated financial position of the Group as at 31 December 2022 and of the Group’s consolidated financial performance and cash flows for the year then ended.

Risk Management and Internal Control

The Board has the overall responsibility for evaluating and determining the nature and extent of the risks (including, among others, material risks relating to ESG) it is willing to take in achieving the Group’s strategic objectives, maintaining sound and effective risk management and internal control systems (including, among others, material risks relating to ESG) and reviewing their effectiveness to safeguard Shareholders’ investment and the Group’s assets. To this end, during 2022, management increased the allocation of resources for the Group to appropriately manage the evolving risk environment. The internal control and risk management systems based on the Committee of Sponsoring Organizations of the Treadway

Commission (COSO) Internal Control – Integrated Framework 2013 and International Organisation for Standardisation (ISO) 31000 Risk Management – Principles and Guidelines provides reasonable, though not absolute, assurance against material misstatement or loss and to manage rather than eliminate the risk of failure to achieve business objectives. Details of the Group’s risk governance structure and the Group Risk Management Framework are set out in the Risk Committee Report. Details of the Group’s key control procedures and internal audit functions are available on the HKEX Group website [CG](#).

The Board reviews the adequacy and effectiveness of the Group’s risk management and internal control systems at least quarterly, through the Risk Committee and the Audit Committee. Information about the Risk Committee and the Audit Committee, including their work in 2022/2023, is set out in their respective reports contained in this Annual Report.

Independence of External Auditor

HKEX has engaged PricewaterhouseCoopers as its external auditor. An analysis of remuneration for audit and non-audit services provided by PricewaterhouseCoopers and details of the Audit Committee’s work in assessing the independence of PricewaterhouseCoopers and ensuring audit effectiveness are set out in the Audit Committee Report.

Information about HKEX’s policies and procedures in safeguarding and supporting the independence and objectivity of the external auditor is available on the HKEX Group website [CG](#).

Diversity and Inclusion

HKEX is committed to developing a positive and progressive culture that is anchored by its Purpose, Vision and Values. In particular, we cultivate a culture that is healthy, diverse and inclusive, where everyone can be their true self and fulfil their own potential, bringing his or her whole self to work every day.

Diversity is one of our five core Values, which is brought to life each day in many ways. HKEX's employee-led diversity networks are sponsored by members of the Management Committee and run by passionate volunteer employees. These networks focusing on Women; Families; Abilities and the LGBT+ community help to create a framework for celebrating diversity, fostering connectivity and collaboration, and shaping fresh thinking at HKEX and within our communities.

Recent key leadership appointments, including but not limited to the recent appointments of Bonnie Y Chan as Co-Chief Operating Officer and Katherine Ng as Head of Listing, demonstrate HKEX's commitment to gender diversity in our workplace and bring the female representation among the Senior Management to three members or 50 per cent. More details on the Group's diversity and inclusion initiatives, including employees' gender ratios, are set out in the 2022 CSR Report.

Shareholder Relations

The Board gives high priority to maintaining balanced, clear, and transparent communications with Shareholders and other investors to facilitate their understanding of the Group's performance and prospects, as well as the market environment in which it operates. HKEX has an ongoing dialogue with Shareholders and other investors through various communication channels set out in the Shareholders Communication Policy and takes any areas of concern into consideration when formulating its business strategies. The effectiveness of HKEX's engagements with Shareholders is assessed during the annual evaluation of the Board's performance as set out in the "Board Effectiveness" above.

Investor Engagement and Communications

HKEX's investor relations team focuses on effective communication with and provision of relevant public information to investors and analysts to support the appropriate valuation of HKEX equity. Through an extensive engagement programme, institutional investors and analysts can interact with the HKEX Chairman, the Chief Executive Officer and other senior executives for updates on the development of the Group's strategic initiatives and operations, as

well as HKEX's corporate governance policies. During 2022, around 130 meetings were held with institutional investors and analysts in Hong Kong, Mainland China, and overseas. Many of these were held virtually, with more in-person meetings taking place from the third quarter of 2022. To facilitate effective investor relations, regular shareholding analyses were conducted under Section 329 of the SFO to gain a better view of changes in HKEX's shareholding structure.

Investor Relations Activities in 2022

- Small group/one-to-one meetings
- Non-deal roadshows
- Analyst briefings
- Investor conferences

Investor Relations Contact Details

Email: investorrelations@hkex.com.hk

Tel: (852) 2840 3330

Investment community views are communicated regularly to the Board, including sell-side consensus rating and target price for HKEX shares and summaries of questions and feedback from investors and analysts. During 2022, major areas of interest for investors included:

- (i) HKEX's three strategic pillars to deliver on its vision to build the Marketplace of the Future as unveiled at the 2022 Corporate Day in March;
- (ii) Updates on the financial performance of the Group;
- (iii) Latest developments regarding the Group's initiatives, including the Connect franchise expansion, product development, IPO market, listing regime reform, and market microstructure enhancements;
- (iv) Progress in gaining a thorough understanding of the events leading up to the nickel market incident and the impact on markets;
- (v) Plans to grow businesses beyond equities, e.g., derivatives, fixed income, and data and technology; and
- (vi) ESG related topics, including board governance and carbon.

To foster investors' understanding of the Group's governance performance, HKEX continues to provide related information to international and local ESG rating agencies regularly and upon request.

Shareholder Engagement and Communications

Corporate communications	<ul style="list-style-type: none"> • HKEX ensures prompt dissemination of corporate communications to enable Shareholders and other stakeholders to keep abreast of the Group's business and developments so that they can make informed decisions. • The HKEX Group website has been adopted as the designated company website for publication of HKEX's announcements, notices and other corporate communications. As at 31 December 2022, about 78 per cent of Shareholders had opted to receive corporate communications via electronic means.
Financial key dates	<ul style="list-style-type: none"> • The financial calendar highlighting important dates for Shareholders in 2023 is set out in the Shareholder Information section of this Annual Report and is also available on the HKEX Group website IR.
Dividend information	<ul style="list-style-type: none"> • HKEX's dividend policy is set out in the Shareholder Information section of this Annual Report. Information about HKEX's dividend record is available on the HKEX Group website IR.
General meetings	<ul style="list-style-type: none"> • One or more Shareholders representing at least 5 per cent of the total voting rights of all Shareholders having a right to vote at general meetings may request the Board to call a general meeting. The request must state the general nature of the business to be dealt with, and it may include the text of a resolution that may properly be moved and is intended to be moved at the meeting. Such requests must be sent to the Group Company Secretary at HKEX's registered office, or by email to ssd@hkex.com.hk. • Under HKEX's Articles, if a Shareholder wishes to propose a person for election as a Director at a general meeting, he or she should give written notice of the nomination to the Group Company Secretary at HKEX's registered office. Details of the procedures for nominating candidates to stand for election as a Director at the 2023 AGM are set out in the circular to Shareholders to be sent together with this Annual Report. • Shareholders may put forward proposals at general meetings by sending written notice of their proposals to the Group Company Secretary at HKEX's registered office, or by email to ssd@hkex.com.hk. Details of the procedures for putting forward proposals by Shareholders are set out on the HKEX Group website CG.
Policies and guidelines	<ul style="list-style-type: none"> • The Shareholders Communication Policy ensures that Shareholders and the investment community are provided with ready, equal, and timely access to information about HKEX (including its financial performance, strategic goals and plans, material developments, governance and risk profile), and also allows them to engage actively with HKEX. The policy sets out various communication channels including, among others, the HKEX Group website, investor briefings and Shareholders' meetings, through which Shareholders, both individual and institutional, may communicate with and provide feedback to HKEX from time to time. The policy is regularly reviewed to ensure its effectiveness and is posted on the HKEX Group website CG. • The Shareholders' Guide with answers to the frequently asked questions of Shareholders with regard to their interests in HKEX shares is also available on the HKEX Group website CG.
Shareholding analysis	<ul style="list-style-type: none"> • Based on publicly available information and within the Directors' knowledge as at the date of this report, approximately 100 per cent of the HKEX shares were held by the public. HKEX's market capitalisation and shareholding distribution as at 31 December 2022 are set out in the Shareholder Information section of this Annual Report.

Further details about the Group's engagement activities with Shareholders and other stakeholders in 2022 are set out in the CSR Committee Report and the 2022 CSR Report.

The Board is grateful to Shareholders and other stakeholders for their continued support and welcomes their views as well as any questions they may have about the management and governance of the Group. Shareholders and other stakeholders may at any time send their enquiries and concerns to the Board by addressing them to the Group Company Secretary and sending them by post to the Secretarial Services Department, HKEX, 8/F, Two Exchange Square, 8 Connaught Place, Central, Hong Kong, or by email to ssd@hkex.com.hk.

2022 Annual General Meeting

HKEX uses the AGM as a forum to establish constructive dialogue with Shareholders. Separate resolutions are proposed on each substantially separate issue, with all resolutions considered in a poll conducted by HKEX's registrar and verified by an independent scrutineer. Electronic voting is used at the AGMs to enhance efficiency and transparency of the vote counting process.

Shares voted at the 2022 AGM

47.8%

of total issued shares

All the Directors in office on the meeting date, including the HKEX Chairman and the Chairmen of the Audit Committee and other Board committees, attended the 2022 AGM along with key senior executives and the external auditor, and answered questions raised by Shareholders at the meeting. In light of the Covid-19 situation, a live webcast of the 2022 AGM was arranged and made available on the HKEX Group website for Shareholders who were not able to attend the meeting.

The voting results and the minutes of the 2022 AGM are available on the HKEX Group website [IR](#).

Key Matters Resolved at the 2022 AGM ¹

- Receipt of the 2021 audited financial statements
- Re-election of Apurv Bagri as Director
- Re-appointment of PricewaterhouseCoopers as the Company's auditor
- Granting a general mandate to buy back HKEX shares (not exceeding 10 per cent of the number of shares in issue)
- Granting a general mandate to issue HKEX shares (not exceeding 10 per cent of the number of shares in issue and at a price not exceeding a discount of 10 per cent)
- Adjustment of Non-executive Directors' remuneration

¹ The full text of the resolutions is set out in the Notice of the 2022 AGM.

2023 Annual General Meeting

The 2023 AGM will be held on Wednesday, 26 April 2023 at 4:30 pm at HKEX Connect Hall on the 1st Floor, One and Two Exchange Square, Central, Hong Kong. The Notice of the 2023 AGM, which constitutes part of a circular to Shareholders, will be sent together with this Annual Report. The Notice, the circular which sets out details of the business to be conducted at the 2023 AGM, and the proxy form will be available on the HKEX Group website [IR](#). The results of the voting on the proposed resolutions will be published on the HKEX Group website [IR](#) shortly after the 2023 AGM is held.

Shareholders may appoint the Chairman of the 2023 AGM as their proxy to vote on the resolutions, instead of attending the meeting in person. A live webcast of the 2023 AGM will be arranged and made available on the HKEX Group website for Shareholders unable to attend the meeting. To ensure the safety of the Shareholders attending the meeting, HKEX may implement additional precautionary measures at the 2023 AGM where appropriate or in accordance with prevailing guidelines published by the Government and regulatory authorities. Details of any such measures will be set out in the circular to Shareholders, and any further updates will be announced as appropriate.

Changes after Closure of Financial Year

This report takes into account the changes that occurred between the end of 2022 and the date of the approval of this report.

On behalf of the Board

FU Yat Hung, David

Group Company Secretary

Hong Kong, 23 February 2023

Nomination and Governance Committee Report

The Nomination and Governance Committee

The Nomination and Governance Committee (NGC) is delegated with the authority by the Board to review the Board's composition and diversity, formulate and implement the policy for nominating Board candidates for election by Shareholders, make recommendations to the Board on the appointment of Directors and members to the Board committees, and assess INED's independence and commitment. The NGC is also responsible for succession planning for Directors and senior executives, leadership training and development, and oversight of matters relating to corporate governance. Its terms of reference are available on the HKEX Group website [OS](#).

The NGC comprises six INEDs whose names and biographies are set out in the Board and Committees section of this Annual Report. The NGC held six meetings in 2022. Members' attendance records are disclosed in the Corporate Governance Report contained in this Annual Report.

Summary of Work in 2022/2023

- Approved engagement of an external consultant to conduct an independent evaluation of the performance of the Board and the board of OTC Clear and their governance committees in 2022; and reviewed the evaluation results
- Reviewed the composition of the Board and its committees
- Nominated Board candidates for election/re-election by Shareholders at AGMs
- Recommended the appointment of Directors to the Board committees
- Reviewed the independence of the INEDs
- Reviewed the external appointments of Directors
- Reviewed the time commitment of Directors for performance of their responsibilities
- Reviewed succession planning of the Board and the senior executives
- Endorsed appointments to Senior Management
- Reviewed the NGC's terms of reference
- Reviewed the policy on acceptance of external directorships and other appointments by directors of HKEX and its subsidiaries
- Reviewed the training and continued professional development of the Directors and Senior Management
- Endorsed the annual Corporate Governance Report

Changes in Non-executive Directors during 2022

In February 2022, the Government re-appointed Laura M Cha, Susan Chow, and Benjamin Hung to the Board, each for a term of approximately two years from the conclusion of the 2022 AGM until the conclusion of the AGM in 2024.

At the 2022 AGM, Apurv Bagri was re-elected by Shareholders for a term of approximately three years from 27 April 2022 until the conclusion of the AGM in 2025.

Board Composition and Diversity

HKEX sees increasing diversity at the Board level as an essential element in attaining its strategic objectives and achieving sustainable and balanced development for the Group. Since 2013, HKEX has followed the Board Diversity Policy, which is available on the HKEX Group website [CG](#). The Policy highlights the benefits of diversity with respect to the Board's effectiveness and decision-making

process, its succession planning and development, and attainment of HKEX's strategic objectives, and sets out the Board's commitment to gender diversity and other diversity aspects. Throughout 2022, and up to the date of this report, the Board had four female Directors, representing 31 per cent of the Board. The Board targets to maintain at least the current level of female representation, with the ultimate goal of achieving gender parity. The Board will continue to seek opportunities to increase the proportion of female members over time as and when suitable candidates are identified.

To further enhance Board diversity while maintaining an appropriate balance between continuity of experience and Board refreshment, HKEX sets out in the Nomination Policy a non-exhaustive list of criteria for the NGC to assess suitability of a proposed Non-executive Director candidate and a maximum tenure of nine consecutive years for Non-executive Directors to be eligible for the Board's nomination for re-election by Shareholders. The Nomination Policy is available on the HKEX Group website [CG](#).

During 2022, the NGC reviewed the structure, size, and diversity of the Board as well as the selection criteria for Non-executive Director candidate(s) and the Board Diversity Policy, to ensure that the Board's composition complies with the Main Board Listing Rules and reflects an appropriate mix of skills, experience, and diversity that are relevant to HKEX's strategy, governance, and business and contribute to the Board's effectiveness and efficiency. Information about the Board's current composition, including a Directors' skills matrix, is set out in the Corporate Governance Report contained in this Annual Report.

Nomination of Candidates

The service term of Nisa Leung, Rafael Gil-Tienda and Stephen Yiu (Government Appointed Directors), and C H Cheah and Hugo Leung (Elected Directors) will expire at the conclusion of the 2023 AGM.

During 2022, in considering the Board's succession, the NGC engaged an independent professional search firm to help identify potential Non-executive Director candidates to meet the strategic objectives of the Group and promote diversity (including gender diversity) on the Board. The NGC reviewed the profiles of the candidates, with regard to the Board's current composition, the Directors' skills matrix, the list of selection criteria for Non-executive Directors that have been approved by the Board, the Nomination Policy, and the Board Diversity Policy. The NGC also arranged interviews with the shortlisted candidates individually.

The Government has appointed Carlson Tong and Joseph Yam and re-appointed Nisa Leung as members of the Board, each for a term of approximately two years from the conclusion of the 2023 AGM to be held on 26 April 2023 until the conclusion of the AGM to be held in 2025.

On 22 February 2023, the NGC nominated C H Cheah and Hugo Leung to the Board for it to recommend to Shareholders for re-election at the 2023 AGM. Mr Cheah, who is a member of the NGC, abstained from voting at the Committee meeting when his own nomination was being considered.

The nominations were made in accordance with the Nomination Policy and took into account the approved selection criteria for Non-executive Director candidate(s). These include, among others, the candidates' market knowledge and experience, reputation for integrity, and the diversity aspects (including without limitation, gender, age, cultural and educational background, ethnicity, professional experience, skills, knowledge and length of service), with due regard for the benefits of diversity, as set out in the Board Diversity Policy. The NGC took into consideration Mr Cheah's in-depth knowledge of the fund management industry and Mr Leung's extensive experience in the global markets business, as well as their respective contributions to the Board and firm commitments to their roles. The NGC also considered that their re-election as Directors would provide a diversity of skills, expertise and background to the Board, which would benefit the future development of HKEX. The NGC was satisfied with the independence of Mr Cheah and Mr Leung with reference to the criteria laid down in the Main Board Listing Rules.

Neither Mr Cheah nor Mr Leung holds any cross-directorships nor has any significant links with other Directors through involvement in other companies or bodies. Mr Cheah and Mr Leung do not have any service contracts with any member of the Group that are not determinable by the Group within one year without compensation (other than statutory compensation). Their particulars will be set out in the circular to Shareholders to be sent together with this Annual Report and posted on the HKEX Group website [IR](#).

Board Independence

Independent Directors enhance the effectiveness and decision-making of the Board by providing objective judgement and constructive challenge to management.

Non-executive Directors' independence is assessed upon appointment, annually, and at any other time where the circumstances warrant reconsideration.

Ongoing Assessment

- Each INED is required to inform HKEX as soon as practicable if there is any change in his or her personal particulars that may affect his or her independence. No such notification was received during 2022.
- Details of the Director's interests in the Group's business are set out on pages 91 and 92 of this Annual Report.

On 22 February 2023, the NGC assessed the annual independence confirmation received from each INED, having regard to the criteria under Rule 3.13 of the Main Board Listing Rules.

Annual Assessment

- As a good corporate governance practice, every NGC member abstained from assessing his/her own independence.
- Particular attention was given to assessing the independence of the Government Appointed Directors (including Laura M Cha, who was an Executive Councillor up to 30 June 2022) given that the Government is a Minority Controller of HKEX.
- The NGC affirmed that all INEDs continued to demonstrate strong independence in judgement and were free from any business or other relationship which could interfere with their ability to discharge their duties effectively, and they therefore all remained independent.

The NGC also reviewed and considered that the following key features or mechanisms under HKEX's Board and governance structure are effective in ensuring that independent views and input are provided to the Board.

Board and Committees' structure	<ul style="list-style-type: none"> • Since its listing, HKEX has been steered by a Board, comprising a majority of Non-executive Directors. The HKEX Chief Executive Officer is the only Executive Director on the Board, and all the remaining 12 Directors, including the HKEX Chairman, are INEDs, who are independent of and not related to each other and any members of the Senior Management. • Members of all governance related committees are INEDs. • Separation of the role of the Chairman and the Chief Executive Officer ensures that there is a balance of power and authority.
Non-executive Directors' tenure	<ul style="list-style-type: none"> • The Nomination Policy sets a maximum tenure of nine consecutive years for Non-executive Directors to be eligible for nomination by the Board to stand for re-election by Shareholders.
Non-executive Directors' remuneration	<ul style="list-style-type: none"> • Non-executive Directors receive fixed fee(s) for their role as members of the Board and Board Committee(s) as appropriate, and are not entitled to participate in the Share Award Scheme. Information about the Directors' remuneration is set out in the Remuneration Committee Report and note 15 to the Consolidated Financial Statements.
Appointment of Non-executive Directors	<ul style="list-style-type: none"> • Independent professional search firm(s) is/are engaged from time to time to help identify potential candidates for appointment of Non-executives Directors. • In assessing suitability of the candidates, the NGC reviews their profiles, including their qualification and time commitment, having regard to the Board's composition, the Directors' skills matrix, the list of selection criteria approved by the Board, the Nomination Policy and the Board Diversity Policy.

Annual review of Non-executive Directors' commitment and independence	<ul style="list-style-type: none"> • The NGC reviews annually each Director's time commitment to HKEX's business. Directors' attendance records in 2022 are disclosed in the Corporate Governance Report contained in this Annual Report. • Non-executive Directors' independence is assessed upon appointment, annually, and at any other time where the circumstances warrant reconsideration.
Conflict management	<ul style="list-style-type: none"> • The HKEX's Guidelines on Conduct contained in the Director's Handbook provide guidance to directors and committee members of the Group on avoiding conflicts of interest and on the circumstances under which appropriate action(s) shall be taken by the director in conflict. More information about the Group's conflict management measures is set out in the Conflict Management section of the Corporate Governance Report contained in this Annual Report.
Professional advice	<ul style="list-style-type: none"> • To facilitate proper discharge of their duties, all Directors are entitled to seek advice from the Group Company Secretary or the in-house legal team as well as from independent professional advisers at the Company's expense.
Board evaluation	<ul style="list-style-type: none"> • The quality and efficiency of discussions at Board meetings are assessed during the annual evaluation of the Board's performance. Further details relating to Board evaluation are set out in the Board Effectiveness section of the Corporate Governance Report contained in this Annual Report.

Laura M CHA

Chairman of the Nomination and Governance Committee

Hong Kong, 22 February 2023

Audit Committee Report

The Audit Committee

The Audit Committee (AC) is delegated by the Board with the authority to provide independent oversight of the Group's financial reporting and internal control systems, and of the adequacy of the external and internal audits. The AC is provided with sufficient resources to perform its duties, including support, as necessary, from the Group Internal Audit (GIA), the external auditor, legal counsel, regulatory compliance and management, in examining all matters relating to the Group's adopted accounting principles and practices, and in reviewing all material financial, operational and compliance controls. The AC's terms of reference are available on the HKEX Group website [OS](#).

The AC comprises five INEDs whose names and biographies are set out in the Board and Committees section of this Annual Report. None of the members of this committee was a partner of HKEX's external auditor within two years immediately before his or her appointment. The AC held four meetings in 2022. Members' attendance records are disclosed in the Corporate Governance Report contained in this Annual Report.

Summary of Work in 2022/2023

- Reviewed the Group's quarterly, half-yearly, and annual financial reports and results announcements to ensure integrity, transparency and consistency of the financial disclosures
- Reviewed and endorsed the proposed adoption of new accounting standards for financial years ending on or after 31 December 2023
- Reviewed and endorsed the proposed revision of reportable segments for financial years ending on or after 31 December 2023
- Reviewed, with both the external auditor and management, the audit approach and methodology applied, in particular to the Key Audit Matters included in the Auditor's Report
- Approved revisions of the Group Internal Audit Charter
- Approved the internal audit plan for 2023 and conducted quarterly review of the internal audit activities
- Reviewed significant issues raised by GIA, the external auditor and external consultants, management's response to their recommendations, and follow-up remedial actions and improvement plans
- Approved amendments to the Group Anti-Bribery and Anti-Corruption Policy and the Group Whistleblowing Policy
- Reviewed quarterly reports and updates on legal and regulatory compliance matters, anti-bribery and anti-corruption matters and whistleblowing disclosures
- Reviewed the adequacy and effectiveness of the Group's internal control systems and its accounting, financial reporting, and internal audit functions
- Reviewed the continuing connected transactions and the related disclosures in the Annual Report
- Reviewed and monitored the relationship with the external auditor, including overseeing its appointment, independence, remuneration, tenure, rotation of the engagement partner and engagement for non-audit services
- Reviewed the effectiveness of the external audit process
- Approved the 2022 external audit engagement letters and fees
- Reviewed the AC's terms of reference

Review of Financial Results

The AC reviewed the 2022 Consolidated Financial Statements in conjunction with the external auditor. Based on this review and discussions with management, the AC was satisfied that the Consolidated Financial Statements were prepared in accordance with applicable accounting standards and fairly present the Group's financial position and results for the year ended 31 December 2022. The AC therefore recommended that the Consolidated Financial Statements for the year ended 31 December 2022 be approved by the Board.

Review of Key Audit Matters

The AC reviewed and discussed with the external auditor and management the following key audit matters for the audit of the 2022 Consolidated Financial Statements.

Key Audit Matters	Assessment by the AC
Goodwill impairment assessment	The AC was satisfied that sufficient analysis (including the sensitivity analysis on key assumptions) had been performed in this area to conclude that there was no impairment allocated to the group of Cash Generating Units within the respective Commodities and Post Trade operating segments. The assessment was also an area of focus for the external auditor as detailed in the Auditor's Report on page 127.
IT systems and controls over revenue and financial accounting and reporting processes	The external auditor's key audit matters included IT systems and controls since the Group's financial accounting and reporting processes are highly dependent on their design and operating effectiveness. The AC noted and agreed with the external auditor that the key IT systems could be relied on to ensure the accuracy and completeness of revenue recognition during the financial accounting and reporting processes. The findings of the external auditor are set out in the Auditor's Report on page 128.

Review of Internal Control Systems

The AC reviewed the adequacy and effectiveness of the Group's policies and procedures regarding internal control systems (including the financial, operational, IT, risk management, information security, outsourcing, legal, compliance and those controls designed to detect material fraud) by reviewing the work of the GIA, the Group's external auditor, and external consultants, and regular reports from management including those on risk management, regulatory compliance, and legal matters.

In conjunction with the Risk Committee, the AC reviewed and concurred with the management confirmation that for the year ended 31 December 2022, the Group's risk management and internal control systems were adequate and effective with reference to the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control – Integrated Framework 2013 and International Organisation for Standardisation (ISO) 31000 Risk Management – Principles and Guidelines. The AC is satisfied that the Group has complied satisfactorily with the requirements of the Corporate Governance Code in respect of risk management and internal control systems, and that the Group has satisfactorily maintained appropriate levels and control measures in response to the Covid-19 pandemic.

Review of Accounting, Financial Reporting and Internal Audit Functions

The AC reviewed and was satisfied with the adequacy of the resources, staff qualifications and experience, training programmes and budget of the Group's accounting, financial reporting and internal audit functions.

Review of Continuing Connected Transactions

During 2022, the Group entered into certain continuing connected transactions as disclosed in the Corporate Governance Report contained in this Annual Report. The AC, under the authority delegated by the Board, reviewed these continuing connected transactions pursuant to Rule 14A.55 of the Main Board Listing Rules. The AC confirmed that the transactions were entered into by the Group in accordance with the requirements of the Main Board Listing Rules and the conditions of the waiver granted by the SFC that:

- (i) continuing connected transactions are entered into in the Group's ordinary and usual course of business, and on normal commercial terms or on terms no more favourable than terms available to independent third parties;
- (ii) continuing connected transactions other than Buy-in Transactions are conducted in accordance with the rules and regulations of the relevant Group company governing such transactions, and where the rules and regulations do not govern those transactions in full, in accordance with the standard terms and conditions of the relevant Group company relating to such transactions;
- (iii) continuing connected transactions in respect of Buy-in Transactions are conducted in accordance with the standard terms and conditions of HKSCC applicable generally to all buy-in brokers and at the mutually agreed commission rates payable by HKSCC in respect of Buy-in Transactions generally; and
- (iv) continuing connected transactions are entered into according to the relevant agreements governing each of the continuing connected transactions on terms that are fair and reasonable and in the interests of Shareholders as a whole.

The Company's external auditor was engaged to report on the transactions in accordance with Rule 14A.56 of the Main Board Listing Rules. The AC reviewed the unqualified report issued by the external auditor dated 20 February 2023.

Independence of External Auditor

The AC is mandated to monitor the independence of the Group's external auditor, PricewaterhouseCoopers (PwC), to ensure its objectivity in auditing the financial statements. In general, the external auditor has to refrain from engaging in non-assurance services required by the Group except for limited tax-related services or specifically approved items. All services provided by PwC must be approved by the AC. To ensure that the policy of restricting the non-audit work done by the external auditor is followed strictly by all entities within the Group, appropriate policies and procedures have been established which set out:

(i) the classification of services as pre-approved, not pre-approved and prohibited; and (ii) the approval process for services that have not been pre-approved. To strengthen the independence of the external auditor, HKEX has adopted a five-year rotation policy regarding the engagement partner of the auditor. Pursuant to the rotation policy, a new engagement partner has been assigned to HKEX in 2022.

With respect to the independence of the Group's external auditor, the AC received confirmation from and discussed with PwC on its independence and objectivity.

During the year, the AC reviewed PwC's statutory audit scope and non-audit services and approved its fees. Under the approval procedures for audit fees, all audit fees for entities within the Group were coordinated and presented by PwC Hong Kong and were approved by the AC.

External Auditor's Services and Fees

	2022 \$m	2021 \$m
Audit services	19	18
Non-audit services		
• Tax advisory and compliance	1	2
• Other services	1	-
Total	21	20

Re-appointment of External Auditor

The AC was satisfied with PwC's work, its independence, objectivity, qualifications, expertise, resources and the effectiveness of the audit process, and therefore recommended the re-appointment of PwC (which has indicated its willingness to continue in office) as the Group's external auditor for 2023 for Shareholders' approval at the 2023 AGM.

YIU Kin Wah, Stephen

Chairman of the Audit Committee

Hong Kong, 20 February 2023

Risk Committee Report

Risk Statement

Effective risk management is important to the Group's achievement of its strategic goals.

The Group manages risk across multiple risk domains, including but not limited to financial, business and strategic, operational (including IT and cyber security), ESG, and legal and regulatory risks.

Business operations are managed in line with risk appetite tolerances set by the Board.

The Group seeks to ensure it achieves its strategic goal of being the global markets leader in the Asian time-zone; building upon our role as the leading venue for investing into and out of Mainland China, while increasing our international relevance to China, and our Asia relevance to the global markets.

This includes acting in the interest of the public with particular regard to the interest of the investing public, maintaining stakeholder trust, and supporting the integrity of the financial system. The Group recognises its role as a market infrastructure provider and manager of systemic risk, and that its long-term sustainability is dependent on its pursuit of strategic goals while simultaneously managing risks, having sufficient capital and liquidity, ensuring continuity of operations, and protecting its reputation.

The Group aims to maintain sufficient capital and liquidity to meet its regulatory obligations, which require it to have financial resources to cover potential losses and liquidity needs for a range of stress scenarios taking into account extreme but plausible market conditions. As a business, the Group also aims to maintain sufficient capital over and

above that required to meet its regulatory obligations in order to fund its strategic development objectives while ensuring the appropriate balance between risk and shareholder returns. The Group applies risk management measures to strategic initiatives that are designed to limit the Group's exposure to potential losses. It also seeks to maintain liquid financial resources to meet unforeseen cash outflows. The Group strives to maintain stakeholder trust by avoiding business practices that could lead to reputational damage or harm to the Group. The Group, therefore, seeks to operate within all relevant rules and regulations and to avoid disruptions to its business operations that would have a negative impact on stakeholders.

The Risk Committee

The Risk Committee is delegated by the Board to oversee the Group's overall Risk Management Framework and to advise the Board on the Group's risk-related matters. The Committee is also responsible for reviewing the Group's risk and compliance policies and, in conjunction with the Audit Committee, assessing the adequacy and effectiveness of the Group's risk management and internal control systems. The Committee's terms of reference are available on the HKEX Group website [OS](#). The Committee comprises six INEDs whose names and biographies are set out in the Board and Committees section of this Annual Report. The Committee held four meetings in 2022. Members' attendance records are disclosed in the Corporate Governance Report contained in this Annual Report.



Summary of Work in 2022/2023

- Approved the new HKEX Conflicts of Interest Policy
- Approved the new Group Code of Conduct
- Approved the Group Risk Taxonomy
- Approved the Group Cyber Risk Management Policy
- Approved the Group Third Party Risk Management Policy
- Approved the clearing risk protocol for the Swap Connect project
- Approved the HKCC Default Fund Sizing Assumption from “Cover 1+5” to “Cover 2”
- Approved the Holiday Trading, Clearing and Risk Management Arrangement
- Approved the Group Model Risk Governance Policy
- Endorsed the Committee’s Terms of Reference Compliance Assessment
- Endorsed the Group Risk Appetite Statements updates
- Endorsed the Treasury Risk Appetite updates
- Reviewed VaR Platform (formally known as NGRM) Assurance
- Reviewed the revision of the Group Whistleblowing Policy
- Reviewed the HKEX Group Compliance Framework
- Reviewed Market Contingency Plan and Business Continuity Drill Update
- Reviewed the results of annual Attestation and Inspection Programme and the plan for 2022
- Reviewed the results of Independent Validation, plan for Independent Validation 2022 and the implementation of the Model Risk Management System
- Reviewed the Issue Management update
- Reviewed the Independent Risk Review update
- Reviewed the Cyber Improvement update
- Reviewed the Clearing Risk Committee report
- Reviewed the Monitoring and Testing Plan
- Reviewed the results of the Group’s quarterly Group Risk Management processes that cover HKEX, the LME Group, and QME, including risk heatmaps and dashboards, summaries of assurance activities, emerging risks and clearing house liquidity, capital adequacy, and solvency levels
- Reviewed the management confirmation on the adequacy and effectiveness of the Group’s risk management and internal control systems

Operating an adequate and effective risk management and internal control system is essential for achieving the Group’s strategic objectives and maintaining service delivery targets. The Risk Committee is responsible for overseeing the Group’s risk management approach, policy and framework. The Group operates a consistent methodology using the Group Risk Management Framework for the identification, assessment, reporting and management of risks. Risk identification and management is the responsibility of Group management. 2022 was a year characterised by a significant increase in volatility across global asset

markets. Emergent risk events were escalated and managed in accordance with established Group processes and procedures. Of most significance was the management of the disorderly nickel market in Q1 2022. The risk management and internal control systems adopted by the Group remain adequate and effective in evaluating, determining and managing significant risks that the Group may take in achieving its strategic objectives. The Group has satisfactorily maintained appropriate levels and control measures in response to the Covid-19 pandemic which was particularly relevant during the first half of 2022.

Risk Governance

The Group’s risk governance structure is based on a “Three Lines of Defence” model, with oversight and direction from the Board, the Risk Committee, and Group management through the Executive Risk Committee (ERiC).

ERiC is delegated by the Management Committee to oversee and manage the Group’s risk management activities and report to the Risk Committee on a quarterly basis. ERiC reviews and evaluates the Group’s risk profiles and the associated risks in achieving the Group’s strategic objectives; reviews the Group’s risk and compliance policies; monitors the effectiveness of controls across all key risk types; and fosters risk management culture across the Group. ERiC also delegates specific tasks to management sub-committees for further discussion and handling when necessary.



Group Risk Management

The Group Risk Management Framework, approved by the Risk Committee, mandates a consistent and effective approach applied across the Group to manage the risks associated with its business and operations. The framework is based on the International Organisation for Standardisation (ISO) 31000 Risk Management – Principles and Guidelines. The following diagram illustrates the key processes adopted under the Group Risk Management Framework.



Principal Risks

The Group faces a number of principal risks and uncertainties that, if not properly managed, could create an exposure for the Group. Thorough risk assessment and mitigation help ensure these risks are well managed and governed effectively. The Group focuses on addressing the following principal risks.

