HONG KONG MONETARY AUTHORITY
香港金融管理局

2022
ANNUAL REPORT

HKMA at a Glance

The Hong Kong Monetary Authority (HKMA) is the government authority in Hong Kong responsible for maintaining monetary and banking stability.

The HKMA's four main functions are:

- maintaining currency stability within the framework of the Linked Exchange Rate System;
- promoting the stability and integrity of the financial system, including the banking system;
- helping to maintain Hong Kong's status as an international financial centre, including the maintenance and development of Hong Kong's financial infrastructure; and
- managing the Exchange Fund.

The HKMA is an integral part of the Hong Kong Special Administrative Region Government but operates with a high degree of autonomy, complemented by a high degree of accountability and transparency. The HKMA is accountable to the people of Hong Kong through the Financial Secretary and through the laws passed by the Legislative Council that set out the Monetary Authority's powers and responsibilities. In his control of the Exchange Fund, the Financial Secretary is advised by the Exchange Fund Advisory Committee.

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10:00 a.m. – 1:00 p.m., Saturday
(except public holidays)

The Centre consists of an exhibition area and a library containing materials on Hong Kong's monetary, banking and financial affairs and central banking topics.

Contents

Please refer to the *Guide to Hong Kong Monetary, Banking and Financial Terms* on the HKMA website for brief explanation of some of the terms used in this *Annual Report*.

The *Banking Stability* chapter in this *Annual Report* is the report on the working of the Banking Ordinance and the activities of the office of the Monetary Authority during 2022 submitted by the Monetary Authority to the Financial Secretary in accordance with section 9 of the Banking Ordinance.

Chief Executive's Statement

2022 was a year of making headway against headwinds.

We had a dim start to 2022, with the Omicron COVID-19 variant still weighing on global growth, while inflationary pressure continued to build. The subsequent outbreak of conflict between Russia and Ukraine spurred inflationary pressures, leading to the frontloading of major central banks' monetary tightening, amplifying volatility in global financial markets and heightening the risk of slower economic growth. Here at home, the fierce and rapid spread of the fifth wave of COVID-19 dealt a further blow to the economy, and the negative publicity surrounding the COVID-related restrictions led to misconceptions threatening the reputation of Hong Kong as an international financial centre (IFC). For the year as a whole, Hong Kong's real gross domestic product shrank by 3.5%.

Despite such headwinds, we continued to safeguard the monetary and financial stability of Hong Kong and press ahead with developmental initiatives in key strategic areas to further strengthen Hong Kong's position as an IFC. After three years of travel restrictions, we have successfully shown the world, and let visitors experience for themselves, that Hong Kong is back! Nothing speaks louder than the overwhelming response we received for the Global Financial Leaders' Investment Summit last November, with global financial leaders travelling from all over the world to attend the Summit in person.

Looking ahead, the external environment is still full of unprecedented uncertainties. Although risks appear tilted to the downside, the re-opening of the Mainland economy will bring renewed momentum to the Hong Kong economy