Principal Risk	Description	Key Mitigations
Strategic Risk	The risk of material adverse changes to the Group's business performance, development prospects and/or ability to deliver its objectives and strategic goals, caused by changes in the business, economic, regulatory or political environments in which the Group operates	<ul style="list-style-type: none"> Proactive monitoring of global exchange industry trends, competitors, climate change and innovations Proactive monitoring of and preparation for global and local changes in regulations affecting the Group Responsive project controls in place to allow strategic flexibility and timely resource allocation Proactive monitoring of geopolitical developments, including impacts of sanctions
Human Capital Risk	The risk of operational impact as a result of not being able to retain key personnel, engage employees and develop new capabilities	<ul style="list-style-type: none"> Enhancement of the risk measures used as an indicator of the trend in attrition across the Group. This is coupled with the time required to backfill these vacancies to provide a more holistic view Enhancement of the succession plan to cover all key positions across the organisation
Legal & Compliance Risk	<p>The risk of unexpected or uncertain application of a law or regulation to the Group's business or operations</p> <p>The risk of incurring penalties, financial loss and/or loss of operating licence resulting from the Group's failure to act in accordance with industry laws and regulations, statutory obligations, internal policies or prescribed best practices</p>	<ul style="list-style-type: none"> Implementation of a new Contract Management System Legal review of contracts Establishment of new functions for monitoring and testing and advisory Implementation of a new HKEX Conflicts of Interest Policy to better manage conflict of interest
Data Risk	The risk of any unexpected or underestimated adverse impact on the Group as a result of limitations to or issues arising from its ability (or that of a third party) to effectively, appropriately or lawfully process, manage and/or protect its data in its ownership or possession	<ul style="list-style-type: none"> Site and data centre security Establishment of the Group Data Protection Office providing consultation to day-to-day operations and new business initiatives
Treasury Investment Risk	The risk of financial impact on the Group resulting from Group treasury activities	<ul style="list-style-type: none"> Investment capital at risk limited by investment policies, restrictions, and guidelines Investment portfolio stress limits Exposure to foreign exchange risk limited due to HKD/USD peg and immaterial hedged exposure to other currencies
Credit Risk	The risk that a counterparty will not settle an obligation in full value, either when due or any time thereafter	<ul style="list-style-type: none"> Default management and recovery procedures in place A credit risk management function in place Stress testing of collateral and margin deposits Assessment of financial impact on the Group from counterparty defaulting

Principal Risk	Description	Key Mitigations
Liquidity Risk	The risk of being unable to settle obligations as they fall due whether relating to the Group's or HKEX's actual or modelled cash flow requirements and/or regulatory requirements under extreme but plausible market conditions	<ul style="list-style-type: none"> Investment policy, restrictions, and guidelines in place covering Corporate Funds, Margin Funds, and Clearing House Funds Clearing liquidity risk management requirements met through established stress testing practices
Market Risk	The risk resulting from adverse movements in market rates or prices such as foreign exchange rates, interest rates, or equity prices impacting a defaulted participant's and/or member's portfolio	<ul style="list-style-type: none"> Backtesting of margin and collateral haircut sufficiency Default contingent market risk managed through collateral management and margin collection
Model Risk	The risk of adverse consequences arising from actions and decisions taken on the basis of incorrect or miscalculated model outputs and reports and such consequences may result in financial loss, ill-advised business or strategic decisions, poor risk capital deployment or reputational damage	<ul style="list-style-type: none"> Establishment of Model Risk Governance Framework Internal model validation activities Implementation of Model risk register
Cyber & Technology Risk	The risk of operational disruption or impact, financial loss or reputational damage due to technology failures, operational inefficiencies in existing technologies and IT processes, or cyber incidents, cyber attacks and/or unauthorised access by malicious internal or external parties	<ul style="list-style-type: none"> Defence-in-depth cyber controls including segregation of critical systems Ongoing testing and evaluation of cyber risk controls Pre-launch risk advice on strategic projects Low latency, highly resilient IT service design Regular system performance monitoring, active capacity planning, maintenance and drills (including disaster recovery)
Operational Risk	The risk of financial loss, reputational damage or inability to provide services and products to customers resulting from inadequate or failed processes	<ul style="list-style-type: none"> Continuous development of an understanding of the evolving internal critical processes and controls and their impact on people, process and technology Organisational leadership structure and operating model changes Maintenance of a confident state of preparedness to respond to and recover from business disruptions through regular drills on crisis management of major incident scenarios
Third Party Risk	The risk that business operations or reputation of the Group is adversely impacted by third party actions or a failure by the third party in provisioning services to the Group in line with business agreements	<ul style="list-style-type: none"> Implementation of a new Group Third Party Risk Management Policy and framework along with tooling to enhance monitoring and control in alignment with international standards Quarterly monitoring programme

More information about the climate-related risks faced by the Group and the Group's approach to other CSR topics that are material or relevant to its business, including but not limited to information security and anti-corruption, is set out in the 2022 CSR Report.

CHOW WOO Mo Fong, Susan

Chairman of the Risk Committee

Hong Kong, 14 February 2023

Remuneration Committee Report

The Remuneration Committee

The Remuneration Committee (RC) is delegated with the authority by the Board to establish, review, and make recommendations to the Board on the Group's remuneration policy and practices. The RC ensures that all employees and Executive and Non-executive Directors are appropriately remunerated in accordance with the Group's strategy and performance against key objectives. Its terms of reference are available on the HKEX Group website [OS](#).

The RC comprises six INEDs whose names and biographies are set out in the Board and Committees section of this Annual Report. The RC held five meetings in 2022. Members' attendance records are disclosed in the Corporate Governance Report contained in this Annual Report.

Summary of Work in 2022/2023

Remuneration Policy	<ul style="list-style-type: none">Conducted a holistic review of compensation and performance management practices, resulting in the adaptation of a market-aligned total compensation framework which will be subject to continuous review and improvementConducted a thorough review and evaluation of the firm's methodology to determine incentive pools to ensure alignment with corporate strategy and performance outcomes
Remuneration of Non-executive Directors	<ul style="list-style-type: none">Reviewed the remuneration of Non-executive Directors of HKEX, the LME, LME Clear and OTC Clear
Remuneration of CEO and Senior Executives	<ul style="list-style-type: none">Determined the 2022 performance cash incentive and share award for HKEX CEO and selected senior executives, taking into account individual performance and contributionReviewed senior executive benchmark data and market trends ahead of making individual compensation decisions
Remuneration of Group Employees	<ul style="list-style-type: none">Recommended the 2022 performance cash incentive and share award poolsRecommended the 2023 salary adjustment budget for the Group's employees
Performance Management	<ul style="list-style-type: none">Reviewed and endorsed the 2022 corporate scorecard for the GroupAssessed performance against the 2022 corporate scorecard, and recommended compensation and incentive pool outcomes for the Group's employees
Governance	<ul style="list-style-type: none">Recommended revisions to the scheme rules of the Share Award Scheme, which were subsequently approved by the Board in June 2022Reviewed the RC's terms of referenceReviewed and approved the introduction of a remote working policy

Non-executive Directors' Remuneration

Objective

To remunerate Non-executive Directors at an appropriate level for their commitment to HKEX and to attract and retain high calibre and experienced individuals to oversee HKEX's business and development

Policy

- To conduct regular reviews with reference to companies with comparable business or scale and recommend remuneration adjustments, if appropriate
- To seek the Board's endorsement and Shareholders' approval of any recommended changes

Remuneration for 2022/2023

- Adjustments to Non-executive Directors' fees were last approved by Shareholders at the 2022 AGM.
- The review of Non-executive Directors' fees is conducted on an biennial basis, with the next review scheduled for 2024.

Non-executive Directors' Remuneration for 2023/2024

	\$
Board	
– Chairman	3,500,000
– Other Non-executive Director	920,000
Audit Committee, Remuneration Committee and Risk Committee	
– Chairman	300,000
– Other member	180,000
Board Executive Committee, Corporate Social Responsibility Committee, Investment Committee, Listing Operation Governance Committee, and Nomination and Governance Committee	
– Chairman	250,000
– Other member	170,000

Non-executive Directors are not entitled to participate in the Share Award Scheme.

Further details of the Directors' emoluments are set out in note 15 to the Consolidated Financial Statements.

Employees' Remuneration

Objective

To ensure that employees are remunerated equitably and competitively with consideration of the achievement of their individual performance goals, the key business objectives at corporate level, and the market conditions

Policy

- To recommend, based on up-to-date market information, the appropriate salary adjustments, if any, for the Board's approval
- To evaluate the corporate performance based on a set of pre-determined indicators and to recommend an appropriate total incentive pool for the year, if any, to the Board
- To consult with HKEX CEO about the performance of the members of the Senior Management and other senior executives, and determine and approve total compensation outcomes for this population to ensure that they are remunerated equitably and in accordance with the established guidelines
- To review and approve all remuneration proposals for the HKEX CEO, Senior Management, Management Committee members and other senior direct reports to the CEO, and in addition any remuneration proposals for current or prospective employees where proposed total compensation is above a pre-determined threshold
- To review and recommend the remuneration of HKEX CEO to the Board. As a good corporate governance practice, HKEX CEO is not involved in the Board's discussion and decision.

Review for 2022/2023

- Based on the RC’s recommendation, the Board approved, in February 2022, the implementation of a new market-aligned total compensation framework for Hong Kong-based HKEX employees following completion of a holistic review of HKEX’s compensation and performance practices.
- Based on the RC’s recommendation, the Board approved in October and November 2022:
 - (i) a base salary adjustment and promotion increase effective January 2023. The salary adjustment took into consideration the competitive positioning, the cost of living and the projected pay increase in the financial services industry;
 - (ii) a discretionary performance cash incentive for eligible employees in recognition of their contributions in 2022;
 - (iii) a discretionary award for the allocation of HKEX shares pursuant to the Share Award Scheme for 437 selected employees and for selected employees to be recruited in 2023; and
 - (iv) the compensation arrangement and the 2022 performance related incentive pay for HKEX CEO.
- The performance cash incentive and share award pools for the Group’s employees were determined based on the overall achievements with respect to the 2022 corporate scorecard. The 2022 corporate scorecard comprises the following four categories, all with equal weighting and each with a series of measures. Each individual measure comprises discrete and measurable outcomes which collectively uphold HKEX’s 2022 strategic and corporate priorities.

Category	Description
Financial Performance	Core top line and bottom line measures of HKEX’s financial strength, with a focus on sustainable growth and diversification of sources of revenue
Strategy and People	Measures which ensure HKEX’s business planning, ways of working, people and culture support the achievement of long-term strategic priorities and the sustainable development of the Company
Execution	Delivery-focused measures which ensure reliable market operations, and reinforce Hong Kong’s position as a leading IPO venue
Risk, Control and Public Interest	Measures which ensure HKEX upholds its responsibilities to Hong Kong’s investing public and our CSR commitments and to operate within our pre-determined risk appetite

- Employees undergo an annual performance appraisal process through which corporate and individual objectives are set, and performance against these objectives is monitored throughout the year. This culminates in an individual performance rating (on a five-point scale) which influences individual total compensation outcomes.
- Distribution to individual employees are guided by divisional and individual performances, where managers may make adjustments to account for other factors, including overall total compensation position (i.e., base salary plus the performance cash incentive and share award, if applicable), internal pay levels and external remuneration benchmarks.
- Under the HKEX Clawback Policy, incentive payments to the most senior level of executives of the HKEX Group, whether in form of cash or share-based awards, are subject to clawback under special circumstances according to the policy, including but not limited to where there has been a material misstatement or omission in the financial reports of the HKEX Group, or if the relevant senior executive has engaged in serious negligence, fraud, or misconduct. Any clawback action may be determined by the RC in respect of any short-term incentives paid and/or any share award granted to a senior executive within the period of three years immediately preceding the date on which the RC determines such action.

Further details of HKEX’s remuneration policy and structure are available on the HKEX Group website [CG](#).

As at 31 December 2022, the Group had 2,237 permanent employees and 143 temporary employees. More information about workforce diversity is set out in the Corporate Governance Report contained in this Annual Report and in the 2022 CSR Report.

A performance development process is in place to ensure that employees’ performance objectives are defined, their performance progress is tracked, and training and development opportunities are identified for them. Employee training details are set out in the 2022 CSR Report.

Emoluments for 2022

Executive Director

	2022					2021	2022	
	Salary \$	Performance ¹ cash incentive \$	Other ² benefits \$	Retirement ³ benefit costs \$	Director's fee \$	Total ⁴ \$	Total ⁴ \$	Share award benefits ^{1,5} \$
HKEX CEO								
Nicolas Aguzin	10,000,008	12,375,000	328,137	1,250,001	-	23,953,146	23,461,311	62,608,415

Senior Management

	2022					2021	2022
	Salary \$	Performance ¹ cash incentive \$	Other ² Benefits \$	Retirement ³ benefit costs \$	Total ⁴ \$	Total ⁴ \$	Share award benefits ^{1,5} \$
Bonnie Y Chan ⁶	4,320,000	4,290,000	63,568	432,000	9,105,568	10,317,503	4,511,799
Vanessa Lau	3,460,800	3,500,000	57,232	432,600	7,450,632	7,819,923	3,526,831
Richard Wise	3,584,400	3,120,000	101,882	358,440	7,164,722	13,002,351	4,241,538
Wilfred Yiu	4,000,008	3,825,000	148,325	500,001	8,473,334	9,162,325	4,767,094

- The 2022 performance cash incentive compensation and share awards to the Senior Management (including Executive Director) are subject to the Group's Clawback Policy.
- Other benefits include leave pay, insurance premium, club membership, sign-on bonus, and payment in lieu of pension contributions, as applicable.
- An employee who retires before normal retirement age is eligible for 18 per cent of the employer's contribution to the provident fund after completion of two years of service. The rate of vested benefit increases by 18 per cent annually thereafter and reaches 100 per cent after completion of seven years of service. An employee who retires at or after normal retirement age is eligible for the total balance of the employer's contribution.
- Excludes the amounts approved by the Board for the allocation of HKEX shares pursuant to the Share Award Scheme, details of which are set out in the Share Award Scheme section below
- These represent the amortised fair value of the Awarded Shares that was charged to the Consolidated Income Statement for the year ended 31 December 2022.
- Bonnie Y Chan joined HKEX in January 2020 as Head of Listing and was appointed as Co-Chief Operating Officer effective 1 February 2023. The emolument disclosures detailed above are in respect of her role as Head of Listing during 2022.
- Katherine Ng joined HKEX in July 2013 and succeeded Bonnie Y Chan as Head of Listing effective 1 February 2023. Ms Ng's emolument for 2022 and 2021 was \$5,167,523 and \$5,465,255 respectively (see note 4). Ms Ng's emolument for 2022 comprised salary of \$2,451,120, performance cash incentive of \$2,350,000, other benefits of \$121,291, retirement benefit costs of \$245,112 and share award benefits of \$1,949,166 (see notes 1 to 5).

Further details of the five top-paid employees are set out in note 16 to the Consolidated Financial Statements.

Share Award Scheme

HKEX has adopted the Share Award Scheme to attract and retain high calibre employees; to incentivise and recognise their contributions to the Group's continuous operations and further development; and to promote prudent risk behaviour among them as part of the Group's risk management mechanism.

The Scheme was initially adopted by the Board on 14 September 2005 (Adoption Date), with subsequent amendments thereafter. In February 2022, the RC performed a holistic review of the Scheme rules and its relevant documents to ensure that they reflect market best practices and support the compensation and incentive framework of the Group. In June 2022, the Board approved amendments to the Scheme rules in relation to, among others, the definition and conditions of good leavers, vesting of share awards held by retiring employees and the duration of the Scheme, aiming to improve the efficiency and effectiveness of the Scheme and support future talent attraction and retention. Under the amended Scheme rules, which took effect on 1 January 2023, the Scheme shall be valid until termination as determined by the Board, or otherwise as required under any applicable legal and/or regulatory requirements. The amended Scheme rules are available on the HKEX Group website [CG](#).

The Scheme allows HKEX shares to be awarded as Employee Share Awards for employees of the Group (including the Executive Director) selected by the Board. Unless otherwise determined by the Board, the RC or the HKEX CEO (as appropriate), the vesting period of the Awarded Shares is three years, and the Awarded Shares will be vested in two equal tranches from the second to the third year after the date of approval of the Awarded Sum by the Board.

Pursuant to the Scheme, the Scheme's trustee, based on the Board's recommendation, applies forfeited or unallocated HKEX shares held under the Scheme and HKEX shares that have been purchased from the market at the prevailing market price, to satisfy the Awarded Shares for allocation to the selected employees (including the Executive Director).

The maximum number of HKEX shares which may be awarded under the Scheme is 3 per cent (i.e., 31,871,575 shares) of HKEX shares in issue as at the Adoption Date ("Maximum Award Limit"). And the maximum number of shares which may be awarded to an employee selected under the Scheme is 1 per cent (i.e., 10,623,858 shares).

During 2022, a total of 952,872 HKEX shares, representing 0.08 per cent of HKEX's total number of issued shares as at 1 January 2022 (with no change in HKEX's issued shares during the year), were awarded or allocated to selected employees (including the Executive Director).

As part of the 2022 performance and compensation review, the Board approved allocation of HKEX shares in a combined value of \$338.6 million to be awarded to selected employees (including the Executive Director) as Employee Share Awards in recognition of their contributions in 2022 ("2022 Awarded Sum"). The Awarded Shares for the 2022 Awarded Sum had not been allocated to the selected employees (including the Executive Director) as of 31 December 2022.

Since the Adoption Date and up to the date of this report, a total of 15,422,412 shares had been awarded under the Scheme, representing about 1.5 per cent of the number of HKEX shares in issue on the Adoption Date. The total number of HKEX shares which is available for being further awarded under the Scheme (i.e., 16,449,163 shares) represents 1.3 per cent of HKEX issued shares as at 23 February 2023.

As at 31 December 2022, taking into account the shares acquired out of the dividends from the shares held under the trust, there were 2,406,183 shares held in trust under the Scheme (excluding shares vested but not yet transferred to awardees).

Further details of the Scheme are set out in note 43 to the Consolidated Financial Statements.

Details of the interests of HKEX CEO, the Senior Management, four top-paid employees (excluding HKEX CEO) and other grantees in the Awarded Shares are set out below.

	Date of award ²	Number of Awarded Shares	2022 ³ Reference awarded sum \$	Vesting ⁴ period	Number of shares ¹					Closing price of HKEX shares before the vesting date ⁵ \$	
					As at 1 Jan 2022	Shares acquired during the year out of the dividends	Vested during the year	Cancelled during the year	Lapsed during the year		As at 31 Dec 2022
HKEX Chief Executive Officer (Executive Director)											
Nicolas Aguzin	2 Jun 2021	211,756	-	24 May 2022 – 24 May 2023 ⁶	213,692	3,606	108,024	-	-	109,274	331.4
	9 Mar 2022 ⁷	84,603	-	7 Dec 2023 – 7 Dec 2024	-	1,922	-	-	-	86,525	-
	-	-	28,875,000	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-
Senior Management											
Bonnie Y Chan	13 May 2021	11,633	-	9 Dec 2022 – 9 Dec 2023	11,739	266	6,001	-	-	6,004	335.6
	9 Mar 2022 ⁷	12,086	-	7 Dec 2023 – 7 Dec 2024	-	274	-	-	-	12,360	-
	-	-	6,190,000	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-
Vanessa Lau	31 Dec 2019	8,535	-	12 Dec 2021 – 12 Dec 2022	4,451	101	4,552	-	-	-	345.8
	13 May 2021	7,983	-	9 Dec 2022 – 9 Dec 2023	8,055	182	4,118	-	-	4,119	335.6
	9 Mar 2022 ⁷	8,789	-	7 Dec 2023 – 7 Dec 2024	-	198	-	-	-	8,987	-
	-	-	4,039,200	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-
Katherine Ng	31 Dec 2019	5,143	-	12 Dec 2021 – 12 Dec 2022	2,682	60	2,742	-	-	-	345.8
	13 May 2021	4,105	-	9 Dec 2022 – 9 Dec 2023	4,142	93	2,116	-	-	2,119	335.6
	9 Mar 2022 ⁷	4,834	-	7 Dec 2023 – 7 Dec 2024	-	109	-	-	-	4,943	-
	-	-	3,750,000	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-
Richard Wise	4 Dec 2020	42,500	-	8 Feb 2021 – 8 Feb 2024 ⁸	29,440	334	14,720	-	-	15,054	445.6
	9 Mar 2022 ⁷	7,141	-	7 Dec 2023 – 7 Dec 2024	-	161	-	-	-	7,302	-
	-	-	4,795,600	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-
Wilfred Yiu	13 Jun 2019	9,603	-	8 Apr 2021 – 8 Apr 2022 ⁸	5,085	56	5,141	-	-	-	354.8
	31 Dec 2019	18,138	-	12 Dec 2021 – 12 Dec 2022	9,459	214	9,673	-	-	-	345.8
	13 May 2021	10,720	-	9 Dec 2022 – 9 Dec 2023	10,818	245	5,531	-	-	5,532	335.6
	9 Mar 2022 ⁷	9,888	-	7 Dec 2023 – 7 Dec 2024	-	224	-	-	-	10,112	-
	-	-	5,974,992	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-

	Date of award ²	Number of Awarded Shares	2022 ³ Reference awarded sum \$	Vesting ⁴ period	Number of shares ¹					Closing price ⁵ of HKEX shares before the vesting date \$	
					As at 1 Jan 2022	Shares acquired during the year out of the dividends	Vested during the year	Cancelled during the year	Lapsed during the year		As at 31 Dec 2022
Four Top-paid Employees (excluding HKEX CEO) during 2022⁹											
	31 Dec 2019	52,448	-	12 Dec 2021 – 12 Dec 2022	27,351	477	27,828	-	-	-	See note 10
	13 May 2021	42,749	-	9 Dec 2022 – 9 Dec 2023	43,138	769	30,983	-	-	12,924	See note 10
	30 Nov 2021	21,200	-	30 Nov 2023 – 30 Nov 2024 ⁸	21,200	481	-	-	-	21,681	-
	9 Mar 2022 ⁷	42,473	-	7 Dec 2023 – 7 Dec 2024	-	770	16,662 ¹¹	-	-	26,581	See note 10
	1 Dec 2022 ⁷	23,600	-	25 Nov 2024 – 25 Nov 2025	-	-	-	-	-	23,600	-
	28 Dec 2022 ⁷	2,042	-	25 Nov 2024 – 25 Nov 2025	-	-	-	-	-	2,042	-
	-	-	13,300,632	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-
Other Selected Employees (excluding HKEX CEO and Senior Management)											
	During 2019	1,292,803	-	See note 4	497,575	15,152	475,159	37,568	-	-	See note 12
	During 2020	9,700	-	See note 4	10,006	139	5,043	-	-	5,102	See note 12
	During 2021	727,347	-	See note 4	699,067	9,576	328,605	51,104	-	328,934	See note 12
	During 2022 ⁷	825,531	-	See notes 4 and 7	-	16,410	33,709	46,694	-	761,538	See note 12
	-	-	284,929,759	8 Dec 2024 – 8 Dec 2025	-	-	-	-	-	-	-

1 Includes shares acquired out of the dividends from the Awarded Shares according to the Scheme

2 Refers to the date on which the trustee allocated the Awarded Shares to the selected employees based on the awarded sum determined by the Board

3 Refers to the amount approved by the Board in 2022 for the allocation of the HKEX shares to be awarded to the selected employees. The allocation of Awarded Shares had not been made by the trustee as of 31 December 2022.

4 Save for disclosure in notes 6, 7, 8 and 10 below, the Awarded Shares and the related income are vested in two equal tranches in the second and third year after the grant.

5 Refers to the closing price of HKEX shares immediately before the dates on which the relevant Awarded Shares were vested in 2022

6 The award was granted under the Scheme pursuant to the employment contract entered into by Mr Aguzin with the Company. The Awarded Shares and the related income (if any) are vested in two equal tranches on the first and second anniversary of the date of grant.

7 Award of HKEX Shares during 2022:

Date of award	Vesting period	Number of shares awarded	Closing price of HKEX shares immediately before date of award \$	Fair value per Awarded Shares ^(a) \$
25 Feb 2022 ^(b)	17 May 2022 – 17 May 2024	1,600	394.6	388.9
25 Feb 2022 ^(b)	10 Jan 2023 – 10 Jan 2025	9,300	394.6	388.9
3 Mar 2022 ^(b)	28 Feb 2025	42,600	363.8	366.8
9 Mar 2022 ^(c)	7 Dec 2023 – 7 Dec 2024	827,630	340.4	456.1
29 Apr 2022 ^(b)	1 Sep 2022 – 1 Sep 2024	8,100	325.8	338.6
9 Jun 2022 ^(b)	13 Jan 2023 – 31 Dec 2025	21,800	361.2	357.9
13 Jun 2022 ^(b)	7 Feb 2023 – 11 Feb 2025	5,400	355.2	343.0
15 Jul 2022 ^(b)	15 Mar 2023 – 15 Mar 2025	8,400	362.0	357.3
18 Aug 2022 ^(b)	4 Sep 2022 – 4 Sep 2023	500	341.2	334.7
31 Aug 2022 ^(b)	1 Apr 2023 – 1 Apr 2025	600	316.4	319.4
1 Dec 2022 ^(d)	25 Nov 2024 – 25 Nov 2025	23,600	306.0	321.8
2 Dec 2022 ^(b)	1 Sep 2023 – 1 Sep 2025	1,300	317.2	316.3
28 Dec 2022 ^(d)	25 Nov 2024 – 25 Nov 2025	2,042	340.0	341.1

- (a) The fair value of the Awarded Shares is determined in accordance with HKFRS 2 by reference to the cost of purchase of the Awarded Shares, or the fair value at grant date, taking into account all non-vesting conditions associated with the grant on grant date. No adjustment is required for expected dividends since the employees are entitled to receive dividends paid during the vesting period. Details of the accounting policy adopted are set out in note 43 to the Consolidated Financial Statements.
During 2022, 84,603 Awarded Shares, with a total fair value of \$38,584,890, were granted to HKEX CEO, and a total of 68,115 Awarded Shares, with a total fair value of \$27,661,586, were granted to the other four top-paid employees (excluding HKEX CEO).
- (b) These awards were granted to new employees under their respective hiring agreements with HKEX, as compensation for their loss of unvested long-term incentives earned through their service with their previous employers, and are subject to special vesting schedule(s).
- (c) Represents the Awarded Shares granted to selected employees (including a total of 127,076 Awarded Shares granted to the HKEX CEO and the other four top-paid employees of HKEX during 2022) as Employee Share Awards in recognition of their contributions in 2021, which were allocated to the selected employees on 9 March 2022
- (d) These awards were granted to employees under their respective leaving agreements with HKEX, and are subject to special vesting schedule(s).
- 8 These awards were granted as part of the hiring agreements of the relevant employees with special vesting schedule(s).
- 9 One of the five top-paid employees during 2022 was the HKEX CEO, whose interest in Awarded Shares and shares acquired out of the dividends from the Awarded Shares is disclosed under the “HKEX Chief Executive Officer (Executive Director)” section of the above table.
- 10 In 2022, a total of 75,473 shares were vested to the four top-paid employees (excluding HKEX CEO) during the year. The weighted average closing price of these shares before the relevant vesting dates in 2022 is \$339.2. Among these four-top paid employees is an outgoing senior executive who retired during 2022, and the relevant shares were vested to him upon his retirement.
- 11 These shares were vested to one of the four top-paid employees (excluding the HKEX CEO) during 2022 upon his retirement during the year.
- 12 In 2022, a total of 842,516 shares were vested to other selected employees (excluding the HKEX CEO and Senior Management). The weighted average closing price of these shares before the relevant vesting dates in 2022 is \$342.7.

Rafael GIL-TIENDA

Chairman of the Remuneration Committee

Hong Kong, 15 February 2023

Corporate Social Responsibility Committee Report

The CSR Committee

The Corporate Social Responsibility (CSR) Committee is delegated with the authority by the Board to provide direction and oversee the development and implementation of the CSR initiatives of the Group in relation to corporate sustainability, environmental protection, philanthropy and community engagement. Its terms of reference are available on the HKEX Group website [OS](#).

The CSR Committee comprises four INEDs and the HKEX Chief Executive Officer, whose names and biographies are set out in the Board and Committees section of this Annual Report. The CSR Committee held four meetings in 2022. Members' attendance records are disclosed in the Corporate Governance Report contained in this Annual Report.

Summary of Work in 2022/2023

- Reviewed and endorsed the following items:
 - the annual CSR Report; and
 - the philanthropy work plan and budget for 2023
- Reviewed and received the quarterly reports on the Group's CSR activities and charitable donations, covering:
 - donations via HKEX Foundation in relation to the HKEX Charity Partnership Programme, HKEX Impact Funding Scheme, HKEX University Scholarship Programme and the new Research Funding Scheme;
 - donations to The Community Chest of Hong Kong; and
 - other donations to the Group's charity partners
- Reviewed the HKEX Shareholders Communication Policy
- Reviewed and discussed HKEX's CSR initiatives, alongside global trends in CSR development
- Reviewed the progress of HKEX's green initiatives against relevant targets, including HKEX's climate strategy and action plan, paper reduction, supply chain sustainability and other green initiatives
- Reviewed and was satisfied with the adequacy of the Group's resources, staff qualifications and experience, training programmes and budget relating to its ESG performance and reporting
- Reviewed the CSR Committee's terms of reference

CSR Policies, Performance and Reporting

HKEX is committed to connecting, promoting and progressing its markets and the communities they support; and, to continually seeking to reinforce its position as an active and responsible corporate leader. HKEX's CSR policies and details of HKEX's CSR management approach are available on the HKEX Group website [CSR](#).

Reflecting the nature of its business, the Group is not aware of any existing environmental laws or regulations that would have a material impact on the Group. The Group, however, continues to adopt enhanced measures to reduce energy and other resource utilisation, minimise waste and increase

recycling, encouraging its employees to adopt environmentally responsible behaviours whilst also promoting environmental protection in its supply chain and marketplace. To reinforce our commitment to tackling climate change, the Group continued to work closely with government, policy makers, regulators, international peers, businesses and other stakeholders to facilitate the transition to a low-carbon and climate resilient economy. During the year, HKEX conducted again its "HKEX Goes Green" campaign to raise environmental awareness across its workplace and the broader community, and further reduced paper consumption through the introduction of new printing solutions, an electronic signature platform and digital transformation. In 2022, the Group recorded a 60 per cent decrease in the volume of paper consumed compared with 2021.

As a responsible corporate citizen, the Group actively contributes to the community by making charitable donations to, and collaborating with, a wide range of charity partners. During the year, HKEX hosted its inaugural HKEX Impact Summit, facilitating a valuable dialogue on corporate philanthropy and fostering stronger bonds between businesses and society. In 2022, HKEX, through HKEX Foundation, reinforced our commitment to the community through supporting local charities and social enterprises, through the HKEX Charity Partnership Programme and the HKEX Impact Funding Scheme. Complementing the existing HKEX University Scholarship Programme, the Foundation also introduced a new Research Funding Scheme, supporting innovative university-backed research projects that help to provide valuable insight into financial markets, ESG and sustainability. In the UK, the LME announced a new partnership with Inspire, a charity and an education business partnership which seeks to empower young people to reach their full potential and realise their ambitions. During 2022, the Group donated a total of \$142 million to various projects and initiatives in its communities.

During 2022, the CSR Committee received and reviewed the CSR quarterly reports, which summarised the CSR initiatives undertaken by the Group throughout the year. Details of the Group's CSR performance in 2022 are disclosed in the 2022 CSR Report.

Communication with Shareholders

Effective engagement with Shareholders is a vital component of HKEX as a listed company. Throughout the year, HKEX has continued to deliver timely, balanced, clear, and transparent communications with its Shareholders and other investors. Details of the Group's shareholder and investor engagement and communication activities are set out in the Corporate Governance Report of this Annual Report and further details can be found on the investor relations section of the HKEX Group website [IR](#).

An HKEX Shareholders Communication Policy, which is available on the HKEX Group website [CG](#), sets out the Group's objective for ensuring Shareholders, and in appropriate circumstances, the wider investment community, are provided with regular, equal and timely access to balanced and understandable information about the Group: this ensures that Shareholders can exercise their rights in an informed manner and allows them, and the investment community, to engage actively with the Group.

The CSR Committee reviewed the Group's shareholder and investor engagement and communication activities conducted in 2022 and was satisfied with the implementation and effectiveness of the Shareholders Communication Policy.

Relationships with other Major Stakeholders

The Group also actively engages with all its other major stakeholders, including its employees, suppliers and partners through a variety of different channels with the aim of developing mutually beneficial relationships and promoting knowledge sharing, transparency and sustainability.

Employees are remunerated equitably and competitively. Learning and development opportunities are provided to equip staff members so that they can perform the best and achieve personal and corporate goals. Through the AI-empowered learning platform iLearn, and ongoing talent development programmes designed for employees at different levels, in 2022 the Group delivered over 40,000 hours of training to its employees across different divisions and departments. In addition to ongoing programmes supporting employee safety, health and well-being, the Group also launched a new Group-wide Global Wellness Challenge to promote the awareness of physical and mental wellbeing among our employees in Hong Kong, the Mainland and London.

HKEX is committed to ensuring strong ethical supply chain management and seeks to use suppliers that reflect its values and commitment to being a good corporate citizen. In 2022, the Group introduced a new Third Party Risk Management Policy and Framework to help identify and manage the risks in relation to ESG, cyber security and data, among other risks, involved in engaging a third party. Throughout the year, the Group was not aware that any of its key suppliers had reported any significant actual, or potential, negative impact on their own business ethics, environmental protection, human rights or labour practices, nor any of them had any non-compliance incident in respect of these areas.

Laura M CHA

Chairman of the CSR Committee

Hong Kong, 21 February 2023

Directors' Report

The Directors are pleased to present this Annual Report together with the audited consolidated financial statements for the year ended 31 December 2022.

Principal Activities

HKEX is a recognised exchange controller under the SFO. HKEX operates the only recognised stock and futures markets in Hong Kong through its wholly-owned subsidiaries, SEHK and HKFE, and is the frontline regulator of listed issuers in Hong Kong. In collaboration with the Shanghai and Shenzhen stock exchanges, HKEX operates Stock Connect, which gives investors in Hong Kong and the Mainland access to each other's securities markets. HKEX also provides market data through HKEX Information Services Limited.

HKEX operates HKSCC, HKCC, SEOCH, and OTC Clear, the only recognised clearing houses in Hong Kong. HKSCC, HKCC, and SEOCH provide integrated clearing and settlement services, while OTC Clear provides clearing and settlement services for over-the-counter interest rate and foreign exchange derivatives transactions. HKSCC also provides depository and nominee services.

HKEX owns the LME and LME Clear in the UK. The LME provides facilities for the trading of futures and options contracts on base and other metals. It is a recognised investment exchange under the Financial Services and Markets Act 2000 (FSMA). LME Clear provides clearing services for the exchange contracts

of the LME. It is a recognised clearing house under the FSMA and an authorised CCP under the UK European Market Infrastructure Regulation (EMIR).

HKEX owns 90.01 per cent of QME, which is a commodity trading platform in the Mainland.

A list of HKEX's principal subsidiaries as at 31 December 2022 and their particulars are set out in note 28 to the Consolidated Financial Statements. More information about the Group's activities is available in the About HKEX section of the HKEX Group website.

Business Review

The Group's revenue is primarily derived from business activities conducted in Hong Kong and the UK. An analysis of the Group's performance for 2022 by operating segment is set out in note 4 to the Consolidated Financial Statements.

A fair review of the Group's business, including the important events affecting the Group that have occurred since the end of 2022 and the likely future developments in the Company's business, is set out in the Chief Executive Officer's Review, Business Review, and Financial Review sections of this Annual Report. Principal risks and uncertainties facing the Group were reviewed by the Board as delineated in the Risk Committee Report. Details about the Group's financial risk management are set out in note 54 to the Consolidated Financial Statements. Details about HKEX's climate-related risks and opportunities are disclosed in the 2022 CSR Report.



The following table outlines the relevant laws and regulations that have a significant impact on the Group's business, and the compliance measures adopted and implemented by the Group during 2022.

Primary Legislation/Regulations ¹	Key Scope	Compliance Measures
Exchange and clearing business in Hong Kong		
SFO	<p>HKEX is a recognised exchange controller and has duties under section 63(1) to ensure that the statutory duties placed on the recognised exchange companies (under section 21) and recognised clearing houses (under section 38) under its control are complied with.</p> <p>SEHK and HKFE are recognised exchange companies; and HKSCC, HKCC, SEOCH, and OTC Clear are recognised clearing houses (RCHs).</p>	<p>A corporate governance structure ² is in place to enable HKEX to balance its public functions and its commercial profit making objectives.</p> <p>Group Compliance is responsible for ensuring compliance with rules and regulations in line with the corporate governance structure.</p> <p>Rule amendments by SEHK, HKFE, and each of the RCHs are approved by the SFC under section 24 (for recognised exchange companies) and section 41 (for RCHs).</p> <p>Fees imposed by HKEX (in its capacity as a recognised exchange controller), SEHK, HKFE, and each of the RCHs are approved by the SFC under section 76.</p>
PFMI	As RCHs, HKSCC, HKCC, SEOCH, and OTC Clear are required to observe the applicable PFMI on an ongoing basis pursuant to the guidelines issued by the SFC.	The approach of each of the RCHs to observing each applicable PFMI is summarised in its disclosure document which is available on the HKEX Market website.
Exchange and clearing business in the UK		
Part XVIII of the FSMA and Part I and Part II of the FSMA (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001	The LME is a recognised investment exchange under Part XVIII of the FSMA and is required to ensure that its rules, procedures, and practices are adequate for the protection of investors and for the maintenance of an orderly market.	The LME follows the rules and guidance on recognition and notification requirements as set out in the FCA's Handbook, as well as having implemented the applicable MiFID II requirements.
Markets in Financial Instruments Directive 2014/65/EU, Markets in Financial Instruments Regulation 600/2014 and associated legislation (together, MiFID II)	<p>Until 31 December 2020, the LME was an EU regulated market required to comply with applicable EU MiFID II requirements. Since 1 January 2021, the LME has become a third country venue for EU MiFID II purposes, but continues to comply with MiFID II requirements as they form part of UK law.</p> <p>The right of the LME to provide access to its systems to entities in European Economic Area (EEA) jurisdictions now depends on the domestic rules applicable in individual Member States and the LME has obtained either applicable licences or dispensations in all relevant Member States. Further detail regarding the position in respect of the EEA jurisdictions that are relevant to the LME's current membership is set out in the LME's Notice of 4 January 2021 to its Members in relation to certain updates to the LME jurisdictions document.</p>	<p>As required by the FCA and on behalf of the LME board, the Audit and Risk Committee of the LME has to satisfy itself formally on an annual basis that the LME continues to meet certain recognition requirements.</p> <p>In performing that annual review, the LME conducts a detailed analysis, covering the arrangements and controls in place for each requirement. This is supported by a risk-based compliance monitoring programme which seeks to focus its resources on the areas of greatest inherent risk.</p>

Primary Legislation/Regulations ¹	Key Scope	Compliance Measures
Part 4A of FSMA & Benchmarks Regulation (known as BMR)	<p>Since 3 December 2019, the LME has been authorised by the FCA to administer a number of prices that are categorised as benchmarks under the BMR, and is required to comply with applicable requirements under the BMR and certain FCA rules in connection with the administration of these benchmarks.</p> <p>The LME has also relied on the transitional provisions under the EU BMR in order to provide its benchmarks for use by “supervised entities” within the EU. This transitional provision is due to expire at the end of 2023, but the European Commission is proposing to extend it to the end of 2025.</p> <p>As “supervised entities” under the BMR, the LME and LME Clear, when using a “benchmark” (within the meaning of the BMR), are required to maintain fallback plans that identify steps to be taken where the relevant benchmark ceases to be provided or is no longer reflective of the market which it is intended to measure.</p>	<p>To ensure compliance with the applicable BMR and FCA requirements, the LME has implemented a robust compliance framework around its benchmark determination processes, including a governance framework and a compliance monitoring programme, and has employed a dedicated member of personnel to oversee its benchmark activity.</p> <p>Mandatory BMR documentation is publicly available on the LME website.</p> <p>The LME’s benchmarks are subject to an annual external audit against BMR requirements.</p> <p>In relation to their obligations as supervised entities, the LME and LME Clear have a framework in place to assess their use of prices and, where required, to implement and maintain fallback plans.</p>
Senior Managers Regime (SMR)	<p>As a benchmark administrator, the LME became subject to the SMR with effect from 7 December 2020. The SMR aims to ensure individual accountability at senior management level for regulated activities. Broadly, this requires the LME to ensure that its senior managers are registered as “senior management function” holders in relation to specified functions; certain prescribed responsibilities are allocated accordingly; and the code of conduct requirements are applicable to relevant staff.</p>	<p>Compliance with the relevant requirements continues to be monitored via the compliance monitoring programme. The LME’s benchmarks are subject to an annual external audit against BMR requirements.</p>
Regulation on OTC Derivatives, Central Counterparties and Trade Repositories (known as EMIR) and MiFID II	<p>As of 1 January 2021, the EMIR and MiFID II requirements form part of UK domestic law. Under the UK EMIR, LME Clear is authorised as a CCP and LME Clear is required to comply with the applicable EMIR requirements and MiFID II requirements accordingly.</p> <p>LME Clear was, until 31 December 2020, an authorised CCP under the EU EMIR. Since 1 January 2021, LME Clear has become a recognised third country CCP in relation to its arrangements with EEA Clearing Members.</p>	<p>To ensure compliance with EMIR, LME Clear has implemented robust governance arrangements and a comprehensive risk management framework.</p> <p>LME Clear’s Rules and Procedures have been developed to reflect the legal framework which applies to LME Clear, including primarily the requirements of EMIR and MiFID II.</p> <p>All documentation required in relation to LME Clear’s compliance with EMIR and MiFID II is publicly disclosed on the LME website.</p>

Primary Legislation/Regulations ¹	Key Scope	Compliance Measures
FSMA	LME Clear is a recognised clearing house under Part XVIII of the FSMA and is required to ensure that its rules, procedures and practices are adequate for the protection of investors and for the maintenance of an orderly operation.	LME Clear provides a high degree of legal certainty for each material aspect of its activities by setting out the rights and obligations of LME Clear and those of its Members in its Rules and Procedures (the Rules). The Rules support and allow LME Clear to conduct such material aspects appropriately and effectively, ensure Members understand the full extent of their obligations when using LMEmercury and clarify the protection provided to investors. Any changes to the Rules are notified to the Bank of England which, when appropriate, will approve the changes. The Rules are publicly disclosed on the LME website.
Financial Markets and Insolvency (Settlement Finality) Regulations 1999 (SFR)	LME Clear's secure payment system is a designated system and is required to meet the SFR requirements. In addition, as of 1 January 2021, LME Clear was approved as a third-country system under French law for the purposes of the Settlement Finality Directive.	LME Clear has adopted, as part of its Rules and Procedures, a Settlement Finality Rule (Rule 11) and related Settlement Finality Procedures which define the system and the point of irrevocability and finality of instructions as well as the participants in the system. The procedures explaining how the system meets the SFR requirements are available on the LME website.
PFMI	LME Clear, as financial market infrastructure, is required to observe the applicable PFMI on an ongoing basis.	LME Clear's approach to observing each applicable PFMI is summarised in its disclosure document, which is available on the LME website. LME Clear reviews its compliance against the applicable PFMI on an annual basis, and performs a full and comprehensive self-assessment on a biennial basis against the PFMI. These assessments are shared with LME Clear's primary regulator, the Bank of England.

Spot commodity trading platform in the PRC

The Interim Measures of Shenzhen Municipality for the Supervision and Administration of Trading Venues (Shenzhen Interim Measures)	QME is a spot commodity trading platform in Shenzhen and is required to comply with the applicable rules under the Shenzhen Interim Measures on an ongoing basis.	QME has established relevant operating rules for trading, settlement, delivery and warehouse management, which are published on the QME website. QME conducts legal and regulatory analysis, covering the key regulations and arrangements in place, and performs annual self-assessment of which the results will be reported to its regulator, Qianhai Authority. During the second half of 2022, Group Compliance conducted an internal review of QME's compliance and risk governance framework.
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Primary Legislation/Regulations ¹	Key Scope	Compliance Measures
Operations in Hong Kong, the UK and the PRC		
Prevention of Bribery Ordinance (Chapter 201 of the Laws of Hong Kong)	HKEX, SEHK, HKFE, HKSCC, HKCC, and SEOCH are public bodies under the Prevention of Bribery Ordinance and are subject to prohibitions on bribery (under sections 4 to 8) and corrupt transactions with agents (under section 9).	HKEX has adopted the Group Anti-Bribery and Anti-Corruption Policy (“Policy”) to ensure that employees within the Group comply with the HK Prevention of Bribery Ordinance, the UK Bribery Act 2010, the PRC Criminal Law, and the PRC Anti-Unfair Competition Law, where applicable. The Policy is reviewed annually to ensure that it remains appropriate. During 2021, enhancements were made to the Policy to further strengthen the HKEX anti-bribery framework.
Bribery Act 2010	The Group’s subsidiaries in the UK, persons who are British citizens or who are ordinarily resident in the UK, and any persons who by an act or omission in the UK formed part of the relevant bribery offence are subject to the Bribery Act provisions (under sections 1, 2 and 6). The LME, LME Clear, and any other Group companies carrying on business in the UK are “relevant commercial organisations” for the purposes of section 7 of the Bribery Act 2010.	
PRC Criminal Law and PRC Anti-Unfair Competition Law	QME and other PRC subsidiaries of HKEX are subject to prohibitions on bribery under the PRC Criminal Law and the PRC Anti-Unfair Competition Law.	
Privacy and Data Protection Laws	The Group is subject to certain privacy and data protection laws, including but not limited to UK and EU General Data Protection Regulation; HK Personal Data (Privacy) Ordinance; Singapore Personal Data Protection Act; and PRC Personal Information Protection Law.	HKEX has established a Group Data Protection Office to take charge of compliance with the relevant privacy and data protection laws and regulations. A PRC-based representative was appointed in May 2022. HKEX has adopted an internal Privacy Impact Assessment (“PIA”) Policy Guide to ensure that PIAs are conducted when necessary. A new Privacy Notice was published on the HKEX Websites in January 2023. Additional and separate Privacy Notices were prepared for Direct Marketing and Events and the Hong Kong Investor Identification Regime (HKIDR). An updated Group Privacy Policy has been adopted to ensure the Group’s approach to privacy risk management reflects the current regulatory position.

1 On the corporate level, all of the Group companies comply with the laws of the place in which the companies are incorporated, the Main Board Listing Rules, and the SFO, where they are applicable.

2 HKEX’s corporate governance structure is available on the HKEX Group website, and its principal corporate governance practices are set out in the Corporate Governance Report, the Nomination and Governance Committee Report, the Audit Committee Report, the Risk Committee Report, the Remuneration Committee Report, and the CSR Committee Report.

Disclosures related to the Group’s environmental policies and performance, and relationships with major stakeholders are included in the CSR Committee Report.

Major Customers and Suppliers

During the year ended 31 December 2022, the combined value of the Group's contracts with its five largest suppliers, which were not of a capital nature, was less than 30 per cent of the total value of supplies purchased. The Group's five largest customers combined contributed less than 30 per cent of its total revenue and other income during the year ended 31 December 2022.

Results and Appropriations

The Group's results for the year ended 31 December 2022 are set out in the Consolidated Income Statement.

The Board has declared a second interim dividend of \$3.69 per share for 2022 (2021 second interim dividend: \$4.18 per share), which will be payable in cash, to Shareholders whose names appear on HKEX's Register of Members on 13 March 2023.

The 2022 first interim dividend of \$3.45 per share (2021 first interim dividend: \$4.69 per share) was declared by the Board and paid to the Shareholders in cash on 14 September 2022 in the total sum of \$4.4 billion (2021: \$5.9 billion). This included the dividends of \$8 million (2021: \$12 million) paid to shares held in trust under the Share Award Scheme.

Including the first interim dividend, the total dividends for 2022 amount to \$7.14 per share (2021: \$8.87 per share), which represents a payout ratio of 90 per cent (2021: 90 per cent) of the profit attributable to Shareholders, excluding the financial results of HKEX Foundation, for the year ended 31 December 2022. Dividends for shares held in trust under the Share Award Scheme amount to \$17 million (2021: \$22 million). More information about HKEX's dividend policy and the 2022 second interim dividend is set out in note 19 to the Consolidated Financial Statements and the Shareholder Information section of this Annual Report.

Donations

The Group's charitable donations during 2022 amounted to \$142 million (2021: \$106 million). The Group has never made any political donations.

More information about the Group's charitable donations is set out in the CSR Committee Report.

Share Capital

Details of the movements in share capital of the Company during 2022 are set out in note 42 to the Consolidated Financial Statements. No HKEX shares were issued during 2022.

Equity-linked Agreements

No equity-linked agreements were entered into by the Company during 2022 or subsisted at the end of 2022.

Reserves

As at 31 December 2022, HKEX's distributable reserves, calculated under Part 6 of the Companies Ordinance (Chapter 622 of the Laws of Hong Kong), amounted to \$8.4 billion (31 December 2021: \$9.9 billion).

Details of the movements in the reserves of the Group and HKEX during 2022 are set out in the Consolidated Statement of Changes in Equity and notes 43 to 46 and note 55(a) to the Consolidated Financial Statements.

Purchase, Sale or Redemption of HKEX's Listed Securities

During 2022, neither the Company nor any of its subsidiaries purchased, sold, or redeemed any HKEX shares, except that the trustee of the Share Award Scheme, pursuant to the terms of the rules and trust deed of the Share Award Scheme, purchased on the Stock Exchange a total of 1,040,416 HKEX shares at a total consideration of \$350 million.

Directors

The following is the list of Directors during 2022 and up to the date of this report (unless otherwise stated). Brief biographies of the Directors as at the date of this report are set out in the Board of Directors and Senior Management section of this Annual Report. Their interests in HKEX shares are set out in the Corporate Governance Report. Information about Directors' appointments, retirements, and remuneration is set out in the Nomination and Governance Committee Report and the Remuneration Committee Report.

INEDs

Laura May-Lung CHA (Chairman) (Re-appointed on 27 April 2022)
Nicholas Charles ALLEN
Apurv BAGRI (Re-elected on 27 April 2022)
CHEAH Cheng Hye
CHEUNG Ming Ming, Anna
CHOW WOO Mo Fong, Susan (Re-appointed on 27 April 2022)
Rafael GIL-TIENDA
HUNG Pi Cheng, Benjamin (Re-appointed on 27 April 2022)
LEUNG Nisa Bernice Wing-Yu
LEUNG Pak Hon, Hugo
YIU Kin Wah, Stephen
ZHANG Yichen

Executive Director

Alejandro Nicolas AGUZIN (Chief Executive)

The following is the list of directors of HKEX's subsidiaries during 2022 and up to the date of this report (unless otherwise stated).

Alejandro Nicolas AGUZIN ^{1,2}	Hugh Edward GRAHAM ³	SO Ying Ying, Glenda
Nicholas Charles ALLEN ¹	Gay HUEY EVANS	Marco Andrea STRIMER
BA Shusong	JIM Wai Kee ³	Antony John STUART
BAO Haijie	KWOK Hom Siu	TAI Chi Kin ³
John Leo BUCKLEY ³	LAM Lai Pau, Jeffrey	THANG Kai Chi, John
Julie Ann CARRUTHERS	LAU Bik Yun, Vanessa ²	Pierre VAREILLE
Laura May-Lung CHA ¹	LAU Hay Tsing	Herta VON STIEGEL
Matthew James CHAMBERLAIN	LAU LAW Siu Hung, Monique	Andrew David WALTON
CHEN Cong	LAW Ka Ho, Vincent	WANG Guiju
CHEUNG Kar Wah Allista	LEUNG Chung Kwong, Richard	WANG Haihang
CHEUNG Kin Chung	LEUNG Pik Shan, Maria	WANG Xiaokun
CHEUNG Ming Ming, Anna ¹	LEUNG Sing Man, Sandra	John Mackay McCulloch WILLIAMSON
CHIU Kin Nang	LI Jieyi	Richard Alan WISE ²
CHOW WOO Mo Fong, Susan ¹	MAO Zhirong	XU Minbo ³
Victoria Robyn COWLEY	Julien Claude Jean-baptiste MARTIN ³	XU Yeren ³
James CRESSY	Roger William MCAVOY	YIU Ka Yan, Wilfred ²
DONG Feng	NG Chin Hang, Edmund	YIU Kin Wah, Stephen ¹
DUAN Fei ³	Keith Samuel NOYES	Craig YOUNG
Adrian John Winston FARNHAM ³	POON Tim Fung	ZHANG Huizi
Martin Ernst FRAENKEL	Christopher Kevin RIDEOUT	ZHU Jing ³
Rafael GIL-TIENDA ¹	Adam Barclay SINGER	ZHU Xiaojun ³

¹ Member of the Board as at the date of this report

² Member of Senior Management as at the date of this report

³ No longer a director of any subsidiaries of HKEX as at the date of this report

Directors' Interests in Transactions, Arrangements and Contracts

Details of the continuing connected transactions and related party transactions are set out in the Corporate Governance Report and note 51 to the Consolidated Financial Statements.

Notwithstanding the above, no transaction, arrangement, or contract that is significant in relation to the Group's business to which the Company or any of its subsidiaries was a party and in which a person who at any time in 2022 was a Director or his or her connected entity had, directly or indirectly, a material interest was entered into in 2022 or subsisted at any time during 2022.

Directors' Rights to Acquire Shares or Debentures

Pursuant to the Share Award Scheme, HKEX shares are awarded to the Company's Executive Director. During 2022, Nicolas Aguzin was the Company's sole Executive Director. Details of the interests of Mr Aguzin in the Awarded Shares are set out in the Remuneration Committee Report and note 43 to the Consolidated Financial Statements.

Save for the above, neither HKEX nor any of its subsidiary undertakings was a party to any arrangements to enable Directors to acquire benefits by means of the acquisition of shares in, or debentures of, HKEX or any other body corporate at any time during 2022 or at the end of 2022.

Management Contracts

No contract, other than employment contracts, concerning the management and administration of the whole or any substantial part of the Company's business was entered into or existed during 2022.

Permitted Indemnity Provision

Pursuant to HKEX's Articles, subject to the provisions of the statutes, every Director shall be entitled to be indemnified by the Company against all costs, charges, losses, expenses, and liabilities incurred by him or her in the execution and discharge of his or her duties or in relation thereto. The Directors and Officers Liability Insurance (D&O Insurance) undertaken by the Company provides such indemnities to all the directors of the Company and its subsidiaries. The relevant provisions in HKEX's Articles and the D&O Insurance were in force during the financial year ended 31 December 2022 and as at the date of this report.

Auditor

The financial statements for the year ended 31 December 2022 have been audited by PricewaterhouseCoopers, which retires and, being eligible, offers itself for re-appointment at the 2023 AGM. A resolution to re-appoint PricewaterhouseCoopers as the Group's external auditor and to authorise the Directors to fix its remuneration will be proposed at the 2023 AGM.

All references above to other sections, reports or notes in this Annual Report form part of this report.

Approved by the Board on 23 February 2023

Laura M CHA

Chairman

Auditor's Report

Independent Auditor's Report to the Members of Hong Kong Exchanges and Clearing Limited

(incorporated in Hong Kong with limited liability)

Opinion

What we have audited

The consolidated financial statements of Hong Kong Exchanges and Clearing Limited (the "Company") and its subsidiaries (together, the "Group"), which are set out on pages 131 to 220, comprise:

- the consolidated statement of financial position as at 31 December 2022;
- the consolidated income statement for the year then ended;
- the consolidated statement of comprehensive income for the year then ended;
- the consolidated statement of changes in equity for the year then ended;
- the consolidated statement of cash flows for the year then ended; and
- the notes to the consolidated financial statements, which include significant accounting policies and other explanatory information.

Our opinion

In our opinion, the consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at 31 December 2022, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with Hong Kong Financial Reporting Standards ("HKFRSs") issued by the Hong Kong Institute of Certified Public Accountants ("HKICPA") and have been properly prepared in compliance with the Hong Kong Companies Ordinance.

Basis for Opinion

We conducted our audit in accordance with Hong Kong Standards on Auditing ("HKSA") issued by the HKICPA. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated Financial Statements section of our report.

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

Independence

We are independent of the Group in accordance with the HKICPA's Code of Ethics for Professional Accountants ("the Code"), and we have fulfilled our other ethical responsibilities in accordance with the Code.

Key Audit Matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters identified in our audit are summarised as follows:

- Goodwill impairment assessment
- IT systems and controls over revenue and financial accounting and reporting processes

Key Audit Matters (Continued)

Goodwill impairment assessment

Nature of the Key Audit Matter

As at 31 December 2022, the Group has goodwill of HK\$13,367 million arising from various acquisitions. Goodwill of HK\$13,256 million arising from the acquisition of LME Holdings Limited and its subsidiaries (collectively the “LME Group”) in 2012 was allocated to Cash Generating Units (“CGUs”) for the “Commodities” segment (HK\$10,379 million), and the “Post Trade” segment (HK\$2,877 million) respectively.

Goodwill with an indefinite useful life is subject to impairment assessments annually and when there is an indication for impairment.

Management performed an impairment assessment over the goodwill allocated to the Commodities and Post Trade segments by estimating the recoverable amount (being the higher of the fair value less costs of disposal and value-in-use) for the relevant CGU.

The value-in-use calculations for the relevant CGU are determined based on discounted cash flow models. These models take into consideration the future cash flows of the respective CGUs for the next five years, which include the projected revenue and operating expenditure. Other significant assumptions include the growth rates to project the cash flows beyond the 5-year period (“terminal growth rates”) and the discount rates applied to the future cash flows to convert to their present values (“discount rates”). Significant judgments are required to estimate the value-in-use for the respective CGUs.

Based on the impairment assessment, management concluded that there is no impairment in respect of the goodwill allocated to the Commodities and Post Trade segments.

The significant assumptions are disclosed in note 30 to the consolidated financial statements.

We focus on goodwill arising from the acquisition of the LME Group due to the size of the balance and significant judgements applied by management in the goodwill impairment assessment.

How our audit addressed the Key Audit Matter

Our procedures to evaluate the Group’s goodwill impairment assessments included the following:

1. Understanding of the Group’s internal controls and management’s process for goodwill impairment assessment and assessing the inherent risk of material misstatement by considering the degree of estimation uncertainty and other inherent risk factors such as complexity, subjectivity, changes and susceptibility to management bias;
2. Assessing the appropriateness of the discounted cash flow models used;
3. Assessing the reasonableness of projected revenue and operating expenditure assumptions used to produce the future cash flows of the respective CGUs for the next five years by comparing the prior year projections against actual results, the correlations against trading and clearing volume and understanding the reasons for any deviations;
4. Assessing the reasonableness of significant assumptions including the terminal growth rates and the discount rates used in estimating value-in-use based on our independent market data and industry forecast with the involvement of our valuation expert; and
5. Performing independent sensitivity analysis on the significant assumptions, being the terminal growth rates and the discount rates to which the models are most sensitive, and evaluating the impact that reasonable possible changes could have on management’s goodwill impairment assessment.

Based on available evidence, we found the significant assumptions management adopted in relation to the goodwill impairment assessment to be supportable and reasonable.

Key Audit Matters (Continued)

IT systems and controls over revenue and financial accounting and reporting processes

Nature of the Key Audit Matter

The Group operates securities and derivatives trading, clearing and settlement systems, which process significant volumes of transactions and market data. Trading, clearing and settlement fee revenue generated from these transactions comprise the majority of the Group's revenue of HK\$16,934 million. The completeness and accuracy of the fee revenue recognised relies heavily on the Information Technology ("IT") systems processing those transactions and data.

Key systems and related controls are put in place by management over the data capture and processing of reporting fee revenue. These include (1) the core trading, clearing and settlement systems that capture and process transactions generating fee revenue, (2) the interfaces between the core systems and the financial accounting and reporting system and (3) the financial accounting and reporting system that generates financial information utilised in the preparation of the Group's financial statements ("key systems").

We focused on these key systems as the fee revenue reported in the Group's financial statements are highly dependent on the proper functioning of these key systems with minimal manual intervention and are reliant on the design and operating effectiveness of automated application controls and underlying IT general controls put in place by management. Such automated application controls include system logical access controls, system automated calculations and validations, system generated information and system interfaces. IT general controls include controls over access to programs and data, program changes, computer operations and program development.

How our audit addressed the Key Audit Matter

As part of our audit, we obtained an end-to-end understanding of the systems and processes that capture and process transactions generating fee revenue and their reporting in the Group's financial statements. Based on this understanding, we identified and evaluated the design of the automated application controls and underlying IT general controls governing the associated IT systems and processes that we planned to rely on in our audit.

Our audit procedures over the key systems and related controls included the following:

1. Assessing the control environment (including the IT governance framework, automated application controls and IT general controls over the key systems) that support processing of transactions which generate fee revenue to evaluate whether the system functionality, data and controls could be relied on throughout the period. Our testing of IT general controls covered the design and operating effectiveness for access to programs and data, program changes, computer operations and program development; and
2. Testing relevant automated application controls over the capture, processing and reporting of transactions. Our procedures included the testing of system logical access controls, system automated calculations and validations, system generated information and system interfaces.

Based on our audit procedures there were no matters identified that would impact our reliance on the relevant controls put in place by management on the key systems for the purpose of our audit.

Other Information

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

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Directors for the Consolidated Financial Statements

The directors of the Company are responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with HKFRSs issued by the HKICPA and the Hong Kong Companies Ordinance, and for such internal control as the directors determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

The Audit Committee of the Group assists the directors in discharging their responsibilities for overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. We report our opinion solely to you, as a body, in accordance with Section 405 of the Hong Kong Companies Ordinance and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the contents of this report. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with HKSAAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements (Continued)

As part of an audit in accordance with HKSAAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Audit Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Audit Committee with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with the Audit Committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Peter Po-ting Li.

PricewaterhouseCoopers

Certified Public Accountants

Hong Kong, 23 February 2023

Consolidated Income Statement

For the year ended 31 December 2022

	Note	2022 \$m	2021 \$m
Trading fees and trading tariffs	5(a)	6,837	7,931
Clearing and settlement fees		4,335	5,214
Stock Exchange listing fees	5(b)	1,915	2,185
Depository, custody and nominee services fees		1,260	1,543
Market data fees		1,081	1,034
Other revenue	5(c)	1,506	1,564
Revenue	5	16,934	19,471
Investment income		3,627	1,351
Interest rebates to Participants		(2,271)	(47)
Net investment income	6	1,356	1,304
HKEX Foundation donation income	7	130	139
Sundry income	8	36	36
Revenue and other income		18,456	20,950
Less: Transaction-related expenses	9	(176)	(152)
Revenue and other income less transaction-related expenses		18,280	20,798
Operating expenses			
Staff costs and related expenses	10	(3,324)	(2,948)
Information technology and computer maintenance expenses	11	(732)	(715)
Premises expenses		(120)	(117)
Product marketing and promotion expenses		(129)	(116)
Professional fees		(279)	(157)
HKEX Foundation charitable donations		(136)	(105)
Other operating expenses	12	(375)	(371)
		(5,095)	(4,529)
EBITDA		13,185	16,269
Depreciation and amortisation		(1,459)	(1,354)
Operating profit	13	11,726	14,915
Finance costs	14	(138)	(154)
Share of profits less losses of joint ventures		71	80
Profit before taxation		11,659	14,841
Taxation	17	(1,564)	(2,343)
Profit for the year		10,095	12,498
Profit/(loss) attributable to:			
Shareholders of HKEX	46	10,078	12,535
Non-controlling interests	28(a)(i)	17	(37)
Profit for the year		10,095	12,498
Basic earnings per share	18(a)	\$7.96	\$9.91
Diluted earnings per share	18(b)	\$7.95	\$9.89

The notes on pages 136 to 220 are an integral part of these consolidated financial statements.

Details of dividends are set out in note 19 to the consolidated financial statements.

Consolidated Statement of Comprehensive Income

For the year ended 31 December 2022

	Note	2022 \$m	2021 \$m
Profit for the year		10,095	12,498
Other comprehensive income			
Items that may be reclassified subsequently to profit or loss:			
Currency translation differences of foreign subsidiaries	2(e)(iii)	(46)	104
Cash flow hedges, net of tax	44(a)	12	(2)
Changes in fair value of financial assets measured at fair value through other comprehensive income, net of tax	44(b)	(293)	(8)
Other comprehensive (loss)/income		(327)	94
Total comprehensive income		9,768	12,592
Total comprehensive income/(loss) attributable to:			
Shareholders of HKEX		9,759	12,626
Non-controlling interests		9	(34)
Total comprehensive income		9,768	12,592

The notes on pages 136 to 220 are an integral part of these consolidated financial statements.

Consolidated Statement of Financial Position

At 31 December 2022

	Note	At 31 Dec 2022			At 31 Dec 2021		
		Current \$m	Non-current \$m	Total \$m	Current \$m	Non-current \$m	Total \$m
Assets							
Cash and cash equivalents	20,21	184,965	-	184,965	181,361	-	181,361
Financial assets measured at fair value through profit or loss	20,22	6,177	787	6,964	8,491	946	9,437
Financial assets measured at fair value through other comprehensive income	20,23	14,962	-	14,962	9,755	-	9,755
Financial assets measured at amortised cost	20,24	70,285	209	70,494	51,302	526	51,828
Derivative financial instruments	26	80,718	-	80,718	91,424	-	91,424
Accounts receivable, prepayments and deposits	27	25,354	21	25,375	32,717	21	32,738
Tax recoverable		17	-	17	19	-	19
Interests in joint ventures	29	-	291	291	-	244	244
Goodwill and other intangible assets	30	-	18,968	18,968	-	18,972	18,972
Fixed assets	31	-	1,640	1,640	-	1,605	1,605
Right-of-use assets	32	-	1,604	1,604	-	1,896	1,896
Deferred tax assets	41(c)	-	53	53	-	25	25
Total assets		382,478	23,573	406,051	375,069	24,235	399,304
Liabilities and equity							
Liabilities							
Derivative financial instruments	26	80,705	-	80,705	91,424	-	91,424
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	20,33	227,902	-	227,902	203,536	-	203,536
Accounts payable, accruals and other liabilities	34	19,054	-	19,054	28,335	-	28,335
Deferred revenue	35	1,076	333	1,409	1,100	354	1,454
Taxation payable		2,172	-	2,172	1,153	-	1,153
Other financial liabilities	36	40	-	40	513	-	513
Participants' contributions to Clearing House Funds	20,37	21,205	-	21,205	19,182	-	19,182
Lease liabilities	38	297	1,448	1,745	299	1,760	2,059
Borrowings	39	430	61	491	340	86	426
Provisions	40	67	90	157	82	98	180
Deferred tax liabilities	41(c)	-	1,072	1,072	-	1,132	1,132
Total liabilities		352,948	3,004	355,952	345,964	3,430	349,394
Equity							
Share capital	42			31,918			31,896
Shares held for Share Award Scheme	42			(918)			(901)
Employee share-based compensation reserve	43			346			306
Hedging and revaluation reserves	44			(266)			15
Exchange reserve	2(e)(iii)			(155)			(117)
Designated reserves	45			686			623
Reserve relating to written put options to non-controlling interests				(430)			(369)
Retained earnings	46			18,547			18,173
Equity attributable to shareholders of HKEX				49,728			49,626
Non-controlling interests	28(a)(i)			371			284
Total equity				50,099			49,910
Total liabilities and equity				406,051			399,304
Net current assets				29,530			29,105

The notes on pages 136 to 220 are an integral part of these consolidated financial statements.

Approved by the Board of Directors on 23 February 2023

Laura M CHA

Director

Alejandro Nicolas AGUZIN

Director

Consolidated Statement of Changes in Equity

For the year ended 31 December 2022

	Attributable to shareholders of HKEX									
	Share capital and shares held for Share Award Scheme (note 42) \$m	Employee share-based compensation reserve (note 43) \$m	Hedging and revaluation reserves (note 44) \$m	Exchange reserve \$m	Designated reserves (note 45) \$m	Reserve relating to written put options to non-controlling interests \$m	Retained earnings (note 46) \$m	Total \$m	Non-controlling interests \$m	Total equity \$m
At 1 Jan 2021	31,406	232	25	(218)	628	(369)	17,214	48,918	318	49,236
Profit for the year	-	-	-	-	-	-	12,535	12,535	(37)	12,498
Other comprehensive income	-	-	(10)	101	-	-	-	91	3	94
Total comprehensive income	-	-	(10)	101	-	-	12,535	12,626	(34)	12,592
Total transactions with shareholders of HKEX, recognised directly in equity:										
- 2020 second interim dividend at \$4.46 per share	-	-	-	-	-	-	(5,646)	(5,646)	-	(5,646)
- 2021 first interim dividend at \$4.69 per share	-	-	-	-	-	-	(5,934)	(5,934)	-	(5,934)
- Unclaimed HKEX dividends forfeited (note 34(a))	-	-	-	-	-	-	12	12	-	12
- Shares purchased for Share Award Scheme	(681)	-	-	-	-	-	-	(681)	-	(681)
- Vesting of shares of Share Award Scheme	270	(250)	-	-	-	-	(20)	-	-	-
- Employee share-based compensation benefits	-	324	-	-	-	-	-	324	-	324
- UK tax relating to Share Award Scheme	-	-	-	-	-	-	7	7	-	7
- Transfer of reserves	-	-	-	-	(5)	-	5	-	-	-
	(411)	74	-	-	(5)	-	(11,576)	(11,918)	-	(11,918)
At 31 Dec 2021	30,995	306	15	(117)	623	(369)	18,173	49,626	284	49,910
At 1 Jan 2022	30,995	306	15	(117)	623	(369)	18,173	49,626	284	49,910
Profit for the year	-	-	-	-	-	-	10,078	10,078	17	10,095
Other comprehensive income	-	-	(281)	(38)	-	-	-	(319)	(8)	(327)
Total comprehensive income	-	-	(281)	(38)	-	-	10,078	9,759	9	9,768
Total transactions with shareholders of HKEX, recognised directly in equity:										
- 2021 second interim dividend at \$4.18 per share	-	-	-	-	-	-	(5,290)	(5,290)	-	(5,290)
- 2022 first interim dividend at \$3.45 per share	-	-	-	-	-	-	(4,366)	(4,366)	-	(4,366)
- Unclaimed HKEX dividends forfeited (note 34(a))	-	-	-	-	-	-	26	26	-	26
- Shares purchased for Share Award Scheme	(350)	-	-	-	-	-	-	(350)	-	(350)
- Vesting of shares of Share Award Scheme	355	(340)	-	-	-	-	(15)	-	-	-
- Employee share-based compensation benefits	-	380	-	-	-	-	-	380	-	380
- UK tax relating to Share Award Scheme	-	-	-	-	-	-	(3)	(3)	-	(3)
- Transfer of reserves	-	-	-	-	63	-	(63)	-	-	-
- Issuance of written put options to non-controlling interests (note 39)	-	-	-	-	-	(61)	-	(61)	-	(61)
- Change in ownership interest in a subsidiary (note 50)	-	-	-	-	-	-	7	7	78	85
	5	40	-	-	63	(61)	(9,704)	(9,657)	78	(9,579)
At 31 Dec 2022	31,000	346	(266)	(155)	686	(430)	18,547	49,728	371	50,099

The notes on pages 136 to 220 are an integral part of these consolidated financial statements.

Consolidated Statement of Cash Flows

For the year ended 31 December 2022

	Note	2022 \$m	2021 \$m
Cash flows from principal operating activities			
Net cash inflow from principal operating activities	47(a)	13,062	13,897
Cash flows from other operating activities			
Net redemption from/(payments to) external fund managers for sales/ (purchases) of financial assets measured at fair value through profit or loss		1,894	(1,557)
Net cash inflow from operating activities		14,956	12,340
Cash flows from investing activities			
Payments for purchases of fixed assets and intangible assets		(1,284)	(1,070)
Net (increase)/decrease in financial assets of Corporate Funds:			
(Increase)/decrease in time deposits with original maturities more than three months		(451)	3,276
Proceeds received upon maturity of financial assets measured at amortised cost (excluding time deposits)		316	810
Payments for purchases of financial assets measured at amortised cost (excluding time deposits)		(512)	(429)
Payments for financial assets measured at fair value through profit or loss		-	(349)
Interest received from financial assets measured at fair value through other comprehensive income		207	38
Dividend received from a joint venture		24	-
Net cash (outflow)/inflow from investing activities		(1,700)	2,276
Cash flows from financing activities			
Purchases of shares for Share Award Scheme		(350)	(681)
Payments of other finance costs		(66)	(72)
Dividends paid to shareholders of HKEX		(9,665)	(11,527)
Lease payments	47(b), 47(c)		
– Capital elements		(309)	(310)
– Interest elements		(68)	(79)
Capital injection by non-controlling interests to a subsidiary		85	-
Net cash outflow from financing activities		(10,373)	(12,669)
Net increase in cash and cash equivalents			
Cash and cash equivalents at 1 Jan		12,398	10,442
Exchange differences on cash and cash equivalents		(23)	9
Cash and cash equivalents at 31 Dec		15,258	12,398
Analysis of cash and cash equivalents			
Cash on hand and balances and deposits with banks and short-term investments of Corporate Funds	21	15,952	12,900
Less: Cash reserved for supporting Skin-in-the-Game and default fund credits of clearing houses	21(b)	(694)	(502)
		15,258	12,398

The notes on pages 136 to 220 are an integral part of these consolidated financial statements.

(a) “Cash flows from principal operating activities” is a non-Hong Kong Financial Reporting Standard (non-HKFRS) measure used by management for monitoring cash flows of the Group (defined in note 1) and represents the cash flows generated from the trading and clearing operations of the four exchanges and five clearing houses and ancillary services of the Group. This non-HKFRS measure may not be comparable to similar measures presented by other companies. Cash flows from principal operating activities and cash flows from other operating activities together represent cash flows from operating activities as defined by Hong Kong Accounting Standard (HKAS) 7: Statement of Cash Flows.

Notes to the Consolidated Financial Statements

1. General Information

Hong Kong Exchanges and Clearing Limited (HKEX or the Company) and its subsidiaries (collectively, the Group) own and operate the only stock exchange and futures exchange in Hong Kong and their related clearing houses, a clearing house for clearing over-the-counter derivatives contracts in Hong Kong, an exchange and a clearing house for the trading and clearing of base and ferrous metals futures and options contracts operating in the United Kingdom (UK), and a commodity trading platform in the Mainland.

HKEX is a limited company incorporated and domiciled in Hong Kong. The address of its registered office is 8th Floor, Two Exchange Square, 8 Connaught Place, Central, Hong Kong.

These consolidated financial statements were approved for issue by the Board of Directors (Board) on 23 February 2023.

2. Principal Accounting Policies

Apart from the accounting policies presented within the corresponding notes to the consolidated financial statements, other principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

(a) Statement of compliance

These consolidated financial statements have been prepared in accordance with Hong Kong Financial Reporting Standards (HKFRSs) issued by the Hong Kong Institute of Certified Public Accountants (HKICPA), and accounting principles generally accepted in Hong Kong. These consolidated financial statements also comply with the applicable disclosure requirements of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (Main Board Listing Rules) and the applicable requirements of the Hong Kong Companies Ordinance (Chapter 622).

(b) Basis of preparation

These consolidated financial statements have been prepared under the historical cost convention, as modified by the revaluation of certain financial assets and financial liabilities measured at fair value.

The preparation of consolidated financial statements requires the use of certain critical accounting estimates, and requires management to exercise its judgement when applying the Group's accounting policies. Areas involving significant estimates and judgement are disclosed in note 3.

2. Principal Accounting Policies (continued)

(b) Basis of preparation (continued)

Adoption of new/revised HKFRSs

In 2022, the Group has adopted the following amendments to HKFRSs which are pertinent to the Group's operations:

Amendments to HKAS 16	Property, Plant and Equipment: Proceeds before Intended Use ²
Amendments to HKAS 37	Provisions, Contingent Liabilities and Contingent Assets: Onerous Contracts – Cost of Fulfilling a Contract ²
Amendments to HKFRS 3	Business Combinations: Reference to the Conceptual Framework ²
Amendments to HKFRS 16	Leases: COVID-19-Related Rent Concessions beyond 30 June 2021 ¹
Annual Improvements to HKFRSs 2018 – 2020:	
Amendments to HKFRS 9	Financial Instruments: Fees in the “10 per cent” Test for Derecognition of Financial Liabilities ²
Amendments to Illustrative Examples accompanying HKFRS 16	Leases: Lease Incentives ²

¹ Effective for accounting periods beginning on or after 1 April 2021

² Effective for accounting periods beginning on or after 1 January 2022

The adoption of these amendments did not have any financial impact on the Group.

New/revised HKFRSs issued before 31 December 2022 but not yet effective and not early adopted

The Group has not applied the following amendments to HKFRSs which were issued before 31 December 2022 and are pertinent to its operations but not yet effective:

Amendments to HKAS 1	Presentation of Financial Statements: Classification of Liabilities as Current or Non-current ²
Amendments to HKAS 1	Presentation of Financial Statements: Non-current Liabilities with Covenants ²
Amendments to HKAS 1	Presentation of Financial Statements: Disclosure of Accounting Policies ¹
Amendments to HKAS 8	Accounting Policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates ¹
Amendments to HKAS 12	Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction ¹

¹ Effective for accounting periods beginning on or after 1 January 2023

² Effective for accounting periods beginning on or after 1 January 2024

The adoption of the amendments to HKFRSs would not have any financial impact on the Group.

There are no other new/revised HKFRSs not yet effective that are expected to have any financial impact on the Group.

2. Principal Accounting Policies (continued)

(c) Basis of consolidation

Subsidiaries are entities (including structured entities) over which the Group has control. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases. All material intra-group transactions and balances have been eliminated on consolidation.

Accounting policies of subsidiaries have been aligned on consolidation to ensure consistency with the policies adopted by the Group.

(d) Impairment of non-financial assets

Assets with an indefinite useful life, which include interests in joint ventures, goodwill and tradenames, are not subject to amortisation but are tested at least annually for impairment. Assets subject to amortisation are reviewed for impairment whenever there is any indication that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount (i.e., the higher of an asset's fair value less costs to sell and value-in-use). Such impairment losses are recognised in the consolidated income statement. An impairment loss other than goodwill is reversed if the circumstances and events leading to the impairment cease to exist.

(e) Foreign currency translation

(i) Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the functional currency). The consolidated financial statements are presented in Hong Kong Dollar (HKD), which is the Company's functional and presentation currency.

(ii) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the consolidated income statement. They are deferred in hedging reserve under equity if they relate to qualifying cash flow hedges (note 44(a)).

Translation differences on non-monetary financial assets that are classified as financial assets measured at fair value through profit or loss are reported as part of the fair value gain or loss.

(iii) Group companies

The results and financial position of each of the Group's entities that have a non-HKD functional currency are translated into HKD as follows:

- Assets and liabilities (including goodwill and fair value adjustments arising on the acquisition of foreign subsidiaries) for each statement of financial position presented are translated at the closing rate at the end of the reporting period;
- Income and expenses for each income statement are translated at the exchange rates approximating the foreign exchange rates ruling at the dates of the transactions; and
- All resulting currency translation differences are recognised in other comprehensive income in the exchange reserve under equity.

3. Critical Accounting Estimates and Assumptions

The Group makes estimates and assumptions concerning the future when the consolidated financial statements are prepared. The resulting accounting estimates may differ from the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below:

(a) Goodwill and tradenames

The Group tests annually whether goodwill and tradenames have suffered any impairment in accordance with the accounting policy stated in note 30.

The recoverable amounts of relevant cash generating units (CGUs) and relevant group of CGUs have been determined based on value-in-use calculations, which are disclosed in note 30. These calculations require the use of estimates and significant judgement by management, including the future cash flows expected to arise from the CGUs, discount rates for calculating the present value and growth rates used to extrapolate cash flow projections beyond the financial forecasts approved by management.

Changes in facts and circumstances may result in revisions to estimates of recoverable amounts and to the conclusion as to whether an indication of impairment exists, which could affect the consolidated income statement in future years.

(b) Valuation of investments

The Group has a significant amount of investments that are not classified as Level 1 investments under HKFRS 13: Fair Value Measurement. Except for investments in minority stakes in unlisted companies (note 54(d)(i)), the valuations have been determined based on quotes from market makers, alternative pricing sources supported by observable inputs, latest transaction prices or redemption prices provided by fund administrators of investment funds.

At 31 December 2022, the financial assets that were not classified as Level 1 investments (excluding derivative financial instruments) under HKFRS 13 amounted to \$9,219 million (31 December 2021: \$9,762 million) which mainly comprised \$5,648 million (31 December 2021: \$7,063 million) of investments under investment funds.

As the valuation of investments reflects movements in their estimated fair values, fair value gains or losses may fluctuate or reverse until the investments are sold, mature or are realised upon redemption. The potential impact of the fair value change of such investments on the Group's consolidated income statement is disclosed in note 54(a)(iv).

(c) Income taxes

The Group is subject to income taxes in the countries in which the Group operates. Judgement is required in determining the provision for income taxes and deferred taxes. There are transactions and calculations for which the ultimate tax determination is uncertain. The Group recognises liabilities for potential tax exposures based on its estimates of whether additional taxes will be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences would impact the income tax and deferred tax provisions in the year in which such determination is made.

If the actual taxation charge differs by 5 per cent from management's estimates, the Group's profit will be affected by \$78 million (2021: \$117 million).

4. Operating Segments

Accounting Policy

Operating segments are reported in a manner consistent with the internal management reports that are used to make strategic decisions provided to the chief operating decision-maker. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, is the Chief Executive Officer of HKEX. Information relating to segment assets and liabilities is not disclosed as such information is not regularly reported to the chief operating decision-maker.

The accounting policies of the reportable segments are the same as the Group's accounting policies. Taxation charge/credit is not allocated to reportable segments.

The Group has five reportable segments ("Corporate Items" is not a reportable segment). The segments are managed separately as each segment offers different products and services and requires different information technology systems and marketing strategies.

The operations in each of the Group's reportable segments are as follows:

The **Cash** segment covers all equity products traded on the Cash Market platforms of The Stock Exchange of Hong Kong Limited (Stock Exchange), the Shanghai Stock Exchange and the Shenzhen Stock Exchange through Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect (Stock Connect), sales of market data relating to these products and other related activities. The major sources of revenue of the segment are trading fees, trading tariffs, listing fees of equity products and market data fees.

The **Equity and Financial Derivatives** segment refers to derivatives products traded on the Stock Exchange and Hong Kong Futures Exchange Limited (Futures Exchange) and other related activities. These include the provision and maintenance of trading platforms for a range of equity and financial derivatives products, such as stock and equity index futures and options, derivative warrants (DWs), callable bull/bear contracts (CBBCs) and warrants, and sales of related market data. The major sources of revenue are trading fees, trading tariffs, listing fees of derivatives products and market data fees.

The **Commodities** segment refers to the operations of The London Metal Exchange (LME), which operates an exchange in the UK for the trading of base, ferrous and precious metals futures and options contracts, and the operations of Qianhai Mercantile Exchange Co., Ltd. (QME), the commodity trading platform in the Mainland. It also covers the commodities contracts traded on the Futures Exchange. The major sources of revenue of the segment are trading fees of commodity products, commodity market data fees and fees from ancillary operations.

The **Post Trade** segment refers to the operations of the five clearing houses, which are responsible for clearing, settlement and custodian activities of the exchanges of the Group and Northbound trades under Stock Connect, and clearing and settlement of over-the-counter derivatives contracts. Its principal sources of revenue are derived from providing clearing, settlement, depository, custody and nominee services and net investment income earned on the Margin Funds and Clearing House Funds.

The **Technology** segment refers to all services in connection with providing users with access to the platform and infrastructure of the Group, and services provided by BayConnect Technology Company Limited (BayConnect). Its major sources of revenue are network, terminal user, data line and software sub-license fees and hosting services fees.

4. Operating Segments (continued)

Central income (including net investment income of Corporate Funds and HKEX Foundation donation income) and central costs (including costs of central support functions that provide services to all operating segments, HKEX Foundation charitable donations and other costs not directly related to any operating segment) are included as “Corporate Items”.

The chief operating decision-maker assesses the performance of the operating segments principally based on their EBITDA (defined below).

EBITDA is defined as earnings before interest expenses and other finance costs, taxation, depreciation and amortisation. It excludes the Group’s share of results of the joint ventures and other non-recurring costs. EBITDA is a non-HKFRS measure used by management for monitoring business performance. It may not be comparable to similar measures presented by other companies.

An analysis by operating segment of the Group’s EBITDA, profit before taxation and other selected financial information (including analysis of revenue by timing of revenue recognition) for the year, is set out as follows:

	2022						Group \$m
	Cash \$m	Equity and Financial Derivatives \$m	Commodities \$m	Post Trade \$m	Technology \$m	Corporate Items \$m	
Timing of revenue recognition:							
Point in time	3,385	2,056	1,059	5,604	88	2	12,194
Over time	1,670	1,120	279	613	1,051	7	4,740
Revenue	5,055	3,176	1,338	6,217	1,139	9	16,934
Net investment income/(loss)	-	-	-	1,404	-	(48)	1,356
HKEX Foundation donation income	-	-	-	-	-	130	130
Sundry income	-	-	6	21	6	3	36
Revenue and other income	5,055	3,176	1,344	7,642	1,145	94	18,456
Less: Transaction-related expenses	-	(165)	-	(11)	-	-	(176)
Revenue and other income less transaction-related expenses	5,055	3,011	1,344	7,631	1,145	94	18,280
Operating expenses	(732)	(695)	(751)	(938)	(322)	(1,657)	(5,095)
Reportable segment EBITDA	4,323	2,316	593	6,693	823	(1,563)	13,185
Depreciation and amortisation	(202)	(159)	(317)	(363)	(92)	(326)	(1,459)
Finance costs	(11)	(9)	(6)	(55)	(1)	(56)	(138)
Share of profits less losses of joint ventures	71	-	-	-	-	-	71
Reportable segment profit before taxation	4,181	2,148	270	6,275	730	(1,945)	11,659
Other segment information:							
Interest income	-	-	-	3,675	-	476	4,151
Interest rebates to Participants	-	-	-	(2,271)	-	-	(2,271)
Other material non-cash item:							
Employee share-based compensation expenses	(68)	(53)	(35)	(52)	(16)	(156)	(380)

4. Operating Segments (continued)

	2021						Group \$m
	Cash \$m	Equity and Financial Derivatives \$m	Commodities \$m	Post Trade \$m	Technology \$m	Corporate Items \$m	
Timing of revenue recognition:							
Point in time	4,494	2,030	1,176	6,656	86	3	14,445
Over time	1,636	1,405	288	731	960	6	5,026
Revenue	6,130	3,435	1,464	7,387	1,046	9	19,471
Net investment income	-	-	-	596	-	708	1,304
HKEX Foundation donation income	-	-	-	-	-	139	139
Sundry income	1	1	14	12	4	4	36
Revenue and other income	6,131	3,436	1,478	7,995	1,050	860	20,950
Less: Transaction-related expenses	-	(126)	-	(26)	-	-	(152)
Revenue and other income less transaction-related expenses	6,131	3,310	1,478	7,969	1,050	860	20,798
Operating expenses	(614)	(665)	(695)	(844)	(305)	(1,406)	(4,529)
Reportable segment EBITDA	5,517	2,645	783	7,125	745	(546)	16,269
Depreciation and amortisation	(169)	(142)	(346)	(358)	(72)	(267)	(1,354)
Finance costs	(12)	(12)	(8)	(66)	(2)	(54)	(154)
Share of profits less losses of joint ventures	80	-	-	-	-	-	80
Reportable segment profit before taxation	5,416	2,491	429	6,701	671	(867)	14,841
Other segment information:							
Interest income	-	-	-	639	-	174	813
Interest rebates to Participants	-	-	-	(47)	-	-	(47)
Other material non-cash item:							
Employee share-based compensation expenses	(50)	(41)	(36)	(41)	(6)	(150)	(324)

(a) Geographical information

The Group's revenue is derived from its operations in Hong Kong, the UK and Mainland China. Such information and the Group's non-current assets (excluding financial assets and deferred tax assets) by geographical location are detailed below:

	Revenue		Non-current assets	
	2022 \$m	2021 \$m	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Hong Kong (place of domicile)	14,941	17,220	5,069	5,307
United Kingdom	1,892	2,179	17,215	17,137
Mainland China	101	72	240	294
	16,934	19,471	22,524	22,738

(b) Information about major customers

In 2022 and 2021, the revenue from the Group's largest customer amounted to less than 10 per cent of the Group's total revenue.

5. Revenue

Accounting Policy

Revenue excludes value added tax or other sales tax, and is recognised in the consolidated income statement on the following basis:

Trading fees and trading tariffs are recognised on a trade date basis.

Stock Exchange listing fees mainly comprise annual listing fees and initial listing fees. Annual listing fees are recognised on a straight-line basis over the period covered. Initial listing fees are recognised over time when the services are transferred to the listed companies or issuers of warrants, CBBCs and other securities.

Clearing and settlement fees arising from trades between Participants transacted on the Stock Exchange are recognised on the day following the trade day upon acceptance of the trades. Fees for clearing and settlement of trades transacted on the Shanghai Stock Exchange and Shenzhen Stock Exchange through Stock Connect (A-shares) are recognised on the trade day upon acceptance of the trades. Fees for clearing and settlement of trades in respect of base, ferrous and precious metals futures and options contracts transacted on the LME are recognised on the trade match day. Fees for all other settlement transactions are recognised upon completion of the settlement.

Custody fees for securities held in the Central Clearing and Settlement System (CCASS) depository are calculated and accrued on a monthly basis. Portfolio fees for A-shares held or recorded in the CCASS depository and for Hong Kong securities held by China Depository and Clearing Corporation Limited (ChinaClear) are calculated and accrued on a daily basis.

Income on registration and transfer fees for nominee services are calculated and accrued on the book close dates of the relevant stocks during the financial year.

Market data fees and other fees are recognised when the related services are rendered.

(a) Trading Fees and Trading Tariffs

	2022 \$m	2021 \$m
Equity securities traded on the Stock Exchange and through Stock Connect	3,363	4,468
DWs, CBBCs and warrants traded on the Stock Exchange	629	782
Futures and options contracts traded on the Stock Exchange and the Futures Exchange	1,874	1,613
Base, ferrous and precious metals futures and options contracts traded on the LME and QME	971	1,068
	6,837	7,931

5. Revenue (continued)

(b) Stock Exchange Listing Fees

	2022				2021			
	Equity		CBBCs, DWs & others	Total	Equity		CBBCs, DWs & others	Total
	Main Board	GEM			Main Board	GEM		
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	
Annual listing fees	705	47	3	755	718	50	3	771
Initial and subsequent issue listing fees	210	9	936	1,155	168	11	1,229	1,408
Other listing fees	4	1	-	5	5	1	-	6
	919	57	939	1,915	891	62	1,232	2,185

(c) Other Revenue

	2022 \$m	2021 \$m
Network, terminal user, data line and software sub-license fees	751	720
Hosting services fees	290	257
Commodities stock levies and warehouse listing fees	43	78
Participants' subscription and application fees	77	87
Accommodation income (note (i))	84	201
Conversion agency fees	69	43
Sales of Trading Rights	17	22
LME financial over-the-counter booking fees	45	53
BayConnect sales and service revenue	98	69
Brokerage on IPO direct allotments	1	5
Miscellaneous revenue	31	29
	1,506	1,564

(i) Accommodation income mainly comprises charges on participants for depositing securities as alternatives to cash deposits of Margin Funds, or depositing currencies whose relevant bank deposit rates are negative, and charges imposed on Participants of LME Clear Limited (LME Clear) for cash collateral where the investment return on the collateral is below the benchmarked interest rates stipulated in the clearing rules of LME Clear.

(d) Revenue recognised in 2022 that was included in the deferred revenue balance at the beginning of the year amounted to \$1,100 million (2021: \$1,049 million).

6. Net Investment Income

Accounting Policy

Interest income on investments and interest rebates to Participants are recognised on a time apportionment basis using the effective interest method.

Gains and losses arising from changes in fair value of financial assets measured at fair value through profit or loss are included under net investment income in the consolidated income statement.

	2022 \$m	2021 \$m
Gross interest income from financial assets measured at amortised cost	3,944	775
Gross interest income from financial assets measured at fair value through other comprehensive income	207	38
Interest rebates to Participants	(2,271)	(47)
Net interest income	1,880	766
Net (losses)/gains on financial assets mandatorily measured at fair value through profit or loss		
– investment funds	(486)	364
– other investments	(21)	121
	(507)	485
Others	(17)	53
Net investment income	1,356	1,304

7. HKEX Foundation Donation Income

Accounting Policy

HKEX Foundation Limited is a charitable foundation controlled by HKEX (note 28(b)).

HKEX Foundation donation income is recognised when the right to receive such donation is established. Donation income from other group companies has been eliminated on consolidation.

	2022 \$m	2021 \$m
Stock Code Balloting Scheme	129	138
Others	1	1
	130	139

- (a) The amount excludes \$26 million (2021:\$Nil) donation received from HKEX, which has been eliminated on consolidation.

8. Sundry Income

	2022 \$m	2021 \$m
Forfeiture of unclaimed dividends (note (a))	21	12
Others	15	24
	36	36

- (a) In accordance with CCASS Rule 1109, the Group exercised its forfeiture right to appropriate cash dividends of \$21 million (2021: \$12 million) held by HKSCC Nominees Limited, which had remained unclaimed for a period of more than seven years and recognised these as sundry income. The Group has, however, undertaken to honour all forfeited claims amounting to \$239 million at 31 December 2022 (31 December 2021: \$218 million) if adequate proof of entitlement is provided by the beneficial owner claiming any dividends forfeited.

9. Transaction-related Expenses

Accounting Policy

Transaction-related expenses comprise of license fees, bank charges and other costs which directly vary with trading and clearing transactions. They are presented below Revenue and other income to reflect the nature of such direct costs. They are expensed in the period in which they are incurred.

10. Staff Costs and Related Expenses

	2022 \$m	2021 \$m
Salaries and other short-term employee benefits	2,728	2,425
Employee share-based compensation benefits of Share Award Scheme (note 43)	380	324
Termination benefits	16	20
Retirement benefit costs (note (a)):		
– ORSO Plan	158	137
– MPF Scheme	4	4
– LME Pension Scheme	28	29
– PRC Retirement Schemes	10	9
	3,324	2,948

10. Staff Costs and Related Expenses (continued)

(a) Retirement Benefit Costs

Accounting Policy

Contribution to the defined contribution plans are expensed as incurred.

The Group has sponsored a defined contribution provident fund scheme (ORSO Plan) which is registered under the Occupational Retirement Schemes Ordinance (ORSO) and a Mandatory Provident Fund scheme (MPF Scheme) for the benefits of its employees in Hong Kong. The Group contributes 12.5 per cent of the employee's basic salary to the ORSO Plan if an employee contributes 5 per cent. If the employee chooses not to contribute, the Group will contribute 10 per cent of the employee's salary to the ORSO Plan. Contributions to the MPF Scheme are in accordance with the statutory limits prescribed by the MPF Ordinance. Forfeited contributions of the ORSO Plan for employees who leave before the contributions are fully vested are not used to offset existing contributions but are credited to a reserve account of that Plan, and are available for distribution to the members of the Plan at the discretion of the trustees.

For employees of LME and LME Clear, the Group has also sponsored a defined contribution pension scheme (LME Pension Scheme). For employees who joined LME and LME Clear before 1 May 2014, the Group contributes 15 per cent to 17 per cent of the employee's basic salary to the LME Pension Scheme. For employees who joined the LME and LME Clear on or after 1 May 2014, they are automatically enrolled into the LME Pension Scheme on a matched contribution basis and may choose a personal contribution level ranging from 3 per cent to 5 per cent of their basic salaries, which is matched by the Group's contribution ranging from 6 per cent to 10 per cent of their basic salaries. Staff may opt-out of the scheme if they wish. There are no forfeited contributions for the LME Pension Scheme as the contributions are fully vested to the employees upon payment to the scheme.

Pursuant to the relevant laws and regulations in the People's Republic of China (PRC), the Group has joined defined contribution retirement schemes for the employees arranged by local government labour and security authorities (PRC Retirement Schemes). The Group makes contributions to the retirement schemes at the applicable rates based on the amounts stipulated by the local government organisations. Upon retirement, the local government labour and security authorities are responsible for the payment of the retirement benefits to the retired employees.

Assets of the ORSO Plan, MPF Scheme, LME Pension Scheme and PRC Retirement Schemes are held separately from those of the Group and are independently administered and are not included in the consolidated statement of financial position.

11. Information Technology and Computer Maintenance Expenses

	2022 \$m	2021 \$m
Costs of services and goods:		
– consumed by the Group	658	634
– directly consumed by Participants	74	81
	732	715

12. Other Operating Expenses

	2022 \$m	2021 \$m
Bank charges	16	15
Communication expenses	8	11
Custodian and fund management related fees	46	37
Financial data subscription fees	52	52
Insurance	15	12
Non-executive directors' fees	24	22
Office demolition and relocation expenses	6	11
(Write back of provision for)/provision for impairment losses of receivables	(2)	7
Repairs and maintenance expenses	62	62
Security expenses	21	21
Travel expenses	26	16
Regulatory fees	20	22
Other miscellaneous expenses	81	83
	375	371

13. Operating Profit

	2022 \$m	2021 \$m
Operating profit is stated after charging/(crediting):		
Auditor's remuneration		
– audit fees	19	18
– other non-audit fees	2	2
Lease rentals for land and buildings (note (a))	1	1
(Write back of provision for)/provision for impairment losses of receivables	(2)	7
Net foreign exchange losses/(gains) on financial assets (excluding financial assets measured at fair value through profit or loss)	17	(53)

(a) The amounts represent lease rentals relating to short-term leases under HKFRS 16.

14. Finance Costs

Accounting Policy

Interest expenses (other than interest on lease liabilities) are charged to the consolidated income statement and recognised on a time apportionment basis, taking into account the principal and the applicable interest rates using the effective interest method.

Interest on lease liabilities is charged to the consolidated income statement over the lease periods so as to produce a constant periodic rate of interest on the remaining balance of the lease liabilities (note 38) for each period.

Other finance costs, which represent banking facility commitment fees that relate to liquidity support provided to the Group's clearing houses, are recognised in the consolidated income statement in the period in which they are incurred.

	2022 \$m	2021 \$m
Interest on borrowings (note 39)	4	3
Interest on lease liabilities (note 38)	68	79
Banking facility commitment fees	51	54
Negative interest on Euro and Japanese Yen deposits	15	18
	138	154

15. Directors' Emoluments and Interests of Directors

All Directors, including Executive Directors (HKEX's Chief Executive Officer and ex-HKEX's Interim Chief Executive), received emoluments during the years ended 31 December 2022 and 31 December 2021. The aggregate emoluments paid and payable to the Directors during the year were as follows:

	2022 \$'000	2021 \$'000
Executive Directors:		
Salaries and other short-term employee benefits	10,328	8,987
Performance cash incentive	12,375	19,438
Retirement benefit costs	1,250	1,100
	23,953	29,525
Employee share-based compensation benefits (note (a))	62,608	50,405
	86,561	79,930
Non-executive Directors:		
Fees	23,643	22,079
Other benefits	-	12
	23,643	22,091
	110,204	102,021

- (a) Employee share-based compensation benefits represent the fair value of share awards granted under the Share Award Scheme (Awarded Shares) on grant date (note 43) recognised in the consolidated income statement during the year.
- (b) The emoluments of all Directors, including HKEX's Chief Executive Officer and HKEX's ex-Interim Chief Executive who are ex-officio members, are set out below. The amounts represent emoluments paid or receivable in respect of their services as a director.

Name of Director	2022							Total \$'000
	Fees \$'000	Salary \$'000	Other benefits (note (i)) \$'000	Performance cash incentive \$'000	Retirement benefit costs (note (ii)) \$'000	Sub-total \$'000	Employee share-based compensation benefits \$'000	
Laura M Cha	5,166	-	-	-	-	5,166	-	5,166
Alejandro N Aguzin	-	10,000	328	12,375	1,250	23,953	62,608	86,561
Nicholas C Allen	1,253	-	-	-	-	1,253	-	1,253
Apurv Bagri	1,245	-	-	-	-	1,245	-	1,245
C H Cheah	1,663	-	-	-	-	1,663	-	1,663
Anna M Cheung	1,548	-	-	-	-	1,548	-	1,548
Susan M F Chow Woo	1,783	-	-	-	-	1,783	-	1,783
Rafael Gil-Tienda	2,098	-	-	-	-	2,098	-	2,098
Benjamin P C Hung	1,238	-	-	-	-	1,238	-	1,238
Nisa B W Y Leung	1,253	-	-	-	-	1,253	-	1,253
Hugo P H Leung	1,958	-	-	-	-	1,958	-	1,958
Stephen K W Yiu	3,073	-	-	-	-	3,073	-	3,073
Y Zhang	1,365	-	-	-	-	1,365	-	1,365
Total	23,643	10,000	328	12,375	1,250	47,596	62,608	110,204

15. Directors' Emoluments and Interests of Directors (continued)

(b) (continued)

Name of Director	2021							Total \$'000
	Fees \$'000	Salary \$'000	Other benefits (note (i)) \$'000	Performance cash incentive \$'000	Retirement benefit costs (note (ii)) \$'000	Sub-total \$'000	Employee share-based compensation benefits \$'000	
Laura M Cha	4,949	-	12	-	-	4,961	-	4,961
Alejandro N Aguzin (note (iii))	-	6,048	157	16,500	756	23,461	47,762	71,223
Calvin C K Tai (note (iv))	-	2,750	32	2,938	344	6,064	2,643	8,707
Nicholas C Allen (note (v))	878	-	-	-	-	878	-	878
Apurv Bagri	1,130	-	-	-	-	1,130	-	1,130
T C Chan (note (vii))	356	-	-	-	-	356	-	356
C H Cheah	1,596	-	-	-	-	1,596	-	1,596
Anna M Cheung (note (v))	998	-	-	-	-	998	-	998
Susan M F Chow Woo	1,598	-	-	-	-	1,598	-	1,598
Anita Y M Fung (note (vii))	304	-	-	-	-	304	-	304
Rafael Gil-Tienda	1,970	-	-	-	-	1,970	-	1,970
Fred Z Hu (note (vii))	340	-	-	-	-	340	-	340
Benjamin P C Hung	1,170	-	-	-	-	1,170	-	1,170
Nisa B W Y Leung (note (vi))	878	-	-	-	-	878	-	878
Hugo P H Leung	1,577	-	-	-	-	1,577	-	1,577
John M Williamson (note (vii))	451	-	-	-	-	451	-	451
Stephen K W Yiu	3,006	-	-	-	-	3,006	-	3,006
Y Zhang (note (v))	878	-	-	-	-	878	-	878
Total	22,079	8,798	201	19,438	1,100	51,616	50,405	102,021

Notes:

- (i) Other benefits included leave pay, insurance premium and club membership.
- (ii) Retirement benefit costs include employer's contributions to provident fund. Employees who retire before normal retirement age are eligible for 18 per cent of the employer's contribution to the provident fund after completion of two years of service. The rate of vested benefit increases at an annual increment of 18 per cent thereafter reaching 100 per cent after completion of seven years of service.
- (iii) Appointment effective 24 May 2021
- (iv) Mr. Tai served as Interim Chief Executive and Executive Director of HKEX from 1 January 2021 to 23 May 2021, and served as Chief Operating Officer and Co-President (up to 31 July 2021)/President (from 1 August 2021 to 31 May 2022) of HKEX. The amounts disclosed above represented his remuneration from 1 January 2021 to 23 May 2021, which were calculated on a pro rata basis with reference to his actual remuneration for the year ended 31 December 2021.
- (v) Elected on 28 April 2021
- (vi) Appointment effective 28 April 2021
- (vii) Retired on 28 April 2021

(c) Directors' material interests in transactions, arrangements or contracts

No significant transactions, arrangements and contracts in relation to HKEX's business to which HKEX was a party and in which a director of HKEX had a material interest, whether directly or indirectly, subsisted at the end of the year or at any time during the year.

16. Five Top-paid Employees

One (2021: one) of the five top-paid employees was the Chief Executive Officer whose emoluments are disclosed in note 15. Details of the emoluments of the other four (2021: four) top-paid employees, which included the emoluments payable to HKEX's ex-Interim Chief Executive served as Executive Director in 2021 (note 15) were as follows:

	2022 \$'000	2021 \$'000
Salaries and other short-term employee benefits	22,374	26,966
Sign-on bonus	-	3,614
Performance cash incentive	11,944	17,167
Retirement benefit costs	1,375	2,398
	35,693	50,145
Employee share-based compensation benefits (note (a))	40,630	27,844
	76,323	77,989

- (a) Employee share-based compensation benefits represent the fair value of Awarded Shares on grant date (note 43) amortised to the consolidated income statement during the year.
- (b) The emoluments of these four (2021: four) employees, including share-based compensation benefits, were within the following bands:

	2022 Number of employees	2021 Number of employees
\$13,500,001 – \$14,000,000	1	-
\$15,000,001 – \$15,500,000	-	1
\$16,000,001 – \$16,500,000	1	-
\$17,500,001 – \$18,000,000	-	1
\$18,500,001 – \$19,000,000	1	-
\$22,000,001 – \$22,500,000	-	1
\$22,500,001 – \$23,000,000	-	1
\$27,000,001 – \$27,500,000	1	-
	4	4

The above employees included senior executives who were also Directors of the subsidiaries during the years. No Directors of the subsidiaries waived any emoluments.

17. Taxation

Accounting Policy

Tax charge for the period comprises current and deferred tax. Tax is recognised in the consolidated income statement, except to the extent that it relates to items recognised in other comprehensive income or directly in equity, in which case, the tax is also recognised in other comprehensive income or directly in equity, respectively.

The current tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period in the countries where HKEX and its subsidiaries operate and generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation and considers whether it is probable that a taxation authority will accept an uncertain tax treatment. Provisions are established where appropriate on the basis of amounts expected to be paid to tax authorities.

The Group's accounting policy for recognition of deferred tax is described in note 41.

(a) Taxation charge/(credit) in the consolidated income statement represented:

	2022 \$m	2021 \$m
Current tax – Hong Kong Profits Tax		
– Provision for the year	1,481	1,969
– Over provision in respect of prior years	(2)	–
	1,479	1,969
Current tax – Overseas Tax		
– Provision for the year	117	174
– Under provision in respect of prior years	–	2
	117	176
Total current tax (note (i))	1,596	2,145
Deferred tax		
– Origination and reversal of temporary differences	(32)	38
– Impact of changes in UK Corporate Tax rate (note (ii))	–	160
Total deferred tax (note 41(a))	(32)	198
Taxation charge	1,564	2,343

- (i) Hong Kong Profits Tax has been provided at the rate of 16.5 per cent (2021: 16.5 per cent) on the estimated assessable profit for the year. Taxation on overseas profits has been calculated on the estimated assessable profit at the rates of taxation prevailing in the countries in which the Group operates, with the average corporation tax rate applicable to the subsidiaries in the UK being 19 per cent (2021: 19 per cent).
- (ii) Through the enactment of the Finance Act 2021 in June 2021, the UK Corporate Tax rate will increase from 19 per cent to 25 per cent from 1 April 2023. As a result, a one-off deferred tax charge on acquired LME intangible assets of \$160 million was recognised to the consolidated income statement during the year ended 31 December 2021.

17. Taxation (continued)

- (b) The taxation on the Group's profit before taxation differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated entities as follows:

	2022 \$m	2021 \$m
Profit before taxation	11,659	14,841
Tax calculated at domestic tax rates applicable to profits in the respective countries (note (i))	1,907	2,441
Income not subject to taxation	(475)	(410)
Expenses not deductible for taxation purposes	82	96
Remeasurement of deferred tax assets and liabilities arising from changes in UK Corporate Tax rate (note (a)(ii))	-	160
Change in deferred tax arising from unrecognised tax losses and other deferred tax adjustments	52	54
(Over)/under provision in respect of prior years	(2)	2
Taxation charge	1,564	2,343

- (i) The weighted average applicable tax rate was 16.4 per cent (2021: 16.4 per cent).

18. Earnings Per Share

The calculation of the basic and diluted earnings per share is as follows:

- (a) Basic earnings per share

	2022	2021
Profit attributable to shareholders (\$m)	10,078	12,535
Weighted average number of shares in issue less shares held for Share Award Scheme (in '000)	1,265,489	1,265,431
Basic earnings per share (\$)	7.96	9.91

- (b) Diluted earnings per share

	2022	2021
Profit attributable to shareholders (\$m)	10,078	12,535
Weighted average number of shares in issue less shares held for Share Award Scheme (in '000)	1,265,489	1,265,431
Effect of Awarded Shares (in '000)	2,235	2,140
Weighted average number of shares for the purpose of calculating diluted earnings per share (in '000)	1,267,724	1,267,571
Diluted earnings per share (\$)	7.95	9.89

19. Dividends

Accounting Policy

Dividends declared are recognised as liabilities in the consolidated financial statements in the period in which the dividends are approved by shareholders or directors, where appropriate.

	2022 \$m	2021 \$m
First interim dividend paid:		
\$3.45 (2021: \$4.69) per share	4,374	5,946
Less: Dividend for shares held by Share Award Scheme (note (a))	(8)	(12)
	4,366	5,934
Second interim dividend declared (note (b)):		
\$3.69 (2021: \$4.18) per share based on issued share capital at 31 Dec	4,678	5,300
Less: Dividend for shares held by Share Award Scheme at 31 Dec (note (a))	(9)	(10)
	4,669	5,290
	9,035	11,224

- (a) The results and net assets of The HKEX Employees' Share Award Scheme (Share Award Scheme) are included in HKEX's financial statements. Therefore, dividends for shares held by the Share Award Scheme were deducted from the total dividends.
- (b) The second interim dividend declared after 31 December was not recognised as a liability at 31 December as it had not been approved by the Board.

20. Financial Assets

Accounting Policy

The Group classifies its financial assets in the following measurement categories:

- Those measured at fair value (either through profit or loss (note 22) or through other comprehensive income (note 23)); and
- Those measured at amortised cost (note 24).

The classification depends on the business model for managing the financial assets and the contractual terms of the cash flows.

The Group reclassifies debt investments when and only when its business model for managing those assets changes.

Financial assets of Clearing House Funds and Margin Funds are classified as current assets as they will be liquidated whenever liquid funds are required.

Other financial assets are classified as current assets unless they are expected to mature or be disposed of after twelve months from the end of the reporting period, in which case, they are included in non-current assets. For investment funds which have no maturity date, they are included in current assets unless they cannot be redeemed within twelve months from the end of the reporting period.

Financial assets are derecognised when the rights to receive cash flows from the assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership of the assets.

21. Cash and Cash Equivalents

Accounting Policy

Cash and cash equivalents comprise cash on hand, bank balances and other short-term highly liquid investments that are readily convertible into known amounts of cash and are subject to an insignificant risk of changes in value (mainly reverse repurchase investments, time deposits and short-term debt securities), with original maturities of three months or less, or with remaining maturities of three months or less from the date of acquisition.

	At 31 Dec 2022				
	Cash for A-shares (notes (a) and (c)) \$m	Corporate Funds (notes (b) and 25) \$m	Margin Funds (notes (c) and 33) \$m	Clearing House Funds (notes (c) and 37) \$m	Total \$m
Cash on hand and balances and deposits with banks	2,810	14,213	48,857	6,075	71,955
Unlisted debt securities	-	174	-	1,418	1,592
Reverse repurchase investments	-	1,565	98,325	11,528	111,418
	2,810	15,952	147,182	19,021	184,965

	At 31 Dec 2021				
	Cash for A-shares (notes (a) and (c)) \$m	Corporate Funds (notes (b) and 25) \$m	Margin Funds (notes (c) and 33) \$m	Clearing House Funds (notes (c) and 37) \$m	Total \$m
Cash on hand and balances and deposits with banks	7,372	11,443	54,546	6,884	80,245
Unlisted debt securities	-	-	-	75	75
Reverse repurchase investments	-	1,457	91,040	8,544	101,041
	7,372	12,900	145,586	15,503	181,361

- (a) Cash for A-shares includes:
- (i) Renminbi (RMB) cash prepayments received by Hong Kong Securities Clearing Company Limited (HKSCC) from its Clearing Participants for releasing their allocated A-shares on the trade day. Such prepayments will be used to settle HKSCC's Continuous Net Settlement (CNS) obligations payable on the next business day; and
 - (ii) Hong Kong Dollar/United States Dollar cash collateral received by HKSCC from its Clearing Participants for releasing their allocated A-shares on the trade day. Such collateral will be refunded to the Clearing Participants when they settle their RMB CNS obligations on the next business day.
- (b) At 31 December 2022, cash and cash equivalents of Corporate Funds of \$694 million (31 December 2021: \$502 million) (note 25(b)) were solely used to support Skin-in-the-Game and default fund credits of Clearing House Funds (note 37(a)).
- (c) The cash and cash equivalents of Margin Funds, Clearing House Funds, Corporate Funds reserved for supporting Skin-in-the-Game and default fund credits of Clearing House Funds (note (b)), and Cash for A-shares are held for specific purposes and cannot be used by the Group to finance other activities. These balances are not included in cash and cash equivalents of the Group for cash flow purpose in the consolidated statement of cash flows.

22. Financial Assets Measured at Fair Value through Profit or Loss

Accounting Policy

Classification

Investments and other financial assets are classified under financial assets measured at fair value through profit or loss if they do not meet the conditions to be measured at fair value through other comprehensive income (note 23) or amortised cost (note 24). On initial recognition, the Group may irrevocably designate a financial asset as at fair value through profit or loss that otherwise meets the requirements to be measured at amortised cost or at fair value through other comprehensive income if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

Investments in equity instruments that are not held for trading are classified under financial assets measured at fair value through profit or loss unless the Group has made an irrevocable election at the time of initial recognition to account for the investment at fair value through other comprehensive income.

Recognition and measurement

Purchases and sales of financial assets measured at fair value through profit or loss are recognised on the trade date. They are initially recognised at fair value with transaction costs recognised as expenses in the consolidated income statement and subsequently carried at fair value. Gains and losses arising from changes in fair value are included in the consolidated income statement in the period in which they arise.

Interest income is included in net fair value gains/(losses) from these financial assets.

Fair values of quoted investments are based on the most representative prices within the bid-ask spreads which are currently considered as the bid-prices. The investment funds are valued based on the latest available transaction price or redemption price for each fund, as determined by the fund administrator. For unlisted securities or financial assets without an active market, the Group establishes the fair value by using valuation techniques including the use of recent arm's length transactions, reference to other instruments that are substantially the same and discounted cash flow analysis.

	Corporate Funds (note 25)	
	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
<u>Mandatorily measured at fair value</u>		
Investment funds:		
– listed outside Hong Kong	662	1,680
– unlisted	5,648	7,063
	6,310	8,743
Unlisted equity securities	654	694
	6,964	9,437
The expected recovery dates of the financial assets are analysed as follows:		
Within twelve months	6,177	8,491
More than twelve months	787	946
	6,964	9,437

23. Financial Assets Measured at Fair Value through Other Comprehensive Income

Accounting Policy

Classification

A debt investment is measured at fair value through other comprehensive income if it meets both of the following conditions and is not designated as at fair value through profit or loss:

- It is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- Its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

The nature of any derivatives embedded in the debt instruments is considered in determining whether the cash flows are solely payment of principal and interest on the principal outstanding and are not accounted for separately. If the combined cash flows of the debt instruments and embedded derivatives are considered not satisfying the “solely payments of principal and interest” condition, the financial assets are classified as financial assets measured at fair value through profit or loss (note 22).

Recognition and measurement

At initial recognition, the Group measures a financial asset at its fair value plus transaction costs that are directly attributable to the acquisition of the financial asset.

Financial assets measured at fair value through other comprehensive income are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognised in the consolidated income statement. Other changes in carrying amounts are recognised in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to the consolidated income statement.

Fair values of quoted investments or investments with an active market are based on the most representative prices within the bid-ask spreads which are currently considered as the bid-prices. For unlisted securities or financial assets without an active market, the Group establishes the fair value by using valuation techniques including the use of recent arm’s length transactions and dealer quotes for similar investments.

Impairment

The Group assesses on a forward-looking basis the expected credit losses associated with its debt instruments measured at fair value through other comprehensive income. Expected credit losses are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all expected cash shortfalls (i.e., the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive).

In measuring expected credit losses, the Group takes into account reasonable and supportable information that is available without undue cost or effort. This includes information about past events, current conditions and forecasts of future economic conditions.

23. Financial Assets Measured at Fair Value through Other Comprehensive Income (continued)

Accounting Policy (continued)

Impairment (continued)

Expected credit losses are measured on either of the following bases:

- 12-month expected credit losses: these are losses that are expected to result from possible default events within the 12 months after the reporting date; and
- Lifetime expected credit losses: these are losses that are expected to result from all possible default events over the expected lives of the items to which the expected credit loss model applies.

For financial assets measured at fair value through other comprehensive income, the Group recognises a provision for impairment losses equal to 12-month expected credit losses unless there has been a significant increase in credit risk of the financial assets since initial recognition, in which case the provision for impairment losses is measured at an amount equal to lifetime expected credit losses.

Expected credit losses are measured at each reporting date to reflect changes in the financial asset's credit risk since initial recognition.

In assessing whether the credit risk of a financial asset has increased significantly since initial recognition, the Group compares the risk of default occurring on the financial asset assessed at the reporting date with that assessed at the date of initial recognition. In making this reassessment, the Group considers that a default event occurs when the financial asset is past due by 90 days or one or more credit impaired events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred.

The following information is taken into account when assessing whether credit risk has increased significantly since initial recognition:

- Failure to make payments of principal or interest on their contractually due dates;
- An actual or expected significant deterioration in a financial asset's external or internal credit rating (if available);
- An actual or expected significant deterioration in the operating results of the debtor; and
- Existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Group.

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial assets are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

Any change in the expected credit loss amount is recognised as an impairment loss or reversal of impairment loss in the consolidated income statement, with a corresponding adjustment to the other comprehensive income.

23. Financial Assets Measured at Fair Value through Other Comprehensive Income (continued)

	At 31 Dec 2022		
	Margin Funds (note 33) \$m	Clearing House Funds (note 37) \$m	Total \$m
Listed debt securities (note (a))	2,265	–	2,265
Unlisted debt securities (note (a))	9,666	3,031	12,697
	11,931	3,031	14,962
The expected recovery dates of the financial assets are analysed as follows:			
Within twelve months (note (b))	11,931	3,031	14,962
	At 31 Dec 2021		
	Margin Funds (note 33) \$m	Clearing House Funds (note 37) \$m	Total \$m
Listed debt securities (note (a))	467	–	467
Unlisted debt securities (note (a))	4,816	4,472	9,288
	5,283	4,472	9,755
The expected recovery dates of the financial assets are analysed as follows:			
Within twelve months (note (b))	5,283	4,472	9,755

- (a) No provision for impairment loss was made at 31 December 2022 and 31 December 2021 as the financial assets were considered to be of low credit risk and the expected credit loss was minimal. The investments in debt securities held were of investment grade and had a weighted average credit rating of Aa2 (Moody) (31 December 2021: Aa2 (Moody)) with no history of default and there were no unfavourable current conditions and forecast of future economic conditions at the reporting dates.
- (b) Includes financial assets maturing after twelve months of \$7,806 million (31 December 2021: \$3,879 million) attributable to Margin Funds that could readily be liquidated to meet liquidity requirements of the Fund (note 54(b)).

24. Financial Assets Measured at Amortised Cost

Accounting Policy

Classification

Investments are classified under financial assets measured at amortised cost if they satisfy both of the following conditions:

- The assets are held within a business model whose objective is to hold assets in order to collect contractual cash flows; and
- The contractual terms of the financial assets give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

The nature of any derivatives embedded in the financial assets is considered in determining whether the cash flows are solely payment of principal and interest on the principal outstanding and are not accounted for separately. If the combined cash flows of the financial assets and embedded derivatives are considered not satisfying the “solely payments of principal and interest” condition, the financial assets are classified as financial assets measured at fair value through profit or loss (note 22).

Accounts receivable and other deposits are also classified under this category (note 27).

Recognition and measurement

Financial assets measured at amortised cost are initially recognised at fair value plus transaction costs and subsequently carried at amortised cost using the effective interest method. The amortised cost is reduced by loss allowance for expected credit losses. Interest income, foreign exchange gains and losses and impairment are recognised in the consolidated income statement. Any gains and losses on derecognition is recognised in the consolidated income statement.

Impairment

The Group assesses on a forward-looking basis the expected credit loss associated with its financial assets measured at amortised cost.

For accounts receivable due from customers, the Group applies the simplified approach permitted by HKFRS 9 (2014): Financial Instruments, which requires expected lifetime losses (note 23) to be recognised from initial recognition of the receivables. Expected credit losses of receivables are estimated using a provision matrix based on the Group’s historical credit loss experience, adjusted for factors that are specific to the debtors and an assessment of both the current and forecast general economic conditions at the reporting date.

For all other financial assets measured at amortised cost (including time deposits, debt instruments and other deposits), the Group recognises a provision for impairment losses equal to 12-month expected credit losses (refer to note 23 for details of assessment of credit risk) unless there has been a significant increase in credit risk of the financial assets since initial recognition, in which case the provision for impairment losses is measured at an amount equal to lifetime expected credit losses.

Expected credit losses are remeasured at each reporting date to reflect changes in the financial asset’s credit risk since initial recognition (note 23). Any change in the expected credit loss amount is recognised as an impairment loss or reversal of impairment loss in the consolidated income statement, with a corresponding adjustment to the carrying amount through a loss allowance account.

The gross carrying amount of a financial asset is written off (either partially or in full) to the extent that there is no realistic prospect of recovery. This is generally the case when the Group determines that the debtor does not have assets or sources of income that could generate sufficient cash flows to repay the amounts subject to the write-off.

Subsequent recoveries of an asset that has previously been written off are recognised as a reversal of impairment in the consolidated income statement in the period in which the recovery occurs.

24. Financial Assets Measured at Amortised Cost (continued)

	At 31 Dec 2022		
	Corporate Funds (notes (b) and 25) \$m	Margin Funds (note 33) \$m	Total \$m
Debt securities	1,219	-	1,219
Time deposits with original maturities over three months	10,599	58,580	69,179
Other financial assets	96	-	96
	11,914	58,580	70,494
The expected recovery dates of the financial assets are analysed as follows:			
Within twelve months	11,705	58,580	70,285
More than twelve months	209	-	209
	11,914	58,580	70,494
	At 31 Dec 2021		
	Corporate Funds (notes (b) and 25) \$m	Margin Funds (note 33) \$m	Total \$m
Debt securities	1,194	-	1,194
Time deposits with original maturities over three months	10,166	40,371	50,537
Other financial assets	97	-	97
	11,457	40,371	51,828
The expected recovery dates of the financial assets are analysed as follows:			
Within twelve months	10,931	40,371	51,302
More than twelve months	526	-	526
	11,457	40,371	51,828

- (a) No provision for impairment loss for these financial assets was made at 31 December 2022 and 31 December 2021 as the financial assets were considered to be of low credit risk and the expected credit loss of these financial assets was minimal. Debt securities held were of investment grade and had a weighted average credit rating of Aa2 (Moody) (31 December 2021: Aa2 (Moody)). Deposits were placed with the investment grade banks, licensed banks and restricted licence banks regulated by the Hong Kong Monetary Authority, and banks regulated by local banking regulators in the countries where the Group's subsidiaries operate. All these financial assets had no history of default and there were no unfavourable current conditions and forecast of future economic conditions at the reporting dates.
- (b) At 31 December 2022, debt securities of Corporate Funds of \$604 million (31 December 2021: \$765 million) (note 25(b)) were solely used to support Skin-in-the-Game and default fund credits of HKSCC Guarantee Fund (note 37(a)).
- (c) The fair values of financial assets maturing after twelve months are disclosed in note 54(d)(ii).

25. Corporate Funds

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Corporate Funds comprised the following instruments:		
Cash and cash equivalents (notes (b) and 21)	15,952	12,900
Financial assets measured at fair value through profit or loss (note 22)	6,964	9,437
Financial assets measured at amortised cost (notes (b) and 24)	11,914	11,457
	34,830	33,794

- (a) Financial assets held by the Group which are funded by share capital and funds generated from operations are classified as Corporate Funds (i.e., other than financial assets of Margin Funds, Clearing House Funds, Cash for A-shares, and derivative financial instruments).
- (b) At 31 December 2022, cash and cash equivalents of Corporate Funds of \$694 million (31 December 2021: \$502 million) and financial assets measured at amortised cost of Corporate Funds of \$604 million (31 December 2021: \$765 million) were solely used to support Skin-in-the-Game and default fund credits of Clearing House Funds (note 37(a)).

26. Derivative Financial Instruments

Accounting Policy

Derivative financial instruments include outstanding derivatives contracts of LME Clear, which acts as a central counterparty to the base, ferrous and precious metals futures and options contracts traded on the LME, and forward foreign exchange contracts. Derivatives are initially recognised at fair value on trade date and subsequently remeasured at their fair values. Except where outstanding derivatives contracts are held in the capacity as a central counterparty and derivatives which relate to qualifying cash flow hedges (note 44(a)), derivatives are categorised as held for trading with changes in fair value recognised in the consolidated income statement.

The full fair value of a hedging derivative relating to a forward foreign exchange contract is classified as a non-current asset or liability when the remaining maturity of the hedged item is more than 12 months; it is classified as a current asset or liability when the remaining maturity of the hedged item is less than 12 months. Trading derivatives are classified as a current asset or liability.

Derivative financial assets and liabilities are offset and the net amount reported in the consolidated statement of financial position 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.

In prior years, outstanding derivatives contracts of LME Clear were included under financial assets measured at fair value through profit or loss and financial liabilities at fair value through profit or loss. These contracts have been reclassified as derivative financial instruments to conform with the current year presentation.

26. Derivative Financial Instruments (continued)

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
<u>Mandatorily measured at fair value</u>		
Derivative financial assets:		
– base, ferrous and precious metals futures and options contracts cleared through LME Clear (note (a))	80,705	91,424
– forward foreign exchange contracts held as cash flow hedging instruments (note 44(a))	13	–
	80,718	91,424
Derivative financial liabilities:		
– base, ferrous and precious metals futures and options contracts cleared through LME Clear (note (a))	80,705	91,424
	80,705	91,424

- (a) The amounts represent the fair value of the outstanding base, ferrous and precious metals futures and options contracts cleared through LME Clear that do not qualify for netting under HKAS 32 – Financial Instruments: Presentation, where LME Clear is acting in its capacity as a central counterparty to the contracts traded on the LME.

27. Accounts Receivable, Prepayments and Deposits

Accounting Policy

Accounts receivable and other deposits are financial assets measured at amortised cost less impairment. The accounting policy for financial assets measured at amortised cost is described in note 24.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Receivable from ChinaClear, and Exchange and Clearing Participants:		
– CNS money obligations receivable (note (a))	12,793	17,921
– transaction levy, stamp duty and fees receivable	966	950
– Settlement Reserve Fund and Settlement Guarantee Fund held by ChinaClear (note 33)	10,206	12,757
– others	3	23
Receivables for investment funds sold before 31 Dec	248	98
Payment in advance for investment funds traded after 31 Dec	–	97
Other receivables, prepayments and deposits	1,204	942
Less: Provision for impairment losses of receivables (notes (b) and (c))	(45)	(50)
	25,375	32,738

27. Accounts Receivable, Prepayments and Deposits (continued)

- (a) Upon acceptance of Stock Exchange trades for settlement in CCASS under the CNS basis, HKSCC interposes itself between the HKSCC Clearing Participants as the settlement counterparty to the trades through novation. The CNS money obligations due by/to HKSCC Clearing Participants on the Stock Exchange trades are recognised as receivables and payables (note 34) when they are confirmed and accepted on the day after the trade day.

For a trade in A-shares transacted for Stock Exchange Participants, the rights and obligations of the parties to the trade will be transferred to ChinaClear, and a market contract between HKSCC and the relevant HKSCC Clearing Participants is created through novation. The CNS money obligations due by/to HKSCC Clearing Participants and ChinaClear are recognised as receivables and payables (note 34) when the trades are confirmed on the trade day.

- (b) Expected credit losses

For accounts receivable, the Group applies the simplified approach permitted by HKFRS 9 (2014), which requires expected lifetime losses to be recognised from initial recognition of the receivables.

The expected loss rates are based on the payment profiles of debtors and the corresponding historical credit losses experienced during the year. The historical loss rates are adjusted to reflect current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables. On that basis, the loss allowance for accounts receivable as at 31 December 2022 and 31 December 2021 was determined as follows:

	At 31 Dec 2022			Total
	Current or within 30 days past due	31 to 180 days past due	More than 180 days past due	
Expected loss rate	4%	12%	100%	
Gross carrying amount – accounts receivable subject to expected credit loss provision (\$m)	568	33	20	621
Loss allowance (\$m)	21	4	20	45

	At 31 Dec 2021			Total
	Current or within 30 days past due	31 to 180 days past due	More than 180 days past due	
Expected loss rate	3%	10%	100%	
Gross carrying amount – accounts receivable subject to expected credit loss provision (\$m)	545	21	29	595
Loss allowance (\$m)	19	2	29	50

For the remaining receivables and other deposits (excluding prepayments) amounting to \$24,586 million as of 31 December 2022 (31 December 2021: \$31,964 million), the expected credit loss was minimal as these receivables were mainly due from Participants which are subject to the Group's stringent financial requirements and admission criteria, compliance monitoring and risk management measures, these receivables had no recent history of default, part of the receivables were subsequently settled, and there was no unfavourable current conditions and forecast future economic conditions at the reporting dates.

27. Accounts Receivable, Prepayments and Deposits (continued)

(c) The movements in provision for impairment losses of receivables were as follows:

	2022 \$m	2021 \$m
At 1 Jan	50	42
(Write back of provision for)/provision for loss allowance for receivables under other operating expenses	(2)	7
Exchange differences	(3)	1
At 31 Dec	45	50

(d) CNS money obligations receivable mature within two days after the trade date. The balance of Settlement Reserve Fund and Settlement Guarantee Fund with ChinaClear is rebalanced on a monthly basis. Fees receivable are due immediately or up to 60 days depending on the type of services rendered. The majority of the remaining accounts receivable, prepayments and deposits were due within three months.

28. Principal Subsidiaries and Controlled Structured Entities

Accounting Policy

Subsidiaries are entities (including structured entities (note (b))) over which the Group has control. The Group controls an entity when the Group is exposed to, or has the rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

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

28. Principal Subsidiaries and Controlled Structured Entities (continued)

(a) Principal subsidiaries

HKEX had direct or indirect interests in the following principal subsidiaries:

Company	Place of incorporation and operation	Issued and fully paid up share/registered capital	Principal activities	Interest held by the Group	
				At 31 Dec 2022	At 31 Dec 2021
Direct principal subsidiaries:					
The Stock Exchange of Hong Kong Limited	Hong Kong	929 ordinary shares (\$929)	Operates the only Stock Exchange in Hong Kong	100%	100%
Hong Kong Futures Exchange Limited	Hong Kong	230 ordinary shares (\$28,750,000)	Operates a futures and options exchange in Hong Kong	100%	100%
Hong Kong Securities Clearing Company Limited	Hong Kong	4 ordinary shares (\$1,060,000,002)	Operates a clearing house for securities traded on the Stock Exchange in Hong Kong, Shanghai Stock Exchange and Shenzhen Stock Exchange in Mainland China through Stock Connect and the central securities depository, and provides custody and nominee services for eligible securities listed in Hong Kong and Mainland China	100%	100%
OTC Clearing Hong Kong Limited (OTC Clear) (note (i))	Hong Kong	24,459 ordinary shares (\$1,636,301,781) 5,117 non-voting ordinary shares (\$518,206,540)	Operates a clearing house for over-the-counter derivatives	83%	76%
HKFE Clearing Corporation Limited (HKCC)	Hong Kong	3,766,700 ordinary shares (\$831,010,000)	Operates a clearing house for derivatives contracts traded on the Futures Exchange	100%	100%
The SEHK Options Clearing House Limited (SEOCH)	Hong Kong	4,000,000 ordinary shares (\$271,000,000)	Operates a clearing house for stock options contracts traded on the Stock Exchange in Hong Kong	100%	100%
Indirect principal subsidiaries:					
The London Metal Exchange	United Kingdom	100 ordinary shares of £ 1 each	Operates an exchange for the trading of base, ferrous and precious metals futures and options contracts	100%	100%
LME Clear Limited	United Kingdom	107,500,001 ordinary shares of £ 1 each	Operates a clearing house for base, ferrous and precious metals futures and options contracts	100%	100%
Qianhai Mercantile Exchange Co.,Ltd. (QME) (note (i))	Mainland China	RMB400,000,000	Operates a commodity trading platform in Mainland China	90%	90%

The above table lists the subsidiaries of the Group which, in the opinion of its directors, principally affect the results or financial position of the Group.

28. Principal Subsidiaries and Controlled Structured Entities (continued)

(a) Principal subsidiaries (continued)

(i) Subsidiaries with non-controlling interests

At 31 December 2022, the Group held 83 per cent (31 December 2021: 76 per cent) interest in OTC Clear, while the remaining 17 per cent (31 December 2021: 24 per cent) interest was held by non-controlling interests. The non-controlling interests do not have voting rights at general meetings of OTC Clear. Details of change in interest held by the Group are set out in note 50.

QME is a limited company established in Mainland China. At 31 December 2022, the Group held 90 per cent (31 December 2021: 90 per cent) interest in QME, while the remaining 10 per cent (31 December 2021: 10 per cent) interest was held by non-controlling interests.

BayConnect is a limited company established in Mainland China. At 31 December 2022, the Group held 51 per cent (31 December 2021: 51 per cent) interest in BayConnect, while the remaining 49 per cent (31 December 2021: 49 per cent) interest was held by non-controlling interests.

Set out below is the financial information related to the non-controlling interests of each subsidiary:

	OTC Clear		QME		BayConnect	
	2022 \$m	2021 \$m	2022 \$m	2021 \$m	2022 \$m	2021 \$m
Amounts allocated to non-controlling interests:						
Profit/(loss) for the year	32	(13)	(16)	(15)	1	(9)
Other comprehensive income/(loss)	-	-	4	(1)	(12)	4
Total comprehensive income/(loss)	32	(13)	(12)	(16)	(11)	(5)
	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Accumulated non-controlling interests	292	182	(56)	(44)	135	146

No summarised financial information of OTC Clear, QME and BayConnect is presented as the non-controlling interests are not material to the Group.

(ii) Significant restrictions

Cash and savings deposits are held by subsidiaries in Mainland China and are subject to exchange control restrictions. The carrying amount of these restricted assets in the consolidated statement of financial position at 31 December 2022 was \$211 million (31 December 2021: \$290 million).

(b) Controlled structured entities

HKEX controls two structured entities which operate in Hong Kong, particulars of which are as follows:

Structured entity	Principal activities
The HKEX Employees' Share Award Scheme (HKEX Employee Share Trust)	Purchases, administers and holds HKEX shares for the Share Award Scheme for the benefit of eligible HKEX employees (note 43)
HKEX Foundation Limited	Charitable foundation

HKEX has the power to direct the relevant activities of the HKEX Employee Share Trust and HKEX Foundation Limited and it has the ability to use its power over the entities to affect its exposure to returns. Therefore, they are considered as controlled structured entities of the Group.

29. Interests in Joint Ventures

Accounting Policy

Interests in joint ventures are accounted for in the consolidated financial statements under the equity method. The entire carrying amount of each investment is tested for impairment in accordance with the accounting policy stated in note 2(d).

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Share of net assets of joint ventures	291	244

(a) Details of the joint ventures were as follows:

Name	Place of business and country of incorporation	Principal activities	% of ownership interest	
			At 31 Dec 2022	At 31 Dec 2021
China Exchanges Services Company Limited (CESC)	Hong Kong	Development of index-linked and equity derivatives products	33%	33%
Bond Connect Company Limited (BCCL)	Hong Kong	Provision of support services related to Bond Connect	40%	40%

In 2012, HKEX, the Shanghai Stock Exchange and the Shenzhen Stock Exchange established a joint venture, CESC, with an aim of developing financial products and related services. CESC is a strategic investment for the Group. It is expected to enhance the competitiveness of Hong Kong, and it aims to promote the development of Mainland China's capital markets and the internationalisation of the Group.

In 2017, HKEX and China Foreign Exchange Trade System (CFETS) established a joint venture, BCCL, which provides support services related to Bond Connect. BCCL is a strategic investment of the Group as it provides services to facilitate the trading of Bond Connect, which enhances HKEX's position in the fixed income market and expands the mutual market programme from equity into bonds.

Set out below is the measurement method and the carrying amounts of the two joint ventures:

Name	Measurement method	Carrying amount	
		At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
CESC	Equity	38	38
BCCL	Equity	253	206
		291	244

The two joint ventures are private companies and no quoted market prices are available for their shares.

No summarised financial information of CESC and BCCL is presented as the joint ventures are not material to the Group.

30. Goodwill and Other Intangible Assets

Accounting Policy

Goodwill

Goodwill arising on the acquisition of subsidiaries is carried at cost as established at the date of acquisition less accumulated impairment losses, if any.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each CGU, or group of CGUs, that is expected to benefit from the synergies of the combination. Each CGU or group of CGUs to which the goodwill is allocated represents the lowest level within the entity at which the goodwill is monitored for internal management purposes (i.e., operating segment level).

Goodwill is not amortised but impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. The carrying value of goodwill is compared to the recoverable amount, which is the higher of value-in-use and the fair value less costs to sell. Any impairment is recognised immediately in the consolidated income statement and is not subsequently reversed.

Tradenames

Tradenames acquired in a business combination are recognised at fair value at the acquisition date. The fair value is based on the discounted estimated royalty payments that are expected to be avoided as a result of the tradenames being owned.

Tradenames arising from the acquisition of LME entities have indefinite useful lives and are carried at cost less accumulated impairment losses, if any.

Tradenames are reviewed annually to determine whether events and circumstances continue to support the indefinite useful life assessment.

Customer relationships

Customer relationships acquired in a business combination are recognised initially at fair value at the acquisition date. The fair value is determined using the multi-period excess earnings method, whereby the asset is valued after deducting a fair return on all other assets that are part of creating the related cash flows. Subsequently, the customer relationships are carried at cost (i.e., the initial fair value) less accumulated amortisation and impairment losses, if any. Amortisation is calculated using the straight-line method over the expected lives of the customer relationships, which are determined to be 8 to 25 years.

30. Goodwill and Other Intangible Assets (continued)

Accounting Policy (continued)

Computer software systems

Development costs that are directly attributable to the design, building and testing of identifiable and unique software products controlled by the Group are recognised as intangible assets if the related software does not form an integral part of the hardware on which it operates (i.e., system software without which the related hardware can still operate) and when the following criteria are met:

- It is technically feasible to complete the software so that it will be available for use;
- Management intends to complete the software and use it;
- There is an ability to use the software;
- It can be demonstrated how the software will generate probable future economic benefits;
- Adequate technical, financial and other resources to complete the development and to use the software are available; and
- The expenditure attributable to the software during its development can be reliably measured.

Other development expenditures that do not meet these criteria are recognised in the consolidated income statement as incurred. Development costs previously recognised in the consolidated income statement are not recognised as an asset in a subsequent period.

Qualifying software system development expenditure and related directly attributable costs capitalised as intangible assets are amortised when they are available for use. They are amortised at rates sufficient to write off their costs net of residual values over their estimated useful lives of three to five years on a straight-line basis. The residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

Costs incurred in configuring or customising software in a cloud computing arrangement can only be recognised as intangible assets if the activities create an intangible asset that the Group controls and the intangible asset meets the recognition criteria. Those costs that do not result in intangible assets are expensed when service is delivered, unless they are incurred for customising the cloud-based software which the promises are not distinct to the cloud computing arrangement, where such costs are amortised over the contract terms of the cloud computing arrangement.

Costs associated with maintaining computer systems and software programmes are recognised in the consolidated income statement as incurred.

The Group's accounting policy for impairment is described in note 2(d).

30. Goodwill and Other Intangible Assets (continued)

	Other Intangible Assets				Total \$m
	Goodwill \$m	Tradenames \$m	Customer relationships \$m	Software systems \$m	
Cost:					
At 1 Jan 2021	13,286	891	3,130	5,205	22,512
Exchange differences	75	5	18	18	116
Additions	-	-	-	904	904
Disposals	-	-	-	(150)	(150)
At 31 Dec 2021	13,361	896	3,148	5,977	23,382
At 1 Jan 2022	13,361	896	3,148	5,977	23,382
Exchange differences	6	1	2	(17)	(8)
Additions	-	-	-	842	842
Disposals	-	-	-	(215)	(215)
At 31 Dec 2022	13,367	897	3,150	6,587	24,001
Accumulated amortisation:					
At 1 Jan 2021	-	-	1,047	2,728	3,775
Exchange differences	-	-	5	11	16
Amortisation	-	-	132	637	769
Disposals	-	-	-	(150)	(150)
At 31 Dec 2021	-	-	1,184	3,226	4,410
At 1 Jan 2022	-	-	1,184	3,226	4,410
Exchange differences	-	-	-	(10)	(10)
Amortisation	-	-	133	715	848
Disposals	-	-	-	(215)	(215)
At 31 Dec 2022	-	-	1,317	3,716	5,033
Net book value:					
At 31 Dec 2022	13,367	897	1,833	2,871	18,968
At 31 Dec 2021	13,361	896	1,964	2,751	18,972
Cost of software systems under development included above:					
At 31 Dec 2022	-	-	-	1,533	1,533
At 31 Dec 2021	-	-	-	1,200	1,200

Amortisation of \$848 million (2021: \$769 million) is included in “depreciation and amortisation” in the consolidated income statement.

Tradenames are regarded as having indefinite useful lives and there is no foreseeable limit to the period over which they are expected to generate cash flows for the Group as it is expected that their values will not be reduced through usage and there are no legal or similar limits on the period for their use.

30. Goodwill and Other Intangible Assets (continued)

Impairment tests for CGUs containing goodwill and intangible assets with indefinite useful lives

Goodwill and tradenames that arose on the acquisition of subsidiaries are allocated to and monitored by management at the operating segment level, which comprises CGUs, or groups of CGUs that are expected to benefit from synergies of combination with the acquired businesses. A summary of the allocation of goodwill and tradenames to these operating segments is as follows:

	At 31 Dec 2022		At 31 Dec 2021	
	Goodwill \$m	Tradenames \$m	Goodwill \$m	Tradenames \$m
Commodities segment	10,379	702	10,368	702
Post Trade segment	2,877	195	2,873	194
Technology segment	111	-	120	-
	13,367	897	13,361	896

The Commodities segment comprises the commodities trading platform in the UK (LME commodities CGU) and the commodities trading platform in Mainland China (China commodities CGU). As the China commodities CGU is still considered at development stage, its valuation has not been taken into account in determining the recoverable amount of the Commodities segment at 31 December 2022.

The recoverable amount of each CGU is determined based on value-in-use calculations. These calculations use cash flow projections based on financial forecasts approved by management covering a five-year period. Cash flows beyond the five-year period are extrapolated using the estimated terminal growth rates stated below. The key assumptions, EBITDA margins, growth rates and discount rates used for value-in-use calculations are as follows:

	At 31 Dec 2022			At 31 Dec 2021		
	Commodities segment	Post Trade segment	Technology segment	Commodities segment	Post Trade segment	Technology segment
EBITDA margin (average of next five years)	59%	45%	30%	61%	44%	30%
Growth rate	3%	3%	3%	3%	3%	3%
Discount rate	8%	8%	13%	8%	8%	13%

Management determined the EBITDA margins based on past performance, expectations regarding market development, and the business model the entity undertakes. The growth rates do not exceed the long-term average growth rate for the business in the markets in which each of the CGUs currently operates. The discount rates used are pre-tax and reflect specific risks relating to each CGU.

The recoverable amounts of the operating segments based on the estimated value-in-use calculations were higher than their carrying amounts (including goodwill and tradenames) at 31 December 2022 and 31 December 2021. Accordingly, no provision for impairment loss for goodwill or tradenames is considered necessary.

If the LME trading fees in the forecast period was 11 per cent lower than forecast, or the discount rate increased to 9 per cent, the recoverable amount of the Commodities segment would be lower than its carrying amount. If LME Clear clearing fees in the forecast period was 15 per cent lower than forecast, or the discount rate increased to 10 per cent, the recoverable amount of LME Clear under the Post Trade segment would be lower than its carrying amount. Except for this, any reasonably possible changes in the key assumptions used in the value-in-use assessment would not affect management's view on impairment at 31 December 2022.

31. Fixed Assets

Accounting Policy

Tangible fixed assets are stated at historical cost less accumulated depreciation and impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the assets.

Tangible fixed assets are depreciated when they are available for use. They are depreciated at rates sufficient to write off their costs net of expected residual values over their estimated useful lives on a straight-line basis. The residual values and useful lives are reviewed at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

The useful lives of major categories of fixed assets are as follows:

Leasehold buildings	Up to 35 years or remaining lives of the leases if shorter
Leasehold improvements	Over the remaining lives of the leases but not exceeding 10 years
Computer trading and clearing systems – hardware and software	3 to 5 years
Other computer hardware and software	3 to 5 years
Furniture, equipment and motor vehicles	3 to 5 years
Data centre facilities and equipment	3 to 20 years

In 2022, the estimated useful lives of the other computer hardware and software within fixed assets were revised from “three years” to “three to five years” to better reflect the useful life of the assets. The effect of the change in accounting estimate during the year was a decrease in depreciation charge of \$31 million.

Expenditure incurred in the construction of leasehold buildings and other directly attributable costs are capitalised when it is probable that future economic benefits associated with the expenditure will flow to the Group and the costs can be measured reliably.

Qualifying software expenditure and related directly attributable costs are capitalised and recognised as a fixed asset if the software forms an integral part of the hardware on which it operates (i.e., operating system software without which the related hardware cannot operate).

Subsequent costs and qualifying development expenditure incurred after the completion of a system are included in the asset’s carrying amount or recognised as a separate asset only when it is probable that future economic benefits associated with that item will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance costs and other subsequent expenditure are charged to the consolidated income statement when incurred.

The Group’s accounting policy for impairment is described in note 2(d).

31. Fixed Assets (continued)

	Leasehold buildings \$m	Computer trading and clearing systems \$m	Other computer hardware and software \$m	Data centre facilities and equipment \$m	Leasehold improvements, furniture, equipment and motor vehicles \$m	Total \$m
Cost:						
At 1 Jan 2021	708	1,210	631	447	1,152	4,148
Exchange differences	-	2	2	-	2	6
Additions	-	43	62	64	54	223
Disposals	-	(92)	(20)	-	(9)	(121)
At 31 Dec 2021	708	1,163	675	511	1,199	4,256
At 1 Jan 2022	708	1,163	675	511	1,199	4,256
Exchange differences	-	(6)	(2)	-	(4)	(12)
Additions	-	4	86	149	103	342
Disposals	-	-	(3)	-	(63)	(66)
At 31 Dec 2022	708	1,161	756	660	1,235	4,520
Accumulated depreciation:						
At 1 Jan 2021	234	913	378	226	740	2,491
Exchange differences	-	2	2	-	2	6
Depreciation	28	59	63	30	95	275
Disposals	-	(92)	(20)	-	(9)	(121)
At 31 Dec 2021	262	882	423	256	828	2,651
At 1 Jan 2022	262	882	423	256	828	2,651
Exchange differences	-	(5)	(1)	-	(4)	(10)
Depreciation	26	74	58	31	116	305
Disposals	-	-	(3)	-	(63)	(66)
At 31 Dec 2022	288	951	477	287	877	2,880
Net book value:						
At 31 Dec 2022	420	210	279	373	358	1,640
At 31 Dec 2021	446	281	252	255	371	1,605
Cost of fixed assets in the course of construction included above:						
At 31 Dec 2022	-	17	72	16	118	223
At 31 Dec 2021	-	19	72	46	50	187

Depreciation of \$305 million (2021: \$275 million) is included in “depreciation and amortisation” in the consolidated income statement.

32. Right-of-use Assets

Accounting Policy

A contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration. The Group recognises a right-of-use asset and a lease liability (note 38) at the lease commencement date.

For an asset leased by the Group, the right-of-use asset is initially measured at cost (which comprises the initial measurement of lease liabilities, initial direct costs, reinstatement costs, any payments made at or before the commencement date less any lease incentives received), and subsequently at cost less any accumulated depreciation and impairment losses. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis.

The Group has applied judgement to determine the lease term of some lease contracts which includes renewal options. The assessment of whether the Group is reasonably certain to exercise such options impacts the lease term, which significantly affects the amount of lease liabilities and right-of-use assets recognised.

Payments associated with short-term leases (i.e., leases with a lease term of 12 months or less) and low value leases are recognised on a straight-line basis as an expense in the consolidated income statement.

	Lease premium for land \$m	Properties \$m	Information technology facilities \$m	Equipment and motor vehicles \$m	Total \$m
At 1 Jan 2021	18	2,082	83	10	2,193
Exchange differences	-	2	-	-	2
Additions of leases	-	10	-	1	11
Depreciation	(1)	(288)	(16)	(5)	(310)
At 31 Dec 2021	17	1,806	67	6	1,896
At 1 Jan 2022	17	1,806	67	6	1,896
Exchange differences	-	(3)	-	-	(3)
Additions of leases	-	17	-	-	17
Depreciation	(1)	(288)	(12)	(5)	(306)
At 31 Dec 2022	16	1,532	55	1	1,604

- (a) Lease premium for land represents prepaid lease payment for a medium-term lease in Hong Kong. In addition, the Group leases various properties, information technology facilities, office equipment and motor vehicles through lease contracts. These contracts are expected to expire within 8 years.
- (b) Depreciation of \$306 million (2021: \$310 million) is included in "depreciation and amortisation" in the consolidated income statement.

33. Margin Deposits, Mainland Security and Settlement Deposits, and Cash Collateral from Clearing Participants

Accounting Policy

The obligation to refund the Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants is disclosed under current liabilities. Non-cash collateral received from Clearing Participants is not recognised on the consolidated statement of financial position.

Margin Funds are established by cash received or receivable from Clearing Participants in respect of margin deposits, Mainland security and settlement deposits, and cash collateral of the five clearing houses to cover their open positions. Part of the Mainland security and settlement deposits is used by HKSCC to satisfy its obligations as a clearing participant of ChinaClear in respect of trades transacted through Stock Connect. These funds are held in segregated accounts of the respective clearing houses for this specified purpose and cannot be used by the Group to finance any other activities.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants comprised:		
SEOCH Clearing Participants' margin deposits	14,878	21,051
HKCC Clearing Participants' margin deposits	74,847	56,840
HKSCC Clearing Participants' margin deposits, Mainland security and settlement deposits, and cash collateral	17,262	24,353
OTC Clear Clearing Participants' margin deposits	15,630	7,211
LME Clear Clearing Participants' margin deposits	105,285	94,081
	227,902	203,536
The margin deposits, Mainland security and settlement deposits, and cash collateral were invested in the following instruments for managing the obligations of the Margin Funds (note 20):		
Cash and cash equivalents (note 21)	147,182	145,586
Financial assets measured at fair value through other comprehensive income (note 23)	11,931	5,283
Financial assets measured at amortised cost (note 24)	58,580	40,371
Settlement Reserve Fund and Settlement Guarantee Fund held by ChinaClear (note 27)	10,206	12,757
Margin receivable from Clearing Participants	3	7
Less: Other financial liabilities of Margin Funds (notes (a) and 36)	-	(468)
	227,902	203,536

(a) Other financial liabilities of Margin Funds represent payable for debt securities traded before 31 December.

34. Accounts Payable, Accruals and Other Liabilities

Accounting Policy

Financial liabilities (other than derivative financial instruments (note 26) and financial guarantee contracts (note 36)) are initially recognised at fair value, which is then treated as their cost after initial recognition, and subsequently carried at amortised cost using the effective interest method.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Payable to ChinaClear and Exchange and Clearing Participants:		
– CNS money obligations payable (note 27(a))	15,527	25,293
– HKD/USD cash collateral for A-shares (note 21(a)(ii))	76	–
– others	735	429
Transaction levy payable to the SFC	157	158
Levies payable to the Accounting and Financial Reporting Council	40	32
Unclaimed dividends (note (a))	448	467
Stamp duty payable to the Collector of Stamp Revenue	660	509
Other payables, accruals and deposits received	1,411	1,447
	19,054	28,335

- (a) Unclaimed dividends represent dividends declared by listed companies, including HKEX, but not yet claimed by their shareholders. During the year, cash dividends of listed companies other than HKEX held by HKSCC Nominees Limited which had remained unclaimed for a period of more than seven years amounting to \$21 million (2021: \$12 million) were forfeited and recognised as sundry income (note 8) and dividends declared by HKEX which were unclaimed over a period of six years amounting to \$26 million (2021: \$12 million) were forfeited and transferred to retained earnings in accordance with HKEX's Articles of Association (note 46).
- (b) CNS money obligations payable mature within two days after the trade date. The majority of the remaining accounts payable, accruals and other liabilities would mature within three months.

35. Deferred Revenue

Accounting Policy

Deferred revenue, or “contract liability” under HKFRS 15, is recognised when the Group receives consideration (or the amount is due) from the customers before the Group transfers goods or services to the customers.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Deferred revenue arising from unsatisfied performance obligations	1,409	1,454
Analysed as:		
Non-current liabilities	333	354
Current liabilities	1,076	1,100
	1,409	1,454

36. Other Financial Liabilities

Accounting Policy

A financial guarantee contract is a contract that requires the Group to make specified payments to reimburse the holder for a loss it incurs because a specified entity or person fails to make payment when due in accordance with the original or modified terms of an undertaking.

Financial guarantee contracts are initially recognised at fair value, and subsequently at the higher of the amount determined in accordance with the expected credit loss model and the amount initially recognised less, where appropriate, the cumulative amount of income recognised in accordance with the principles of HKFRS 15: Revenue from Contracts with Customers.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Financial liabilities of Margin Funds (note 33)	-	468
Financial liabilities of Clearing House Funds (note 37)	20	25
Financial liabilities of Corporate Funds:		
Financial guarantee contract (note (a))	20	20
	40	513

- (a) The amount represents the carrying value of a financial guarantee provided by the Group to the Collector of Stamp Revenue, details of which are disclosed in note 49(b).

37. Clearing House Funds

Accounting Policy

Clearing Participants' cash contributions to Clearing House Funds are included under current liabilities. Non-cash collateral received from Clearing Participants is not recognised on the consolidated statement of financial position.

Clearing House Funds, or default funds, are established under the Clearing House Rules. Assets contributed by the Clearing Participants and the Group are held by the respective clearing houses (together with the accumulated income less related expenses for the clearing houses in Hong Kong) expressly for the purpose of ensuring that the respective clearing houses are able to fulfil their counterparty obligations in the event that one or more of the Clearing Participants fail to meet their obligations to the clearing houses. The HKSCC Guarantee Fund also provides resources to enable HKSCC to discharge its liabilities and obligations if defaulting Clearing Participants deposit defective securities into CCASS. The amounts earmarked for contribution to the Rates and FX Guarantee Resources of OTC Clear and its accumulated investment income was also included in Clearing House Funds for presentation purpose. These funds are held in segregated accounts of the respective clearing houses for this specified purpose and cannot be used by the Group to finance any other activities. Contributions by the clearing houses to their respective default funds (Skin-in-the-Game), together with default fund credits granted to HKSCC and HKCC Participants, are included in Corporate Funds.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
The Clearing House Funds comprised:		
Clearing Participants' cash contributions	21,205	19,182
Contribution to OTC Clear Rates and FX Guarantee Resources	156	156
Clearing House Funds reserves (note 45)	671	612
	22,032	19,950
The Clearing House Funds were invested in the following instruments for managing the obligations of the Funds (note 20):		
Cash and cash equivalents (note 21)	19,021	15,503
Financial assets measured at fair value through other comprehensive income (note 23)	3,031	4,472
Less: Other financial liabilities of Clearing House Funds (note 36)	(20)	(25)
	22,032	19,950
The Clearing House Funds comprised the following Funds:		
HKSCC Guarantee Fund	4,439	4,552
SEOCH Reserve Fund	1,174	1,851
HKCC Reserve Fund	1,483	2,055
OTC Clear Rates and FX Guarantee Fund	3,234	2,778
OTC Clear Rates and FX Guarantee Resources	174	171
LME Clear Default Fund	11,528	8,543
	22,032	19,950

- (a) At 31 December 2022, the Skin-in-the-Game, together with default fund credits granted to HKSCC and HKCC Participants (note 54(c)), amounted to \$1,298 million (31 December 2021: \$1,267 million), and were included in Corporate Funds (note 25(b)).

38. Lease Liabilities

Accounting Policy

A contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration. The Group recognises a right-of-use asset (note 32) and a lease liability at the lease commencement date.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the lessee's incremental borrowing rate is used. Generally, the lessee uses its incremental borrowing rate as the discount rate. The lease liability subsequently increases by the interest cost on the lease liability and is reduced by lease payments made. Each lease payment is allocated between the principal and interest expense.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Total lease liabilities	1,745	2,059
Analysed as:		
Non-current liabilities	1,448	1,760
Current liabilities	297	299
	1,745	2,059

Some lease contracts include an option to renew for an additional period after the end of the initial contract term. Where practicable, the Group seeks to include in all leases such extension options exercisable by the Group to provide operational flexibility. The Group assesses at the lease commencement date the likelihood of exercising the extension options, and only include those reasonably certain to be exercised in the measurement of lease liabilities.

39. Borrowings

Accounting Policy

The potential cash payments related to put options issued by HKEX for the non-voting ordinary shares of a subsidiary held by non-controlling interests are accounted for as financial liabilities under borrowings, which are initially recognised at present value of amount payable by HKEX to acquire the shares held by non-controlling interests with a corresponding charge directly to equity under “reserve relating to written put options to non-controlling interests”.

The written put option financial liabilities are subsequently measured at amortised cost (i.e., the initial fair value plus cumulative amortisation of the difference between the initial fair value and the cash payments related to the put options using the effective interest method). The interest charge arising is recorded under finance costs in the consolidated income statement.

The written put options liabilities are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least twelve months after the end of the reporting period.

	Written put options to non-controlling interests	
	2022 \$m	2021 \$m
At 1 Jan	426	423
Issuance of written put options to non-controlling interests debited against related reserve under equity	61	-
Interest expenses (note 14)	4	3
At 31 Dec	491	426
Analysed as:		
Non-current liabilities	61	86
Current liabilities	430	340
	491	426

The amounts were repayable as follows:

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Within one year	430	340
After one year but within two years	-	86
After two years but within five years	61	-
	491	426

39. Borrowings (continued)

Prior to 2022, OTC Clear issued 3,541 non-voting ordinary shares to certain third party shareholders at a total consideration of \$433 million. In December 2022, a further 1,576 non-voting ordinary shares of OTC Clear were issued at a consideration of \$85 million. As part of the arrangement, put options were written by HKEX to the non-controlling interests to sell part or all of their non-voting ordinary shares in OTC Clear to HKEX at the initial subscription prices less accumulated dividends received by the non-controlling interests. The put options are exercisable by the non-controlling interests at any time following the date falling five years after the shares were issued if the non-controlling interests can demonstrate to HKEX that they have used reasonable endeavours for at least three months to find a suitable purchaser for their shares at a price equal to or more than their fair market values. The carrying amount of written put options represents the present value of the amount payable by HKEX to acquire the shares held by non-controlling interests at the date at which the written put options first become exercisable.

At 31 December 2022, \$340 million of the written put options were exercisable (31 December 2021: \$340 million) and the remaining \$90 million and \$61 million of the options will become exercisable in October 2023 and December 2027 respectively. During the year ended 31 December 2022, none of the written put options was exercised (2021: none).

The effective interest rate of the options before they are exercisable was 4.1 per cent per annum in 2022 (2021: 3.0 per cent).

40. Provisions

Accounting Policy

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate of the amount can be made. The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period.

	Reinstatement costs \$m	Employee benefit costs \$m	Total \$m
At 1 Jan 2022	101	79	180
Provision for the year	-	129	129
Amount used during the year	-	(138)	(138)
Amount paid during the year	-	(12)	(12)
Exchange differences	(2)	-	(2)
At 31 Dec 2022	99	58	157
Analysed as:			
Non-current liabilities	90	-	90
Current liabilities	9	58	67
	99	58	157

- (a) The provision for reinstatement costs represents the estimated costs of restoring the leased office premises to their original state upon the expiry of the leases. The leases are expected to expire within 8 years.
- (b) The provision for employee benefit costs represents unused annual leave that has been accumulated at the end of the reporting period. It is expected to be fully utilised in the coming twelve months.

41. Deferred Taxation

Accounting Policy

Deferred tax is recognised, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements, except that deferred tax liabilities are not recognised if they arise from the initial recognition of goodwill. Deferred tax is determined using tax rates that have been enacted or substantively enacted by the end of the reporting period and are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences or the current tax losses can be utilised.

- (a) The movements on the net deferred tax liabilities/(assets) were as follows:

	Accelerated tax depreciation		Intangible assets ¹		Tax losses		Employee benefits		Leases		Financial assets		Total	
	2022 \$m	2021 \$m	2022 \$m	2021 \$m	2022 \$m	2021 \$m	2022 \$m	2021 \$m	2022 \$m	2021 \$m	2022 \$m	2021 \$m	2022 \$m	2021 \$m
At 1 Jan	407	382	705	566	(13)	(19)	(23)	(29)	(1)	(1)	32	5	1,107	904
Exchange differences	-	-	1	4	-	-	-	-	-	-	(2)	-	(1)	4
(Credited)/charged to the consolidated income statement (note 17(a))	(12)	25	(26)	135	2	6	4	4	-	-	-	28	(32)	198
Credited to other comprehensive income	-	-	-	-	-	-	-	-	-	-	(59)	(1)	(59)	(1)
Charged directly to retained earnings	-	-	-	-	-	-	4	2	-	-	-	-	4	2
At 31 Dec	395	407	680	705	(11)	(13)	(15)	(23)	(1)	(1)	(29)	32	1,019	1,107

1 Intangible assets include customer relationships and tradenames.

- (b) The Group had unrecognised tax losses of \$1,852 million at 31 December 2022 (31 December 2021: \$1,810 million) that may be carried forward for offsetting against future taxable income. Tax losses of PRC entities amounting to \$728 million (31 December 2021: \$772 million) will expire 5 years after the losses were incurred, and the remaining tax losses have no expiry date and can be carried forward indefinitely.

41. Deferred Taxation (continued)

- (c) Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when the deferred taxes relate to tax levied by the same taxation authority on the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis. The following amounts, determined after appropriate offsetting, are shown in the consolidated statement of financial position:

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Deferred tax assets	(53)	(25)
Deferred tax liabilities	1,072	1,132
	1,019	1,107

- (d) The analysis of deferred tax (assets)/liabilities is as follows:

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Deferred tax assets		
Amounts to be recovered after more than 12 months	(8)	(23)
Amounts to be recovered within 12 months	(45)	(2)
	(53)	(25)
Deferred tax liabilities		
Amounts to be settled after more than 12 months	1,057	1,114
Amounts to be settled within 12 months	15	18
	1,072	1,132
Net deferred tax liabilities	1,019	1,107

42. Share Capital and Shares Held for Share Award Scheme

Accounting Policy

Shares

Ordinary shares are classified as equity.

Shares held for Share Award Scheme

Where HKEX shares are acquired by the Share Award Scheme from the market or by electing for scrip in lieu of cash dividends, the total consideration of shares acquired from the market (including any directly attributable incremental costs) or under the scrip dividend scheme is presented as Shares held for Share Award Scheme and deducted from total equity.

Upon vesting, the related costs of the vested Awarded Shares purchased from the market and shares acquired from reinvesting dividends or received under the scrip dividend scheme (dividend shares) are credited to Shares held for Share Award Scheme, with a corresponding decrease in employee share-based compensation reserve for Awarded Shares, and decrease in retained earnings for dividend shares.

Issued and fully paid – ordinary shares with no par:

	Number of shares '000	Number of shares held for Share Award Scheme ¹ '000	Share capital \$m	Shares held for Share Award Scheme \$m	Total \$m
At 1 Jan 2021	1,267,837	(1,983)	31,891	(485)	31,406
Shares purchased for Share Award Scheme (note (a))	–	(1,455)	–	(681)	(681)
Vesting of shares of Share Award Scheme (note (b))	–	1,067	5	265	270
At 31 Dec 2021	1,267,837	(2,371)	31,896	(901)	30,995
At 1 Jan 2022	1,267,837	(2,371)	31,896	(901)	30,995
Shares purchased for Share Award Scheme (note (a))	–	(1,040)	–	(350)	(350)
Vesting of shares of Share Award Scheme (note (b))	–	1,005	22	333	355
At 31 Dec 2022	1,267,837	(2,406)	31,918	(918)	31,000

1 Excluding shares vested but not yet transferred to awardees of 52,772 shares at 31 December 2022 (31 December 2021: 33,763 shares)

- (a) During the year, the Share Award Scheme (note 43) acquired 1,040,416 HKEX shares (2021: 1,454,300 shares) through purchases on the open market. The total amount paid to acquire the shares during the year was \$350 million (2021: \$681 million).
- (b) During the year, a total of 1,005,134 HKEX shares (2021: 1,066,959 shares) were vested. The total cost of the vested shares was \$333 million (2021: \$265 million). In 2022, \$22 million (2021: \$5 million) was credited to share capital in respect of vesting of certain shares whose fair values were higher than the costs.

43. Employee Share-based Arrangements

Accounting Policy

The Group operates the Share Award Scheme (the Scheme), which is an equity-settled share-based compensation plan under which Awarded Shares are granted to employees of the Group (including the Executive Director) as part of their remuneration package.

The fair value of the Awarded Shares is determined by reference to the cost of purchase of the Awarded Shares, or the market value of the shares on grant date. The amount to be expensed as share-based compensation expenses is determined by reference to the fair value of the Awarded Shares granted, taking into account all non-vesting conditions associated with the grants on grant date. The total expense is recognised over the relevant vesting periods (or on the grant date if the shares vest immediately), with a corresponding credit to an employee share-based compensation reserve under equity.

For those Awarded Shares which are amortised over the vesting periods, the Group revises its estimates of the number of Awarded Shares that are expected to ultimately vest based on the vesting conditions at the end of each reporting period. Any resulting adjustment to the cumulative amount recognised in prior years is charged/credited to employee share-based compensation expense in the current year, with a corresponding adjustment to the employee share-based compensation reserve.

The movements of employee share-based compensation reserve were as follows:

	2022 \$m	2021 \$m
At 1 Jan	306	232
Employee share-based compensation benefits (note 10)	380	324
Vesting of shares of Share Award Scheme	(340)	(250)
At 31 Dec	346	306

The Scheme allows shares to be granted to employees of the Group, including the Executive Director (Employee Share Awards).

The awarded amounts for the purchase of shares (Awarded Shares) to eligible employees and/or selected senior executives (Awarded Sum) are approved by the Board. The Awarded Shares are either purchased from the market or are awarded by regranting the forfeited or unallocated shares held by the Scheme. Before vesting, the Awarded Shares are held in a trust set up by the Scheme.

Further shares are derived from dividends payable on the Awarded Shares held in the Scheme from reinvesting dividends or scrip shares received under the scrip dividend scheme (dividend shares), and are allocated to the awardees on a pro rata basis and have the same vesting periods as the related Awarded Shares.

43. Employee Share-based Arrangements (continued)

(a) Employee Share Awards

Employee Share Awards vest progressively over the vesting period after the awards are granted, provided that the relevant awardee (i) remains employed by the Group (ii) is made redundant or (iii) is deemed to be a “good leaver”, and Employee Share Awards vest immediately if the relevant awardee retires on reaching normal retirement age or suffers from permanent disability. Unless otherwise determined by the Board, the Remuneration Committee or the Chief Executive Officer, the vesting period of Employee Share Awards granted is three years, and the shares will be vested in two equal tranches from the second to the third year after the shares are granted.

For awardees who do not meet the vesting criteria, the unvested shares are forfeited. The forfeited shares are held by the trustee of the Scheme who may award such shares to the other awardees, taking into consideration recommendations of the Board.

Details of Awarded Shares awarded during 2021 and 2022

Date of award	Number of Awarded Shares awarded	Average fair value per share \$	Vesting period
13 May 2021	600	442.39	31 Mar 2022 – 31 Mar 2023
13 May 2021	727,088 ¹	439.26	9 Dec 2022 – 9 Dec 2023
2 Jun 2021	211,756 ²	484.20	24 May 2022 – 24 May 2023
6 Sep 2021	5,300	493.22	6 Feb 2022 – 11 Feb 2024
29 Sep 2021	6,100	474.48	13 Jan 2022 – 13 Jan 2024
30 Sep 2021	200	478.82	11 Feb 2022 – 11 Feb 2024
30 Sep 2021	400	479.36	13 Jan 2022 – 13 Jan 2024
12 Nov 2021	900	466.12	27 Mar 2022 – 24 Mar 2024
30 Nov 2021	21,200	435.15	30 Nov 2023 – 30 Nov 2024
25 Feb 2022	1,600	388.90	17 May 2022 – 17 May 2024
25 Feb 2022	9,300	388.86	10 Jan 2023 – 10 Jan 2025
3 Mar 2022	42,600	366.83	28 Feb 2025
9 Mar 2022	827,630 ^{1,2}	456.07	7 Dec 2023 – 7 Dec 2024
29 Apr 2022	8,100	338.55	1 Sep 2022 – 1 Sep 2024
9 Jun 2022	21,800	357.93	13 Jan 2023 – 31 Dec 2025
13 Jun 2022	5,400	342.99	7 Feb 2023 – 11 Feb 2025
15 Jul 2022	8,400	357.26	15 Mar 2023 – 15 Mar 2025
18 Aug 2022	500	334.65	4 Sep 2022 – 4 Sep 2023
31 Aug 2022	600	319.44	1 Apr 2023 – 1 Apr 2025
1 Dec 2022	23,600	321.80	25 Nov 2024 – 25 Nov 2025
2 Dec 2022	1,300	316.30	1 Sep 2023 – 1 Sep 2025
28 Dec 2022	2,042	341.06	25 Nov 2024 – 25 Nov 2025

1 261,516 and 162,003 shares were awarded by re-granting the forfeited or unallocated shares held by the Scheme on 13 May 2021 and 9 March 2022 respectively.

2 211,756 and 84,603 shares were awarded to HKEX's Chief Executive Officer on 2 June 2021 and 9 March 2022 respectively.

In addition to the above, total Awarded Sum amounting to \$339 million were also granted to selected employees in December 2022. At 31 December 2022, the shares had not yet been awarded to the employees.

Details of Awarded Shares (excluding dividend shares) vested during 2021 and 2022

During the year, 962,014 HKEX shares (2021: 1,011,400 shares) were vested at an aggregate fair value of \$340 million (2021: \$250 million), of which 105,878 shares (2021: Nil) were for the HKEX's Chief Executive Officer.

43. Employee Share-based Arrangements (continued)

(b) Summary of Awarded Shares awarded and dividend shares

Movements in number of Awarded Shares awarded and dividend shares

	2022	2021
Number of Awarded Shares and dividend shares:		
Outstanding at 1 Jan	1,506,211	1,722,044
Awarded ¹	952,872	973,544
Forfeited	(131,916)	(155,227)
Vested	(962,014)	(1,011,400)
Dividend shares:		
– allocated to awardees	49,322	37,818
– allocated to awardees but subsequently forfeited	(3,450)	(5,009)
– vested ²	(43,120)	(55,559)
Outstanding at 31 Dec	1,367,905	1,506,211

1 Weighted average fair value per share was \$442.64 (2021: \$449.51).

2 In 2022, 43,120 dividend shares (2021: 55,559 shares), of which 2,146 shares (2021: Nil) were for the HKEX's Chief Executive Officer, at a cost of \$15 million (2021: \$20 million) were vested.

Remaining vesting periods or performance period of Awarded Shares awarded and dividend shares outstanding at 31 December

	At 31 Dec 2022		At 31 Dec 2021	
	Remaining vesting or performance period	Number of Awarded Shares and dividend shares outstanding	Remaining vesting or performance period	Number of Awarded Shares and dividend shares outstanding
Shares awarded in:				
2018	–	–	0.05 year	117
2019	–	–	0.19 year to 0.95 year	497,700
2020	0.11 year to 1.11 years	19,300	0.11 year to 2.11 years	38,600
2021	0.04 year to 1.92 years	442,089	0.04 year to 2.92 years	939,430
2022	0.03 year to 3.00 years	873,400	–	–
Dividend shares	0.03 year to 3.00 years	33,116	0.05 year to 2.11 years	30,364
		1,367,905		1,506,211

(c) Total number of shares held by Share Award Scheme

	At 31 Dec 2022	At 31 Dec 2021
Number of Awarded Shares and dividend shares (note (b))	1,367,905	1,506,211
Forfeited or unallocated shares ¹	1,038,278	864,690
Number of shares held by Share Award Scheme ² (note 42)	2,406,183	2,370,901

1 The shares will be granted to eligible employees in future.

2 Excluding shares vested but not yet transferred to awardees of 52,772 shares at 31 December 2022 (31 December 2021: 33,763 shares).

44. Hedging and Revaluation Reserves

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Hedging reserve (note (a))	10	(2)
Revaluation reserve (note (b))	(276)	17
	(266)	15

(a) Hedging reserve

Accounting Policy

The Group designates certain bank balances and forward foreign exchange contracts as hedges of foreign exchange risks associated with the cash flows of highly probable forecast transactions (cash flow hedges).

The Group documents at the inception of the transaction the relationship between hedging instruments and hedged items, as well as its risk management objectives and strategies for undertaking various hedge transactions. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the hedging instruments have been and will continue to be highly effective in offsetting changes in cash flows of hedged items.

The changes in the fair value relating to the effective portion of hedging instruments that are designated and qualified as cash flow hedges is recognised in other comprehensive income and accumulated in hedging reserve in equity. The gains or losses relating to the ineffective portion are recognised immediately in the consolidated income statement.

Amounts accumulated in hedging reserve are reclassified to the consolidated income statement in the periods when the hedged item is recognised in the consolidated income statement. Where the hedged item subsequently results in the recognition of a non-financial asset (such as fixed assets), the amounts accumulated in hedging reserve are reclassified and included in the initial measurement of the cost of the asset.

When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in hedging reserve at that time remains in hedging reserve and is recognised when the forecast transaction is ultimately recognised in the consolidated income statement. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that is retained in hedging reserve is immediately reclassified to the consolidated income statement.

44. Hedging and Revaluation Reserves (continued)

(a) Hedging reserve (continued)

The movements of hedging reserve were as follows:

	2022 \$m	2021 \$m
At 1 Jan	(2)	–
Cash flow hedges:		
– net fair value losses of hedging instruments recognised in other comprehensive income	(33)	(7)
– reclassified to the consolidated income statement as staff costs and related expenses (note (i))	30	3
– reclassified to intangible assets (note (i))	18	2
– deferred tax charged to other comprehensive income	(3)	–
At 31 Dec	10	(2)

- (i) The functional currencies of LME and LME Clear are United States Dollars (USD). To hedge the foreign currency exposure of their operating expenses, these entities have designated certain bank balances of Pound sterling (GBP) and forward foreign exchange contracts as cash flow hedges for hedging the foreign exchange risk of their staff costs and related expenses, information technology and computer maintenance expenses and intangible assets.

Further details of the hedging instruments that have been designated as cash flow hedge of the Group's highly probable forecast transactions at the end of the reporting period are as follows:

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Cash balances		
Carrying amount	–	341
Hedge ratio	–	1:1
Change in value of outstanding hedging instruments since inception of the hedge	–	(2)
Change in value of hedged item used to determine hedge ineffectiveness	–	2
Weighted average hedged rate for outstanding hedging instruments (GBP vs USD)	–	1.36
Forward foreign exchange contracts		
Carrying amount	13	–
Notional amount	GBP 97 million	–
Maturity date	0 – 12 months	–
Hedge ratio	1:1	–
Change in value of outstanding hedging instruments since inception of the hedge	13	–
Change in value of hedged item used to determine hedge ineffectiveness	(13)	–
Weighted average hedged rate for outstanding hedging instruments (GBP vs USD)	1.19	–

- (ii) The total amounts arising from ineffective cash flow hedges recognised in the consolidated income statement of the Group during the year amounted to \$Nil (2021: \$Nil).

44. Hedging and Revaluation Reserves (continued)

(b) Revaluation reserve

	2022 \$m	2021 \$m
At 1 Jan	17	25
Changes in fair value of financial assets measured at fair value through other comprehensive income	(355)	(9)
Deferred tax on financial assets measured at fair value through other comprehensive income	62	1
At 31 Dec	(276)	17

45. Designated Reserves

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Clearing House Funds reserves (notes (a) and 37)	671	612
PRC statutory reserve (note (b))	15	11
	686	623

(a) Clearing House Funds reserves

	HKSCC Guarantee Fund reserve \$m	SEOCH Reserve Fund reserve \$m	HKCC Reserve Fund reserve \$m	OTC Clear Rates and FX Guarantee Fund reserve \$m	OTC Clear Rates and FX Guarantee Resources reserve \$m	Total \$m
At 1 Jan 2021	185	113	244	71	15	628
(Deficit)/surplus of net investment income net of expenses of Clearing House Funds transfer (to)/from retained earnings (note 46)	(20)	1	-	3	-	(16)
At 31 Dec 2021	165	114	244	74	15	612
At 1 Jan 2022	165	114	244	74	15	612
Surplus of net investment income net of expenses of Clearing House Funds transfer from retained earnings (note 46)	10	3	7	36	3	59
At 31 Dec 2022	175	117	251	110	18	671

(b) PRC statutory reserve

	2022 \$m	2021 \$m
At 1 Jan	11	-
Transfer from retained earnings (note 46)	4	11
At 31 Dec	15	11

Upon relevant PRC laws, each of the subsidiaries in Mainland China is required to appropriate 10 per cent of its net profit to a non-distributable statutory reserve until such reserve reaches 50 per cent of the subsidiary's registered capital. The statutory reserve can be utilised, upon approval by the shareholders of the subsidiary, to offset accumulated losses or to increase the paid-in capital of the subsidiary, provided that the balance of the reserve after transfer to paid-up capital is not less than 25 per cent of the subsidiary's registered capital.

46. Retained Earnings

	2022 \$m	2021 \$m
At 1 Jan	18,173	17,214
Profit attributable to shareholders	10,078	12,535
Transfer (to)/from Clearing House Funds reserves (note 45(a))	(59)	16
Transfer to PRC statutory reserve (note 45(b))	(4)	(11)
Dividends:		
2021/2020 second interim dividend	(5,290)	(5,646)
2022/2021 first interim dividend	(4,366)	(5,934)
Unclaimed HKEX dividends forfeited (note 34(a))	26	12
Vesting of shares of Share Award Scheme	(15)	(20)
UK tax relating to Share Award Scheme	(3)	7
Change in ownership interest in a subsidiary (note 50)	7	-
At 31 Dec	18,547	18,173

47. Notes to the Consolidated Statement of Cash Flows

(a) Reconciliation of profit before taxation to net cash inflow from principal operating activities

	2022 \$m	2021 \$m
Profit before taxation	11,659	14,841
Adjustments for:		
Net interest income	(1,880)	(766)
Net fair value losses/(gains) on financial assets mandatorily measured at fair value through profit or loss	507	(485)
Finance costs	138	154
Depreciation and amortisation	1,459	1,354
Employee share-based compensation benefits	380	324
(Write back of provision for)/provision for impairment losses of receivables	(2)	7
Share of profits less losses of joint ventures	(71)	(80)
Other non-cash adjustments	(51)	(43)
Net increase in financial assets of Margin Funds	(24,253)	(17,005)
Net increase in financial liabilities of Margin Funds	23,898	16,996
Net (increase)/decrease in Clearing House Fund financial assets	(2,077)	1,276
Net increase/(decrease) in Clearing House Fund financial liabilities	2,018	(1,260)
Decrease/(increase) in cash prepayments and collateral for A-shares	4,562	(1,160)
Increase in Corporate Funds used for supporting Skin-in-the-Game and default fund credits	(31)	(26)
Decrease in accounts receivable, prepayments and deposits	4,869	15,389
Decrease in other liabilities	(9,162)	(14,197)
Net cash inflow from principal operations	11,963	15,319
Interest received from financial assets measured at amortised cost and cash and cash equivalents	3,944	775
Interest paid to Participants	(2,271)	(47)
Income tax paid	(574)	(2,150)
Net cash inflow from principal operating activities	13,062	13,897

47. Notes to the Consolidated Statement of Cash Flows (continued)

(b) Reconciliation of liabilities arising from financing activities

	Borrowings \$m	Lease liabilities \$m
At 1 Jan 2021	423	2,358
Additions of leases	–	10
Interest on borrowings (note 14)	3	–
Interest on lease liabilities (note 14)	–	79
Cash flows		
– Payments of capital elements of lease liabilities	–	(310)
– Payments of interest elements of lease liabilities	–	(79)
Exchange differences	–	1
At 31 Dec 2021	426	2,059
At 1 Jan 2022	426	2,059
Issuance of written put options (note 39)	61	–
Additions of leases	–	17
Interest on borrowings (note 14)	4	–
Interest on lease liabilities (note 14)	–	68
Cash flows		
– Payments of capital elements of lease liabilities	–	(309)
– Payments of interest elements of lease liabilities	–	(68)
Exchange differences	–	(22)
At 31 Dec 2022	491	1,745

(c) Cash outflow for leases

Amounts for leases included in the consolidated statement of cash flow comprise the following:

	2022 \$m	2021 \$m
Within operating cash flows	(1)	(1)
Within financing cash flows	(377)	(389)
Total lease rental paid	(378)	(390)

48. Commitments

Commitments in respect of capital expenditures

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Contracted but not provided for:		
– fixed assets	22	21
– intangible assets	159	175
Authorised but not contracted for:		
– fixed assets	323	361
– intangible assets	520	258
	1,024	815

49. Contingent Liabilities

Accounting Policy

A contingent liability is a possible obligation that arises from past events and whose existence will only be confirmed by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group. It can also be a present obligation arising from past events that is not recognised because it is not probable that outflow of economic resources will be required or the amount of obligation cannot be measured reliably.

A contingent liability is not recognised but is disclosed in the consolidated financial statements. When a change in the probability of an outflow occurs so that outflow is probable or when the amount of obligation becomes reliably measurable, it will then be recognised as a provision.

At 31 December 2022, the Group's material contingent liabilities were as follows:

- (a) The Group had a contingent liability in respect of potential calls to be made by the SFC to replenish all or part of compensation less recoveries paid by the Unified Exchange Compensation Fund established under the repealed Securities Ordinance up to an amount not exceeding \$71 million (31 December 2021: \$71 million). Up to 31 December 2022, no calls had been made by the SFC in this connection.
- (b) The Group had undertaken to indemnify the Collector of Stamp Revenue against any underpayment of stamp duty by its Participants of up to \$200,000 for each Participant (note 36(a)). In the unlikely event that all of its 598 trading Participants (31 December 2021: 638) covered by the indemnity at 31 December 2022 defaulted, the maximum liability of the Group under the indemnity would amount to \$120 million (31 December 2021: \$128 million).
- (c) HKEX had given an undertaking in favour of HKSCC to contribute up to \$50 million in the event of HKSCC being wound up while it is a wholly-owned subsidiary of HKEX or within one year after HKSCC ceases to be a wholly-owned subsidiary of HKEX, for payment of the liabilities of HKSCC contracted before HKSCC ceases to be a wholly-owned subsidiary of HKEX, and for the costs of winding up.

49. Contingent Liabilities (continued)

(d) Material litigation

At 31 December 2022, the LME and LME Clear have been named as defendants in two judicial review claims filed in the English High Court.

On 8 March 2022, the LME, in consultation with LME Clear, suspended trading in all nickel contracts with effect from 08:15 UK time, and cancelled all trades executed on or after 00:00 UK time on 8 March. This decision to suspend trading was taken because the nickel market had become disorderly. Cancellations were made retrospectively to take the market back to the last point in time at which the LME could be confident that the market was operating in an orderly manner. It should be stressed that the LME always acted in the interests of the market as a whole.

The claims seek to challenge the LME's decision to cancel the claimants' alleged trades in nickel contracts executed on or after 00:00 UK time on 8 March 2022. The claimants have alleged that this was unlawful on public law grounds and/or constituted a violation of their human rights. The LME management is of the view that the claims are without merit and the LME is contesting them vigorously.

Based on the progress of the judicial review process, the LME does not currently have sufficient information to estimate the financial effect (if any) of the claims, the timing of the ultimate resolution of the proceedings, or what the eventual outcomes might be. Accordingly, no provision has been made in these consolidated financial statements.

50. Transaction with Non-Controlling Interests

Accounting Policy

Transactions with non-controlling interests that do not result in change of control are accounted for as equity transactions. The difference between the fair value of any consideration paid/received and the relevant share of the carrying value of net assets of the subsidiary acquired/disposed of is recorded in retained earnings.

(a) Acquisition of additional interest in OTC Clear

	2022 \$m
Carrying amount of non-controlling interests acquired	(722)
Consideration paid	715
Surplus credited to retained earnings (note 46)	(7)

In December 2022, OTC Clear issued 13,272 ordinary shares to HKEX at a consideration of \$715 million and 1,576 non-voting ordinary shares to non-controlling interests at a consideration of \$85 million. After the issue, the Group's interest in OTC Clear increased to 83 per cent while the interest held by non-controlling interests dropped to 17 per cent.

51. Connected Transactions and Material Related Party Transactions

(a) Connected transactions and related party transactions

Certain Directors of HKEX may be directors and/or shareholders of (i) Exchange Participants of the Stock Exchange, Futures Exchange, the LME and QME (Exchange Participants) and Clearing Participants of HKSCC, HKCC, SECH, LME Clear and OTC Clear (Clearing Participants); (ii) companies listed on the Stock Exchange; and (iii) Exchange Participants for buying shares on behalf of HKSCC. Securities and derivatives contracts traded by, and fees levied on, these Exchange Participants and Clearing Participants, fees levied on these listed companies and fees paid to these Exchange Participants for buying shares on behalf of HKSCC are all undertaken in the ordinary course of business of the Group on the standard terms and conditions applicable to all other Exchange Participants, Clearing Participants, listed companies and Exchange Participants for buying shares on behalf of HKSCC.

(b) Material related party transactions

In addition to the above and those disclosed elsewhere in these consolidated financial statements, the Group entered into the following material related party transactions:

(i) Key management personnel compensation

	2022 \$m	2021 \$m
Salaries and other short-term employee benefits	188	173
Employee share-based compensation benefits	160	104
Retirement benefit costs	9	7
	357	284

(ii) Post-retirement benefit plans

The Group has sponsored an ORSO Plan and the LME Pension Scheme as its post-retirement benefit plans (note 10(a)).

(iii) Save as aforesaid, the Group has entered into other transactions in the ordinary course of business with companies that are related parties but the amounts were immaterial.

52. Pledges of Assets

LME Clear receives securities and gold bullion as non-cash collateral for margins posted by its Clearing Participants. The total fair value of this non-cash collateral was US\$619 million (HK\$4,831 million) at 31 December 2022 (31 December 2021: US\$971 million (HK\$7,570 million)). LME Clear is obliged to return this non-cash collateral upon request when the Clearing Participants' collateral obligations have been substituted with cash collateral or otherwise discharged. LME Clear is permitted to sell or pledge such collateral in the event of the default of a Clearing Participant. Any non-cash collateral lodged at central securities depositories or custodians is subject to a lien or pledge for the services they provide in respect of the collateral held.

LME Clear also holds securities as collateral in respect of its investments in overnight triparty reverse repurchase agreements under which it is obliged to return equivalent securities to the counterparties at maturity of the reverse repurchase agreements. The fair value of this collateral was US\$14,982 million (HK\$116,934 million) at 31 December 2022 (31 December 2021: US\$13,513 million (HK\$105,351 million)). Such non-cash collateral, together with certain financial assets amounting to US\$923 million (HK\$7,206 million) at 31 December 2022 (31 December 2021: US\$400 million (HK\$3,117 million)), have been pledged to LME Clear's investment agent and custodian banks under security arrangements for the settlement and depository services they provide in respect of the collateral and investments held.

Non-cash collateral is not recorded on the consolidated statement of financial position of the Group.

53. Capital Management

The Group's objectives when managing capital are:

- To safeguard the Group's ability to continue as a going concern, so that it continues to provide returns for shareholders and benefits for other stakeholders;
- To support the Group's stability and growth;
- To provide capital for the purpose of strengthening the Group's risk management capability; and
- To ensure that the Group's regulated entities comply with their respective regulatory capital requirements.

The Group actively and regularly reviews and manages its capital structure to ensure an optimal capital structure and shareholder returns. The Group takes into consideration the expected capital requirements and capital efficiency, regulatory capital requirements of its regulated entities, prevailing and projected profitability, projected operating cash flows, projected capital expenditures and projected strategic investment opportunities.

The Group has a number of regulated entities that are subject to regulatory capital requirements set by the respective regulators. The regulatory capital requirements of the Group's subsidiaries at 31 December 2022 are summarised as follows:

Subsidiaries	Regulatory authority	Regulatory capital requirements
Stock Exchange, Futures Exchange	SFC, Hong Kong	Maintain at all times net current assets funded by equity sufficient to cover each subsidiary's projected total operating expenses for at least the following six months of \$1,878 million (31 December 2021: \$1,674 million), and net current assets funded by equity or long-term loans from HKEX sufficient to cover its projected total operating expenses for at least the following twelve months of \$3,756 million (31 December 2021: \$3,348 million).
HKSCC, HKCC, SEOCH, OTC Clear	SFC, Hong Kong	Maintain at all times liquid net assets funded by equity (i.e., liquid assets of Corporate Funds (excluding those solely used to support Skin-in-the-Game and default fund credits of Clearing House Funds) minus non-current liabilities) sufficient to cover each subsidiary's projected total operating expenses for at least the following six months of \$853 million (31 December 2021: \$809 million), and net current assets funded by equity or long-term loans from HKEX (excluding those solely used to support Skin-in-the-Game and default fund credits of Clearing House Funds) sufficient to cover its projected total operating expenses for at least the following twelve months of \$1,706 million (31 December 2021: \$1,618 million).
LME	The Financial Conduct Authority, UK	Maintain at all times net capital and liquid financial resources of at least the costs of orderly closure plus a risk based capital charge, amounting to US\$78.7 million (HK\$614 million) (31 December 2021: HK\$635 million).
LME Clear	Bank of England, UK	Maintain cash or highly liquid financial instruments with minimal market and credit risk, amounting to US\$100.5 million (HK\$784 million) (31 December 2021: HK\$768 million), plus 10 per cent minimum reporting threshold of US\$10.1 million (HK\$79 million) (31 December 2021: HK\$77 million) and US\$25.1 million (HK\$196 million) (31 December 2021: HK\$192 million) financial resources available to set off losses in the event of default (Skin-in-the-Game). Capital resources must be in the form of share capital, retained earnings and reserves, reduced by intangible assets and retained losses.

At 31 December 2022, the Group had set aside \$4,000 million (31 December 2021: \$4,000 million) of shareholders' funds for the purpose of supporting the risk management regime of the clearing houses in their roles as central counterparties, of which \$2,160 million (31 December 2021: \$2,160 million) had been injected into HKSCC, HKCC and SEOCH as share capital.

53. Capital Management (continued)

All regulated entities of the Group had adequate capital to meet their regulatory requirements at 31 December 2022 and 31 December 2021.

The Group adopts a dividend policy of providing shareholders with regular dividends with a normal target payout ratio of 90 per cent of the Group's profit of the year (excluding the financial results of HKEX Foundation Limited) and it may also offer a scrip dividend alternative to shareholders if considered appropriate. The consideration of share capital issued under the scrip dividend scheme (if any), together with the 10 per cent of the profit not declared as dividends, are retained as capital of the Group for future use.

The Group monitors capital on the basis of its gross gearing ratio (i.e., gross debt divided by adjusted capital) and net gearing ratio (i.e., net debt divided by adjusted capital). For this purpose, the Group defines gross debt as the total borrowings (excluding lease liabilities), net debt as gross debt less cash and cash equivalents of Corporate Funds (excluding those reserved for supporting Skin-in-the-Game and default fund credits of Clearing House Funds), and adjusted capital as all components of equity attributable to shareholders of HKEX other than designated reserves. The Group's strategy is to maintain the ratios at less than 50 per cent.

	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Borrowings (note 39)	491	426
Less:		
Cash and cash equivalents of Corporate Funds (note 21)	15,952	12,900
Less: Amounts reserved for supporting Skin-in-the-Game and default fund credits of Clearing House Funds (note 21(b))	(694)	(502)
	(15,258)	(12,398)
Net debt (note (a))	-	-
Equity attributable to shareholders of HKEX	49,728	49,626
Less: Designated reserves (note 45)	(686)	(623)
Adjusted capital	49,042	49,003
Gross gearing ratio	1%	1%
Net gearing ratio	0%	0%

- (a) Net debt is zero when the amount of cash and cash equivalents of Corporate Funds (excluding those reserved for supporting Skin-in-the-Game and default fund credits of Clearing House Funds) is higher than gross debt.

54. Financial Risk Management

The Group's activities expose it to a variety of financial risks: market risk (including foreign exchange risk, price risk and interest rate risk), liquidity risk and credit risk. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Group's performance.

(a) Market risk

Nature of risk

Market risk is the risk of loss arising from movements in observable market variables such as foreign exchange rates, equity prices and interest rates. The Group is exposed to market risk primarily through its financial assets and financial liabilities (including borrowings and lease liabilities). The Group is also exposed to credit-contingent market risk arising from the default of Clearing Participants, which is further elaborated under credit risk (note (c)).

Risk management

The Group's investment policy is to prudently invest all funds managed by the Group in a manner which will satisfy liquidity requirements, safeguard financial assets and manage risks while optimising return on investments.

Investment and fund management by HKEX and the Group's subsidiaries is governed by the HKEX Group Investment Policies, which are approved by the Board and reviewed regularly. Investment restrictions and guidelines set out in the Investment Policies form an integral part of risk control. Fund-specific restrictions and guidelines are set according to the investment objectives of each fund (i.e., Corporate Funds, Clearing House Funds, Margin Funds and Cash for A-shares). Specific limits are set for each fund to control risks where applicable (e.g., permissible asset type, asset allocation, liquidity, credit requirement, counterparty concentration, maturity, foreign exchange exposures, interest rate risks and stress loss limits under extreme but plausible conditions) of the investments.

A portion of the Corporate Funds is invested in externally-managed investment funds (External Portfolio) under the Externally-Managed Investment Policy. The policy includes an asset allocation policy which aims to preserve and enhance the return of the External Portfolio by investing in a diverse mix of asset classes whose returns are not highly correlated to each other over time to mitigate portfolio volatility and asset class concentration risk. The policy also defines the risk-return parameters for the External Portfolio and restrictions to be observed, and the governance structure on selection and monitoring of fund managers. The fund managers of the investment funds are selected based on their performance track records and areas of expertise, and each should be financially strong and stable, and their selections are approved by the Investment Committee as delegated by the Board. Specific risk management limits are set for the External Portfolio (e.g., permissible asset type, asset allocation, liquidity, foreign exchange exposures and stress loss limits under extreme but plausible conditions).

The Investment Committee, comprised of Non-executive Directors of HKEX, advises the Board on portfolio management and monitors the risk and performance of HKEX's investments. A Treasury team in the Finance Division is dedicated to the day-to-day management and investment of the internally-managed funds, and monitor the performance of the External Portfolio.

54. Financial Risk Management (continued)

(a) Market risk (continued)

(i) Foreign exchange risk

Nature of risk

Foreign exchange risk is the risk that the value or cash flows of an asset, liability or forecast transaction denominated in foreign currency (i.e., a currency other than the functional currency of the entity to which the transactions relate) will fluctuate because of changes in foreign exchange rates. The functional currency of the Hong Kong and PRC entities are either HKD or Renminbi (RMB) and the functional currency of the LME entities is USD. Foreign exchange risks arise mainly from the Group's investments and bank deposits in currencies other than HKD and USD and its GBP expenditure for the LME entities.

Risk management

The Group manages its foreign exchange rate risks by setting limits of net foreign currency unhedged positions held from single currency and on an aggregated basis.

Forward foreign exchange contracts and foreign currency bank deposits may be used to hedge the currency exposure of the Group's non-HKD and non-USD assets and liabilities and highly probable forecast transactions to mitigate risks arising from fluctuations in exchange rates. In particular, the LME entities may designate certain GBP bank balances and forward foreign exchange contracts as cash flow hedges for hedging the foreign exchange risk of certain operating expenses and intangible assets.

Under the Investment Policies, investment in non-HKD financial instruments is subject to the following restrictions:

- For the External Portfolio, at least 50 per cent of the External Portfolio must be invested in HKD or USD investments or investments hedged back to HKD or USD, except that a further HK\$0.8 billion can be invested in RMB investments.
- For internally-managed Corporate Funds, Clearing House Funds, Margin Funds and Cash for A-shares, unhedged investments in currencies other than HKD or USD must fully match the respective liabilities or forecast payments for the funds. Unhedged investments in USD may not exceed 20 per cent of the respective funds and unhedged investments in RMB for internally-managed Corporate Funds may not exceed RMB1 billion.

For LME Clear, investments of the Margin Fund and Default Fund will generally be in the currency in which cash was received.

54. Financial Risk Management (continued)

(a) Market risk (continued)

(i) Foreign exchange risk (continued)

Exposure

The following table details the Group's financial assets and financial liabilities denominated in a currency other than the functional currency of the entity to which they relate and the net open foreign currency positions (i.e., gross positions less forward foreign exchange contracts and other offsetting exposures (hedges)), at 31 December presented in HKD equivalents.

	Foreign currency	At 31 Dec 2022			At 31 Dec 2021		
		Gross open position \$m	Hedges \$m	Net open position \$m	Gross open position \$m	Hedges \$m	Net open position \$m
Financial assets ¹	EUR	11,992	(11,986)	6	4,476	(4,471)	5
	GBP	2,878	(2,584)	294	13,111	(12,837) ³	274
	JPY	1,265	(1,261)	4	829	(828)	1
	RMB	19,105	(18,950)	155	26,462	(25,921)	541
	USD	8,575	(6,542)	2,033	11,282	(8,745)	2,537
	Others	3	(1)	2	4	(2)	2
Financial liabilities ²	EUR	(11,986)	11,986	–	(4,471)	4,471	–
	GBP	(2,846)	2,584	(262)	(12,770)	12,496	(274)
	JPY	(1,261)	1,261	–	(828)	828	–
	RMB	(18,956)	18,950	(6)	(25,924)	25,921	(3)
	USD	(6,648)	6,542	(106)	(9,303)	8,745	(558)
	Others	(1)	1	–	(3)	2	(1)
Total net open positions for the Group	EUR			6			5
	GBP			32			–
	JPY			4			1
	RMB			149			538
	USD			1,927			1,979
	Others			2			1
				2,120			2,524

1 Financial assets comprised cash and cash equivalents, base metals derivatives contracts, financial assets measured at fair value through other comprehensive income, financial assets measured at amortised cost, and accounts receivable and deposits.

2 Financial liabilities comprised margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants, Participants' contributions to Clearing House Funds, base metals derivatives contracts, borrowings, lease liabilities, and accounts payable and other liabilities.

3 Balance at 31 December 2021 included \$341 million of bank deposits designated as cash flow hedges (note 44(a)).

In addition, at 31 December 2022, the LME entities have entered into certain forward foreign currency contracts amounting to GBP97 million and designated them as cash flow hedges for hedging the foreign currency risk of their operating expenses and intangible assets (note 44(a)).

54. Financial Risk Management (continued)

(a) Market risk (continued)

(ii) Equity and commodity price risk

Nature of risk

The Group is exposed to equity price risk from equity investments in investment funds held as part of the External Portfolio. The Group is also exposed to equity price risk on the investments in minority stakes in unlisted companies (note 54(d)(i)).

The movements of fair value of base, ferrous and precious metals futures and options contracts cleared through LME Clear would not have any financial impact on the Group's results as the assets and liabilities will move by the same amount and fully offset each other.

Risk management

The Group sets prudent investment limits and restrictions to control investments in investment funds and a stress loss limit is set to limit its exposures. The Group selects fund managers after an extensive assessment of the underlying funds, their strategy and the overall quality of the fund managers, and the performance of the funds is monitored on a monthly basis, or on an ad hoc basis during adverse market conditions.

(iii) Interest rate risk

Nature of risk

There are two types of interest rate risk:

- Fair value interest rate risk – the risk that the value of a financial instrument will fluctuate because of changes in market interest rates; and
- Cash flow interest rate risk – the risk that the future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

The Group is exposed to both fair value and cash flow interest rate risks as the Group has significant assets and liabilities (including borrowings) which are interest-bearing.

Risk management

The Group manages its interest rate risks by setting a stress loss limit to limit its exposure. Limits are also set for maturity of the investments under the internally managed funds.

Exposure

The following tables present the carrying value and highest and lowest contractual interest rates of the financial assets held by the Group (excluding investments in investment funds, zero-coupon Exchange Fund Bills, and bank deposits held at savings and current accounts) at 31 December:

	Fixed rate financial assets		Floating rate financial assets	
	At 31 Dec 2022	At 31 Dec 2021	At 31 Dec 2022	At 31 Dec 2021
Carrying value (\$m)	114,983	88,992	117,535	103,998
Highest contractual interest rates	5.95%	3.50%	5.99%	1.21%
Lowest contractual interest rates ¹	0.25%	0.07%	-2.00%	-3.54%

1 The contractual interest rates for certain reverse repurchase investments denominated in Euro held by LME Clear were below 0 per cent.

54. Financial Risk Management (continued)

(a) Market risk (continued)

(iv) Sensitivity analysis

Investments other than investment funds

The Group performs sensitivity analysis to identify and measure foreign exchange risk and interest rate risk of the Group's investments other than investment funds.

Foreign exchange risk

The following table indicates the instantaneous change in the Group's profit after tax (and retained earnings) and other components of equity that would arise if foreign exchange rates to which the Group has significant exposure at the end of the reporting period had changed at that date, assuming all other risk variables remained constant. In this respect, it is assumed that the pegged rate between HKD and USD would only move within the limits undertaken by the Hong Kong Monetary Authority.

	Increase/ (decrease) in foreign exchange rates	At 31 Dec 2022		At 31 Dec 2021	
		Effect on profit after tax and retained earnings \$m	Effect on other components of equity \$m	Effect on profit after tax and retained earnings \$m	Effect on other components of equity \$m
GBP	5%	1	37	-	14
	(5%)	(1)	(37)	-	(14)
RMB	5%	7	-	27	-
	(5%)	(7)	-	(27)	-
USD	1%	19	-	20	-
	(1%)	(19)	-	(20)	-

The analysis above represents an aggregation of the instantaneous effects on each of the group entities' profit after tax and other comprehensive income measured in the respective functional currencies, translated into HKD at the exchange rate ruling at the end of the reporting period for presentation purposes.

The sensitivity analysis assumes that the change in foreign exchange rates had been applied to re-measure those financial instruments which expose the Group to foreign currency risk at the end of the reporting period. The analysis excludes differences that would result from the translation of the financial statements of foreign operations into the Group's presentation currency.

Interest rate risk

At 31 December 2022, it is estimated that a general increase/decrease of 25 basis points in interest rates, with all other variables held constant, would have increased/decreased the Group's profit after tax and retained earnings by approximately \$99 million (2021: \$111 million). Other components of equity would have decreased/increased by approximately \$33 million (2021: \$14 million) in response to the general increase/decrease in interest rates.

The sensitivity analysis above indicates the instantaneous change in the Group's profit after tax (and retained earnings) and other components of the equity that would arise assuming that the change in interest rates had occurred at the end of the reporting period and had been applied to re-measure those financial instruments which expose the Group to fair value interest rate risk at the end of the reporting period. In respect of the exposure to cash flow interest rate risk arising from non-derivative instruments held by the Group at the end of the reporting period, the impact on the Group's profit after tax (and retained earnings) is estimated as an annualised impact on interest expense or income of such a change in interest rates.

54. Financial Risk Management (continued)

(a) Market risk (continued)

(iv) Sensitivity analysis (continued)

Investment funds

At 31 December, the fair value of the Group's investment funds (Funds) by strategy employed was as follows:

Strategy	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Public Equities	1,027	1,774
Diversifiers ¹	3,943	4,949
Government Bonds and Mortgage-backed Securities	1,340	2,020
Total	6,310	8,743
Number of Funds	32	34

1 Diversifiers comprise Absolute Return and Multi-Sector Fixed Income asset classes.

The Group monitors market risk exposures of the Funds through a stress testing limit framework to control the potential market risk loss of the portfolio under stressed market conditions over a quarter's earnings cycle. The stress testing applied by the Group estimates potential extreme losses through a set of stress scenarios derived from historical stress events (such as the Asian Financial Crisis in 1997, the Great Financial Crisis in 2008, etc.). The Group monitors the Funds' limit utilisation monthly, and there was no limit breach during the year ended 31 December 2022.

To illustrate the sensitivity of the Funds' market value as a result of potential market moves, the Group also calculate a 1-year Value at Risk (VaR) estimation for the Funds at a 95 per cent confidence interval. The VaR calculation is a statistical estimation of the potential changes in the market value of the Funds over a 1-year period based on returns and volatilities observed historically. The 95 per cent confidence interval represents a once in every 20 years event for the 1-year loss of the Funds being equal to or larger than the VaR estimation. As of 31 December 2022, the estimated 1-year VaR was 4.2 per cent (31 December 2021: 1.0 per cent), implying the market value of the Funds could potentially change by approximately \$265 million (2021: \$87 million).

The 1-year VaR is a statistical measure of the historical risks and has limitations associated with the assumptions employed. Historical simulation assumes that actual observed historical changes in the respective Funds' monthly performance reflect possible future changes. This implies that the approach is vulnerable to sudden changes in market behaviour. In addition, it does not cover stressed market events, nor does it represent the Group's forecast of the Funds' future returns.

54. Financial Risk Management (continued)

(b) Liquidity risk

Nature of risk

Liquidity risk is the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities that are settled by delivering cash or another financial asset, and it results from amount and maturity mismatches of assets and liabilities.

Risk management

The Group employs projected cash flow analysis to manage liquidity risk by forecasting the amount of cash required and monitoring the working capital of the Group to ensure that all liabilities due and known funding requirements could be met.

Investments are kept sufficiently liquid to meet operational needs and regulatory requirements, and possible liquidity requirements of the Clearing House Funds and Margin Funds. The Group sets minimum levels of highly liquid assets for Corporate Funds, Clearing House Funds and Margin Funds. In particular, Corporate Funds solely used for supporting the Skin-in-the Game and default fund credits of Clearing House Funds are invested in overnight deposits, reverse repurchase investments or Exchange Fund Bills issued by the Hong Kong Monetary Authority and monitored on a daily basis.

As recognised clearing houses, the Group's clearing houses have to observe the liquidity requirements laid down in Principles for Financial Market Infrastructures (PFMI requirements) issued by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO). In particular, HKSCC, HKCC and SEOCH conduct daily liquidity stress testing that covers a number of potential stress scenarios, and sufficient liquidity has to be set aside to cover such stress testing.

Banking facilities have been put in place for contingency purposes. At 31 December 2022, the Group's total available banking facilities for its daily operations amounted to \$22,839 million (31 December 2021: \$21,249 million), which included \$16,338 million (31 December 2021: \$14,748 million) of committed banking facilities and \$6,500 million (31 December 2021: \$6,500 million) of repurchase facilities.

The Group also put in place foreign exchange facilities for its daily clearing operations and for the RMB Equity Trading Support Facility to support the trading of RMB stocks listed on the Stock Exchange. At 31 December 2022, the total amount of such facilities was \$28,493 million (31 December 2021: \$31,041 million).

In addition, the Group has arranged contingency banking facilities amounting to RMB13,000 million (HK\$14,665 million) (31 December 2021: RMB13,000 million (HK\$15,938 million)) for settling payment obligations to ChinaClear should there be events that disrupt normal settlement arrangements for Stock Connect.

54. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure

The Group is not exposed to liquidity risk on the outstanding base, ferrous and precious metals futures and options contracts cleared through LME Clear. Accordingly, they are not included in the analyses for financial assets and financial liabilities in the tables below.

The tables below analyse the Group's non-derivative financial assets into the relevant maturity buckets based on the following criteria:

- Investments held under the investment funds are allocated taking into account the redemption notice periods, lock-up periods and redemption restrictions;
- The expected amounts, subject to costs to liquidate that are expected to be immaterial, that could be realised from the investments (other than investment funds), bank deposits and cash and cash equivalents within one month to meet cash outflows on financial liabilities if required are allocated to the up to 1-month bucket;
- Investments in minority stakes in unlisted companies are allocated to the >5 years bucket; and
- Other financial assets are allocated based on their contractual maturity dates or the expected dates of disposal.

	At 31 Dec 2022					
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	>5 years \$m	Total \$m
Cash and cash equivalents	184,965	-	-	-	-	184,965
Financial assets measured at fair value through profit or loss	3,089	2,046	1,042	133	654	6,964
Financial assets measured at fair value through other comprehensive income	14,962	-	-	-	-	14,962
Financial assets measured at amortised cost	70,398	-	-	85	11	70,494
Accounts receivable and deposits ¹	25,138	21	3	-	-	25,162
Total non-derivative financial assets	298,552	2,067	1,045	218	665	302,547

	At 31 Dec 2021					
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	>5 years \$m	Total \$m
Cash and cash equivalents	181,361	-	-	-	-	181,361
Financial assets measured at fair value through profit or loss	4,772	2,287	1,432	252	694	9,437
Financial assets measured at fair value through other comprehensive income	9,755	-	-	-	-	9,755
Financial assets measured at amortised cost	51,731	-	-	89	8	51,828
Accounts receivable and deposits ¹	32,502	7	-	-	-	32,509
Total non-derivative financial assets	280,121	2,294	1,432	341	702	284,890

¹ Amounts exclude prepayments of \$213 million (31 December 2021: \$229 million).

54. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure (continued)

The table below analyses the Group's non-derivative financial liabilities at 31 December into relevant maturity buckets based on their contractual maturity dates. The amounts disclosed in the tables are the contractual undiscounted cash flows and represent the earliest date the Group can be required to pay.

	At 31 Dec 2022					Total \$m
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	>5 years \$m	
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	227,902	-	-	-	-	227,902
Accounts payable, accruals and other liabilities	18,918	16	120	-	-	19,054
Other financial liabilities:						
Other financial liabilities of Clearing House Funds	15	5	-	-	-	20
Other financial liabilities of Corporate Funds:						
Financial guarantee contract (maximum amount guaranteed) (note 49(b))	120	-	-	-	-	120
Participants' contributions to Clearing House Funds	20,713	442	50	-	-	21,205
Borrowings:						
Written put options to non-controlling interests	-	-	433	85	-	518
Lease liabilities	35	56	259	1,049	581	1,980
Total non-derivative financial liabilities	267,703	519	862	1,134	581	270,799
	At 31 Dec 2021					
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	>5 years \$m	Total \$m
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	203,536	-	-	-	-	203,536
Accounts payable, accruals and other liabilities	28,193	18	124	-	-	28,335
Other financial liabilities:						
Other financial liabilities of Margin Funds	468	-	-	-	-	468
Other financial liabilities of Clearing House Funds	24	-	1	-	-	25
Other financial liabilities of Corporate Funds:						
Financial guarantee contract (maximum amount guaranteed) (note 49(b))	128	-	-	-	-	128
Participants' contributions to Clearing House Funds	18,645	485	52	-	-	19,182
Borrowings:						
Written put options to non-controlling interests	-	-	340	93	-	433
Lease liabilities	36	58	281	1,143	842	2,360
Total non-derivative financial liabilities	251,030	561	798	1,236	842	254,467

54. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure (continued)

As at 31 December 2022, the maximum gross nominal value of outstanding forward foreign exchange contract held by the Group was \$914 million (31 December 2021: \$Nil). The table below analyses the Group's outstanding forward foreign exchange contracts as at 31 December (which include all contracts regardless of whether they had gains or losses at the end of reporting period) that would be settled on a gross basis into relevant maturity buckets based on their remaining contractual maturity dates. The amounts disclosed in the table are contractual undiscounted cash flows, which are different from the carrying amount (i.e., market value) in the consolidated statement of financial position.

	31 Dec 2022			Total \$m
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	
Forward foreign exchange contracts				
– outflows	65	142	694	901
– inflows	66	144	704	914

(c) Credit risk

Nature of risk

The Group is exposed to credit risk, which is the risk that a counterparty will be unable to pay amounts in full when due. It arises primarily from the Group's investments and accounts receivable. Impairment provisions are made against the Group's investments and accounts receivable based on the accounting policy set out in notes 23 and 24.

The Group is also exposed to clearing and settlement risk, as the clearing houses of the Group act as the counterparties to eligible trades concluded on the Stock Exchange, the Futures Exchange, the over-the-counter market, and the LME through the novation of the obligations of the buyers and sellers. HKSCC is also responsible for the good title to the securities deposited and accepted in the CCASS depository. As a result, the Group has considerable market risk and credit risk since the Participants' ability to honour their obligations in respect of their trades and securities deposited may be adversely impacted by economic conditions. If the Participants default on their obligations on settlement or there are defects in the title of securities deposited and accepted in the CCASS depository, the Group could be exposed to potential risks not otherwise accounted for in these consolidated financial statements.

Risk management – Investment and accounts receivable risk

The Group limits its exposure to credit risk by rigorously selecting the counterparties (i.e., deposit-takers, bond issuers, debtors and fund managers) and by diversification. All investments (excluding those held by the investment funds) were governed by the Group Credit Limit for Settlement and Investments framework. Under the framework, specific limits are set on an investment portfolio level and on single counterparty level. The investment portfolio is subject to a maximum portfolio expected loss limit, each investment counterparty is subject to a minimum investment grade rating, and each investment is also subject to maximum concentration limit per counterparty. Fund managers of investment funds are financially strong and stable, and their selections are approved by the Investment Committee as delegated by the Board.

54. Financial Risk Management (continued)

(c) Credit risk (continued)

Risk management – Investment and accounts receivable risk (continued)

At 31 December 2022, the investments in debt securities held by the Group (excluding those held by the investment funds) were of investment grade and had a weighted average credit rating of Aa2 (Moody) (31 December 2021: Aa2 (Moody)). Deposits are placed only with the investment grade banks, licensed banks and restricted licence banks regulated by the Hong Kong Monetary Authority, and banks regulated by local banking regulators in the countries where the Group's subsidiaries operate. LME entities invest a significant portion of cash in reverse repurchase investments, where high quality assets are held against such investments as collateral.

The Group mitigates its exposure to risks relating to accounts receivable from its Participants by requiring the Participants to meet the Group's established financial requirements and criteria for admission as Participants.

Risk management – Clearing and settlement risk

The Group mitigates its exposure to clearing and settlement-related risks by requiring the Participants to meet the Group's established financial requirements and criteria for admission as Participants, monitoring compliance with risk management measures such as imposing position limits and requiring Clearing Participants to deposit margins, Mainland security and settlement deposits, and cash collateral and contribute to the Clearing House Funds set up by the Group's five clearing houses. HKSCC also retains recourse against those Participants whose securities are deposited and accepted in the CCASS depository.

Under the Margin Fund and Guarantee Fund arrangements, each HKSCC Clearing Participant is granted by HKSCC a Margin Credit of \$5 million and a Dynamic Contribution Credit of \$1 million, and each HKCC Clearing Participant is granted a Dynamic Contribution Credit of HKCC Reserve Fund of \$1 million. If a HKSCC or HKCC Clearing Participant defaults and any loss arises, HKSCC will absorb the default loss up to the Margin Credit and Dynamic Contribution Credit utilised by the defaulting HKSCC Clearing Participant, after deducting its collateral and Guarantee Fund contribution maintained with HKSCC, and HKCC will absorb the default loss up to the Dynamic Contribution Credit utilised by the defaulting HKCC Clearing Participant, after deducting its collateral and Reserve Fund contribution maintained with HKCC. After the initial losses, HKSCC is required to absorb further losses after the HKSCC Guarantee Fund reserve and the Guarantee Fund contribution (excluding the Dynamic Contribution portion) of non-defaulting HKSCC Clearing Participants are depleted, and HKCC is required to absorb further losses after the HKCC Reserve Fund reserve and the Reserve Fund contribution (excluding the Dynamic Contribution portion) of non-defaulting HKCC Clearing Participants are depleted. The amount of losses borne by HKSCC and HKCC will be calculated on a pro rata basis with reference to the non-defaulting HKSCC and HKCC Clearing Participants' Dynamic Contributions and Dynamic Contribution Credits granted by HKSCC and HKCC respectively.

At 31 December 2022, HKSCC had 618 Clearing Participants (31 December 2021: 642) and the total amounts of Margin Credit and Dynamic Contribution Credit utilised by HKSCC Clearing Participants amounted to \$823 million (31 December 2021: \$903 million), while HKCC had 149 Clearing Participants (31 December 2021: 166) and the total amount of Dynamic Contribution Credit utilised by HKCC Clearing Participants amounted to \$57 million (31 December 2021: \$65 million).

The HKSCC Margin Credit and Dynamic Contribution Credit and the HKCC Dynamic Contribution Credit are supported by the \$4,000 million of shareholders' funds set aside by the HKEX Group for risk management purpose, of which \$1,060 million and \$830 million were injected into HKSCC and HKCC respectively.

54. Financial Risk Management (continued)

(c) Credit risk (continued)

Exposure

At 31 December, the maximum exposure to credit risk of the financial assets of the Group was equal to their carrying amounts. The maximum exposure to credit risk of the financial guarantee contract issued by the Group was as follows:

	At 31 Dec 2022		At 31 Dec 2021	
	Carrying amount in consolidated statement of financial position \$m	Maximum exposure to credit risk \$m	Carrying amount in consolidated statement of financial position \$m	Maximum exposure to credit risk \$m
Financial guarantee contract				
Undertaking to indemnify the Collector of Stamp Revenue (note 49(b))	(20)	120	(20)	128

Collateral held for mitigating credit risk

Certain securities, cash deposits and non-cash collateral are being held by the Group to mitigate the Group's exposure to credit risk. The financial effect of the collateral, which is capped by the amount receivable from each counterparty, was as follows:

	At 31 Dec 2022		At 31 Dec 2021	
	Carrying amount in consolidated statement of financial position \$m	Collateral held for mitigating credit risk \$m	Carrying amount in consolidated statement of financial position \$m	Collateral held for mitigating credit risk \$m
Accounts receivable and deposits ¹	25,162	4,862	32,509	13,037
Fair value of base, ferrous and precious metals futures and options contracts cleared through LME Clear	80,705	80,705	91,424	91,424
Reverse repurchase investments	111,418	111,418	101,041	101,041

¹ Amounts exclude prepayments of \$213 million (31 December 2021: \$229 million).

54. Financial Risk Management (continued)

(d) Fair values of financial assets and financial liabilities

(i) Financial assets and financial liabilities carried at fair value

At 31 December 2022 and 31 December 2021, no non-financial assets or liabilities were carried at fair values.

The following tables present the carrying value of financial assets and financial liabilities measured at fair value according to the levels of the fair value hierarchy defined in HKFRS 13: Fair Value Measurement, with the fair value of each financial asset and financial liability categorised based on the lowest level of input that is significant to that fair value measurement. The levels are defined as follows:

- Level 1: fair values measured using quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: fair values measured using valuation techniques in which all significant inputs other than quoted prices included within Level 1 are directly or indirectly based on observable market data.
- Level 3: fair values measured using valuation techniques in which any significant input is not based on observable market data.

Recurring fair value measurements:	At 31 Dec 2022				At 31 Dec 2021			
	Level 1 \$m	Level 2 \$m	Level 3 \$m	Total \$m	Level 1 \$m	Level 2 \$m	Level 3 \$m	Total \$m
Financial assets								
Financial assets measured at fair value through profit or loss:								
– investment funds	662	5,648	–	6,310	1,680	7,063	–	8,743
– equity securities	–	–	654	654	–	–	694	694
Financial assets measured at fair value through other comprehensive income:								
– debt securities	12,045	2,917	–	14,962	7,750	2,005	–	9,755
Derivative financial instruments:								
– base, ferrous and precious metals futures and options contracts cleared through LME Clear	–	80,705	–	80,705	–	91,424	–	91,424
– forward foreign exchange contracts	–	13	–	13	–	–	–	–
	12,707	89,283	654	102,644	9,430	100,492	694	110,616
Financial liabilities								
Derivative financial instruments:								
– base, ferrous and precious metals futures and options contracts cleared through LME Clear	–	80,705	–	80,705	–	91,424	–	91,424

54. Financial Risk Management (continued)

(d) Fair values of financial assets and financial liabilities (continued)

(i) Financial assets and financial liabilities carried at fair value (continued)

During 2022 and 2021, there were no transfers of instruments between Level 1 and Level 2 or transfer into or out of Level 3.

Level 2 fair values of investment funds, debt securities, base, ferrous and precious metals futures and options contracts, and forward foreign exchange contracts have been determined based on quotes from market makers, funds administrators or alternative pricing sources supported by observable inputs. The most significant input are market interest rates, market prices of metals, market foreign exchange rates, net asset values and latest redemption prices or transaction prices of the respective investment funds.

The Group's policy is to recognise transfers into and out of fair value hierarchy levels as of the date of the event or change in circumstances that caused the transfer.

Fair value measurements using significant unobservable inputs (Level 3)

	2022 \$m	2021 \$m
At 1 Jan	694	220
Investment in minority stakes in unlisted companies	-	349
(Losses)/gains recognised in consolidated income statement	(21)	121
(Losses)/gains recognised in other comprehensive income	(19)	4
At 31 Dec	654	694
Total (losses)/gains recognised in the consolidated income statement for assets held at 31 Dec	(21)	121

Level 3 valuations are prepared on bi-annually basis, at each interim and annual reporting date. The assumptions and inputs to the valuation model, the valuation techniques and the valuation results are reviewed and approved by management.

The following table summarises the basis of valuation used in level 3 fair value measurements:

Description	Fair value		Valuation technique	Unobservable inputs	Range
	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m			
Minority stake in Fusion Bank Limited	200	200	Market approach ¹	N/A	N/A
Minority stake in Huakong TsingJiao Information Science (Beijing) Limited	217	236	Market approach ¹	N/A	N/A
Minority stake in Guangzhou Futures Exchange	237	258	Market approach ¹	N/A	N/A
Total	654	694			

¹ The fair value is estimated based on the analysis of the investment's financial position and results, prospects and other factors and by reference to recent market transactions.

Fusion Bank Limited has a virtual banking license granted by the Hong Kong Monetary Authority. The investment is not traded in an active market. The company offers a variety of banking services including savings, time deposits, loans, local fund transfers and foreign exchange.

54. Financial Risk Management (continued)

(d) Fair values of financial assets and financial liabilities (continued)

(i) Financial assets and financial liabilities carried at fair value (continued)

Huakong TsingJiao Information Science (Beijing) Limited is a data technology company, which specialises in the research and development of multi-party computation technologies, allowing collaborative data analysis without revealing private data during the computation and analysis process. The investment is not traded in an active market.

Guangzhou Futures Exchange was officially launched in April 2021, focusing on serving the real economy and green development initiatives. In December 2022, the exchange launched its first products, industrial silicon futures and options, and will continue to develop more products related to green development in the future. The investment is not traded in an active market.

(ii) Fair values of financial assets and financial liabilities not reported at fair values

Summarised in the following table are the carrying amounts and fair values of long-term financial assets and financial liabilities not presented in the consolidated statement of financial position at their fair values, except for lease liabilities where disclosure of fair values is not required. These assets and liabilities were classified under Level 2 in the fair value hierarchy.

	At 31 Dec 2022		At 31 Dec 2021	
	Carrying amount in consolidated statement of financial position \$m	Fair value \$m	Carrying amount in consolidated statement of financial position \$m	Fair value \$m
Assets				
Financial assets measured at amortised cost:				
– debt securities maturing over one year ¹	113	113	429	429
– other financial assets maturing over one year ²	96	70	97	87
Liabilities				
Borrowings:				
– written put options to non-controlling interests ³	491	490	426	430
Financial guarantee to the Collector of Stamp Revenue ⁴	20	29	20	56

1 The fair values are provided by a reputable independent financial institution.

2 The fair values are based on cash flows discounted using Hong Kong Government bond rates of a tenor similar to the contractual maturity of the respective assets, adjusted by an estimated credit spread. The discount rates used ranged from 4.79 per cent to 5.32 per cent at 31 December 2022 (31 December 2021: 0.41 per cent to 1.45 per cent).

3 The fair values are based on cash flows discounted using the prevailing market interest rates for loans with similar credit rating and similar tenor of the respective loans. The discount rates used ranged from 4.88 per cent to 5.74 per cent at 31 December 2022 (31 December 2021: 1.70 per cent).

4 The fair values are based on the fees charged by financial institutions for granting such guarantees discounted to perpetuity using a ten-year Hong Kong Government bond rate, adjusted by an estimated credit spread, but capped at the maximum exposure of the financial guarantee. The discount rate used was 5.19 per cent at 31 December 2022 (31 December 2021: 2.84 per cent).

The carrying amounts of short-term financial assets and receivables (e.g., accounts receivable, financial assets measured at amortised cost and cash and cash equivalents) and short-term payables (e.g., accounts payable and other liabilities) approximated their fair values, and accordingly no disclosure of the fair values of these items is presented.

54. Financial Risk Management (continued)

(e) Offsetting financial assets and financial liabilities

Accounting Policy

Financial assets and liabilities are offset and the net amount reported in the consolidated statement of financial position 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 legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the company or the counterparty.

For base, ferrous and precious metals futures and options contracts cleared through LME Clear, the asset and liability positions of LME Clear arising through its activities as a central counterparty are matched. Therefore, the same amounts are recorded for both assets and liabilities with the fair value gains and losses recognised, but offset, in the consolidated income statement.

The disclosures set out in the tables below include financial assets and financial liabilities that:

- Are offset in the Group's consolidated statement of financial position; or
 - Are subject to an enforceable master netting arrangement or similar agreement that covers similar financial instruments, irrespective of whether they are offset in the consolidated statement of financial position.
- (i) Financial assets and financial liabilities subject to offsetting, enforceable master netting arrangements or similar agreements

Type of financial instruments	At 31 Dec 2022					
	Gross amounts \$m	Gross amounts set off in the consolidated statement of financial position \$m	Net amounts presented in the consolidated statement of financial position ³ \$m	Related amounts not offset in the consolidated statement of financial position		Net amounts \$m
				Amounts subject to master netting arrangements \$m	Cash collateral \$m	
Financial assets:						
CNS money obligations receivable ¹	228,859	(216,066)	12,793	(2,580)	(4,137)	6,076
Base, ferrous and precious metals futures and options contracts cleared through LME Clear ²	1,538,681	(1,457,976)	80,705	(52,974)	(27,731)	-
Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	10,758	-	10,758	(159)	(112)	10,487
Total	1,778,298	(1,674,042)	104,256	(55,713)	(31,980)	16,563
Financial liabilities:						
CNS money obligations payable ¹	231,593	(216,066)	15,527	(2,716)	-	12,811
Base, ferrous and precious metals futures and options contracts cleared through LME Clear ²	1,538,681	(1,457,976)	80,705	(52,974)	-	27,731
Other payable to ChinaClear	23	-	23	(23)	-	-
Total	1,770,297	(1,674,042)	96,255	(55,713)	-	40,542

54. Financial Risk Management (continued)

(e) Offsetting financial assets and financial liabilities (continued)

(i) Financial assets and financial liabilities subject to offsetting, enforceable master netting arrangements or similar agreements (continued)

Type of financial instruments	At 31 Dec 2021					
	Gross amounts \$m	Gross amounts set off in the consolidated statement of financial position \$m	Net amounts presented in the consolidated statement of financial position ³ \$m	Related amounts not offset in the consolidated statement of financial position		Net amounts \$m
				Amounts subject to master netting arrangements \$m	Cash collateral \$m	
Financial assets:						
CNS money obligations receivable ¹	330,705	(312,784)	17,921	(3,101)	(10,472)	4,348
Base, ferrous and precious metals futures and options contracts cleared through LME Clear ²	1,512,980	(1,421,556)	91,424	(39,489)	(51,935)	-
Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	13,311	-	13,311	(5,607)	(113)	7,591
Total	1,856,996	(1,734,340)	122,656	(48,197)	(62,520)	11,939
Financial liabilities:						
CNS money obligations payable ¹	338,077	(312,784)	25,293	(8,708)	-	16,585
Base, ferrous and precious metals futures and options contracts cleared through LME Clear ²	1,512,980	(1,421,556)	91,424	(39,489)	-	51,935
Total	1,851,057	(1,734,340)	116,717	(48,197)	-	68,520

- 1 HKSCC currently has a legally enforceable right to set off certain CNS money obligations receivable and payable relating to the same Clearing Participant and it intends to settle on a net basis.
- 2 LME Clear has a legally enforceable right to set off open positions of certain contracts within an individual member's account for those contracts settling on the same date and it intends to settle on a net basis.
- 3 For the net amounts of CNS money obligations receivable or payable and net fair value of base, ferrous and precious metals futures and options contracts (i.e., after set-off), other accounts receivable and other payable due from/to customers, they do not meet the criteria for offsetting in the consolidated statement of financial position since the right of set-off of the recognised amounts is only enforceable following an event of default of the customers. In addition, the Group does not intend to settle the balances on a net basis.

54. Financial Risk Management (continued)

(e) Offsetting financial assets and financial liabilities (continued)

- (ii) The tables below reconcile the “net amounts of financial assets and financial liabilities presented in the consolidated statement of financial position”, as set out above, to the “accounts receivable, prepayments and deposits”, “accounts payable, accruals and other liabilities” and “derivative financial instruments” presented in the consolidated statement of financial position.

	Accounts receivable, prepayments and deposits		Derivative financial instruments (assets)	
	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Net amount of financial assets after offsetting as stated above:				
– CNS money obligations receivable	12,793	17,921	–	–
– Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	10,758	13,311	–	–
– Base, ferrous and precious metals futures and options contracts cleared through LME Clear	–	–	80,705	91,424
Financial assets not in scope of offsetting disclosures	1,611	1,277	13	–
Prepayments	213	229	–	–
Amounts presented in the consolidated statement of financial position	25,375	32,738	80,718	91,424
	Accounts payable, accruals and other liabilities		Derivative financial instruments (liabilities)	
	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m	At 31 Dec 2022 \$m	At 31 Dec 2021 \$m
Net amount of financial liabilities after offsetting as stated above:				
– CNS money obligations payable	15,527	25,293	–	–
– Other payable to ChinaClear	23	–	–	–
– Base, ferrous and precious metals futures and options contracts cleared through LME Clear	–	–	80,705	91,424
Financial liabilities not in scope of offsetting disclosures	3,504	3,042	–	–
Amounts presented in the consolidated statement of financial position	19,054	28,335	80,705	91,424

55. Statement of Financial Position and Reserve Movements of HKEX

Accounting Policy

In HKEX's statement of financial position, investments in subsidiaries are stated at cost less impairment losses, if necessary. The results of subsidiaries are accounted for by HKEX on the basis of dividends received and receivable.

Investment in a subsidiary is tested for impairment upon receiving a dividend from that subsidiary if the dividend exceeds the total comprehensive income of the subsidiary concerned in the period the dividend is declared or if the carrying amount of the subsidiary in HKEX's statement of financial position exceeds the carrying amount of the subsidiary's net assets.

The financial statements of the controlled special purpose entity, The HKEX Employees' Share Award Scheme, are included in HKEX's financial statements.

Written put options to non-controlling interests initially recognised at fair value are accounted for as an investment in subsidiaries with a corresponding credit to financial liabilities at fair value through profit or loss. Subsequent changes in fair value of the financial liabilities are recognised in HKEX's income statement. Written put options to non-controlling interests are included under financial liabilities at fair value through profit or loss on the statement of financial position.

55. Statement of Financial Position and Reserve Movements of HKEX (continued)

Statement of Financial Position of HKEX

	At 31 Dec 2022			At 31 Dec 2021		
	Current \$m	Non-current \$m	Total \$m	Current \$m	Non-current \$m	Total \$m
Assets						
Cash and cash equivalents	2,545	-	2,545	3,808	-	3,808
Financial assets measured at fair value through profit or loss	6,177	370	6,547	8,491	510	9,001
Financial assets measured at amortised cost	6,923	187	7,110	5,264	197	5,461
Accounts receivable, prepayments and deposits	337	21	358	315	21	336
Amounts due from subsidiaries	1,103	11,582	12,685	808	11,594	12,402
Interests in joint ventures	-	114	114	-	114	114
Intangible assets	-	429	429	-	464	464
Fixed assets	-	387	387	-	404	404
Right-of-use assets	-	1,446	1,446	-	1,656	1,656
Investments in subsidiaries	-	16,820	16,820	-	15,694	15,694
Total assets	17,085	31,356	48,441	18,686	30,654	49,340
Liabilities and equity						
Liabilities						
Financial liabilities at fair value through profit or loss	340	-	340	333	-	333
Accounts payable, accruals and other liabilities	614	-	614	673	-	673
Amounts due to subsidiaries	694	-	694	159	-	159
Taxation payable	356	-	356	325	-	325
Other financial liabilities	11	-	11	11	-	11
Lease liabilities	228	1,321	1,549	209	1,543	1,752
Provisions	53	63	116	73	63	136
Deferred tax liabilities	-	84	84	-	95	95
Total liabilities	2,296	1,468	3,764	1,783	1,701	3,484
Equity						
Share capital			31,918			31,896
Shares held for Share Award Scheme			(918)			(901)
Employee share-based compensation reserve			346			306
Merger reserve			694			694
Retained earnings			12,637			13,861
Equity attributable to shareholders of HKEX			44,677			45,856
Total liabilities and equity			48,441			49,340
Net current assets			14,789			16,903

Approved by the Board of Directors on 23 February 2023

Laura M CHA

Director

Alejandro Nicolas AGUZIN

Director

55. Statement of Financial Position and Reserve Movements of HKEX (continued)

(a) Reserve movements of HKEX

	Employee share-based compensation reserve \$m	Merger reserve \$m	Retained earnings \$m
At 1 Jan 2021	232	694	13,376
Profit attributable to shareholders	–	–	12,073
2020 second interim dividend at \$4.46 per share	–	–	(5,646)
2021 first interim dividend at \$4.69 per share	–	–	(5,934)
Unclaimed HKEX dividends forfeited	–	–	12
Vesting of shares of Share Award Scheme	(250)	–	(20)
Employee share-based compensation benefits	324	–	–
At 31 Dec 2021	306	694	13,861
At 1 Jan 2022	306	694	13,861
Profit attributable to shareholders	–	–	8,421
2021 second interim dividend at \$4.18 per share	–	–	(5,290)
2022 first interim dividend at \$3.45 per share	–	–	(4,366)
Unclaimed HKEX dividends forfeited	–	–	26
Vesting of shares of Share Award Scheme	(340)	–	(15)
Employee share-based compensation benefits	380	–	–
At 31 Dec 2022	346	694	12,637

Shareholder Information

Financial Calendar 2023

Announce 2022 final results	23 February
2023 AGM	26 April
Announce 2023 first quarter results	April
Announce 2023 interim results	August
Announce 2023 third quarter results	October

For Shareholders to Attend and Vote at 2023 AGM

Latest time to lodge transfer documents for registration with HKEX's registrar	At 4:30 pm on 20 April 2023
Closure of HKEX's Register of Members	21 to 26 April 2023 (both dates inclusive)
Record date	26 April 2023

Dividend Policy

HKEX adopts a dividend policy of providing Shareholders with regular dividends. In general, HKEX will declare/propose dividends semi-annually when the Board approves the interim results and the annual results.

In determining the appropriate amount of dividend, the Group actively and regularly reviews and manages its capital structure to ensure an optimal capital structure and shareholder returns by considering:

- the expected capital requirements and capital efficiency;
- regulatory capital requirements of its regulated entities;
- prevailing and projected profitability;
- projected operating cash flows; and
- projected capital expenditures and strategic investment opportunities.

The normal target payout ratio is 90 per cent of the Group's profit attributable to Shareholders of the year, excluding the financial results of HKEX Foundation.

2022 Dividends

First interim dividend	\$3.45 per share
Second interim dividend	\$3.69 per share
Dividend payout ratio	90 per cent *

* Based on the Group's profit attributable to Shareholders for the year ended 31 December 2022, excluding the financial results of HKEX Foundation

The second interim dividend for 2022 will be payable wholly in cash.

Key Dates for 2022 Second Interim Dividend

Ex-dividend date	8 March 2023
Latest time to lodge transfer documents for registration with HKEX's registrar	At 4:30 pm on 9 March 2023
Closure of HKEX's Register of Members	10 to 13 March 2023 (both dates inclusive)
Record date	13 March 2023
Despatch of dividend warrants	22 March 2023

Share Information

HKEX shares are listed on the Stock Exchange and are eligible for Southbound Trading under Stock Connect. HKEX is currently a constituent stock of the HSI and a number of sustainability indices as disclosed on the HKEX Group website [IR](#).

Listing

As at 31 December 2022

• Number of issued shares	1,267,836,895 shares
• Market capitalisation	\$427.5 billion
Board lot size	100 shares

Stock Codes

Stock Exchange	388
Bloomberg	388 HK Equity
Reuters	0388.HK
ISIN	HK0388045442
SEDOL1	6267359 HK

American Depositary Receipt

Ticker Symbol	HKXCY
CUSIP	43858F109

HKEX Share Price Performance vs HSI in 2022



Shareholding Distribution as at 31 December 2022 (based on HKEX's Register of Members)

Size of shareholding	Number of Shareholders	% of ¹ Shareholders	Number of shares held	% of HKEX shares in issue
1 – 1,000	2,415	51.2	999,529	0.1
1,001 – 5,000	1,410	29.9	3,473,190	0.3
5,001 – 10,000	348	7.4	2,619,515	0.2
10,001 – 100,000	433	9.2	13,185,859	1.0
100,001 and above	114	2.4	1,247,558,802	98.4
Total	4,720	100.0	1,267,836,895	100.0

¹ Percentage is for reference only, and may not add up to the total due to rounding.

Details about HKEX's major Shareholder are disclosed in the Corporate Governance Report contained in this Annual Report.

Electronic Communication

This Annual Report is printed in English and Chinese, and is available in the Investor Relations (Regulatory Disclosure) section of the HKEX Group website [IR](#).

Shareholders are encouraged to access HKEX's corporate communications electronically via the HKEX Group website to help protect the environment. Shareholders may at any time change their choice of language or means of receiving HKEX's corporate communications free of charge by giving not less than seven days' notice to HKEX's registrar. The Investor Relations (Shareholder Services) section of the HKEX Group website sets out the relevant arrangements for Shareholders to make such change request(s).

Registration for News Alerts

Shareholders who would like to be notified when HKEX publishes its corporate communications on the HKEXnews website can register for the News Alerts service in the Market Data section of the HKEX Market website (www.hkex.com.hk). Further information about Shareholder communications can be found in the Corporate Governance Report contained in this Annual Report.

HKEX's Registrar – Hong Kong Registrars Limited

For corporate communications:

By post: 17M Floor, Hopewell Centre
183 Queen's Road East
Wan Chai, Hong Kong

By email: hkex.ecom@computershare.com.hk

For transfer of shares:

Address: Shops 1712-1716, 17th Floor
Hopewell Centre
183 Queen's Road East
Wan Chai, Hong Kong

Tel: +852 2862 8555

Fax: +852 2865 0990/+852 2529 6087

Feedback on Annual Report

HKEX values feedback on this Annual Report as well as its reporting of the Group's financial and governance performance. Shareholders may give their comments via the online form at www.hkexgroup.com/Investor-Relations/Regulatory-Disclosure/Regulatory-Reports or email at ssd@hkex.com.hk.

Glossary

2022 AGM • AGM held on 27 April 2022 at 4:30 pm at the HKEX Connect Hall on the 1st Floor, One and Two Exchange Square, Central, Hong Kong

2023 AGM • AGM to be held on 26 April 2023

360 DigiTech • 360 DigiTech, Inc.

ADT • Average daily turnover value

ADV • Average daily volume (in number of contracts/lots)

AGM(s) • HKEX's annual general meeting(s)

Awarded Shares • Shares awarded under the Share Award Scheme

BayConnect • BayConnect Technology Company Limited

BBS • Bronze Bauhinia Star

Beike • KE Holdings Inc.

Board • HKEX's board of directors

Bond Connect • A mutual bond market access programme between Hong Kong and Mainland China, under which Northbound trading enables overseas investors to invest in the China Interbank Bond Market, and Southbound trading enables Mainland institutional investors to invest in offshore bonds through the Hong Kong bond market

Cash Market • HKEX's securities related business excluding stock options

CBBCs • Callable Bull/Bear Contracts

CCASS • Central Clearing and Settlement System

CCP • Central counterparty

CFETS • China Foreign Exchange Trade System

Chief Executive Officer or CEO • HKEX's Chief Executive

ChinaClear • China Securities Depository and Clearing Corporation Limited

CNH • Offshore RMB traded outside Mainland China

CNS • Continuous Net Settlement

Corporate Governance Code • Refers to Appendix 14 to the Main Board Listing Rules

CP(s) • Clearing Participant(s)

CSR • Corporate Social Responsibility

CSRC • China Securities Regulatory Commission

Derivatives Market • HKEX's derivatives related business including stock options

Director(s) • HKEX's director(s)

DWs • Derivative warrants

e-IPO • Electronic Initial Public Offering

Elected Directors • Directors elected by the Shareholders at general meetings

EP(s) • Exchange Participant(s)

ESG • Environmental, Social and Governance

ETF(s) • Exchange Traded Fund(s)

ETP(s) • Exchange Traded Product(s), which include(s) ETFs and L&I Products

EU • European Union

Euro • The official currency of the Eurozone

Exchange or SEHK or Stock Exchange • The Stock Exchange of Hong Kong Limited

External Portfolio • Externally-managed investment funds

FCA • Financial Conduct Authority

FIC • Fixed income and currency

Financial Secretary • Financial Secretary of the HKSAR

FINI • Fast Interface for New Issuance

Fintech • Financial technology

Futures Exchange or HKFE • Hong Kong Futures Exchange Limited

GBM • Grand Bauhinia Medal

GBS • Gold Bauhinia Star

GEM Listing Rules • Rules Governing the Listing of Securities on GEM of The Stock Exchange of Hong Kong Limited

Government • HKSAR Government

Government Appointed Director(s) • Director(s) appointed by the Financial Secretary pursuant to Section 77 of the SFO

Greater Bay Area • Guangdong-Hong Kong-Macao Greater Bay Area

Group or HKEX Group • HKEX and its subsidiaries

Headline ADT • ADT of equity products, DWs, CBBCs and warrants traded on the Stock Exchange

HKCC • HKFE Clearing Corporation Limited

HKEX or the Company • Hong Kong Exchanges and Clearing Limited

HKEX Foundation • HKEX Foundation Limited

HKEX Group website • www.hkexgroup.com

HKEX Market website • www.hkex.com.hk

HKEX Websites • HKEX Group website and HKEX Market website

HKEX's Articles • HKEX's Articles of Association

HKFRS(s) • Hong Kong Financial Reporting Standard(s)

HKICPA • Hong Kong Institute of Certified Public Accountants

HKSAR • Hong Kong Special Administrative Region of the People's Republic of China

HKSCC • Hong Kong Securities Clearing Company Limited

HSCEI • Hang Seng China Enterprises Index

HSI • Hang Seng Index

IFC • International financial centre

INED(s) • Independent Non-executive Director(s) of HKEX

IPO(s) • Initial Public Offering(s)

Iron Ore Futures • TSI Iron Ore Fines 62 per cent Fe CFR China Futures

IT • Information Technology

JP • Justice of the Peace

Kanzhun • Kanzhun Limited

Kingsoft Cloud • Kingsoft Cloud Holdings Limited

L&I Products • Leveraged and Inverse Products

LGBT+ • Lesbian, gay, bisexual and transgender plus

Listing Committee • Listing Committee of the Main Board and GEM

Listing Rule(s) • Main Board Listing Rules and GEM Listing Rules

LME • The London Metal Exchange

LME Clear • LME Clear Limited

LME Group • HKEX Investment (UK) Limited, LMEH, the LME and LME Clear

LMEH • LME Holdings Limited

LMEmercury • LME Clear's clearing system which enables its Members to view their risk positions in real time

London Metal Mini Futures • London Aluminium/ Zinc/Copper/Nickel/Tin/Lead Mini Futures

Main Board Listing Rules • Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited

MD • Managing Director

MH • Medal of Honour

MiFID II • Markets in Financial Instruments Directive II

MINISO • MINISO Group Holding Limited

Model Code • Model Code for Securities Transactions by Directors of Listed Issuers, Appendix 10 to the Main Board Listing Rules

MOU • Memorandum of Understanding

MSCI • MSCI Inc.

NIO • NIO Inc.

Noah • Noah Holdings Private Wealth and Asset Management Limited

Northbound Trading or Stock Connect

Northbound • Hong Kong and overseas investors trading in eligible securities that are listed on the Shanghai Stock Exchange or the Shenzhen Stock Exchange through Stock Connect

OECD • The Organisation for Economic Co-operation and Development

OneConnect • OneConnect Financial Technology Co., Ltd.

OTC • Over-the-counter

OTC Clear • OTC Clearing Hong Kong Limited

PFMI • “Principles for financial market infrastructures” published by the Committee on Payment and Settlement Systems (now known as the Committee on Payments and Market Infrastructures) and the International Organization of Securities Commissions

PRC • The People’s Republic of China

QME • Qianhai Mercantile Exchange Co., Ltd.

RMB • Renminbi

Senior Management • Chief Executive Officer and other members of senior management of HKEX as set out in the Board of Directors and Senior Management section of this Annual Report

SEOCH • The SEHK Options Clearing House Limited

SFC • Securities and Futures Commission

SFO • Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong)

Shanghai-Hong Kong Stock Connect • A mutual market access programme that links the stock markets in Shanghai and Hong Kong, enabling investors in Hong Kong and Mainland China to trade and settle shares listed on the other market via the exchange and clearing house in their home market

Shareholder(s) • HKEX’s shareholder(s)

Share Award Scheme or the Scheme • The HKEX Employees’ Share Award Scheme

Shenzhen-Hong Kong Stock Connect • A mutual market access programme that links the stock markets in Shenzhen and Hong Kong, enabling investors in Hong Kong and Mainland China to trade and settle shares listed on the other market via the exchange and clearing house in their home market

Southbound Trading or Stock Connect

Southbound • Mainland investors trading in eligible securities that are listed on the Stock Exchange through Stock Connect

SPAC(s) • Special purpose acquisition company(ies)

SSE • Shanghai Stock Exchange

STAGE • HKEX’s Sustainable and Green Exchange

Stock Connect • Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect

SZSE • Shenzhen Stock Exchange

Tencent Music • Tencent Music Entertainment Group

Tuya • Tuya Inc.

UK • United Kingdom

US • United States of America

US\$/USD • United States dollar

Zhihu • Zhihu Inc.

\$/HK\$/HKD • Hong Kong dollar

\$bn/bn • Hong Kong dollar in billion/billion

\$m • Hong Kong dollar in million

£/GBP • Pound sterling

1H, 2H • First half, second half (of the year)

Q1, Q2, Q3, Q4 • First quarter, second quarter, third quarter, fourth quarter (of the year)



**Hong Kong Exchanges and
Clearing Limited**

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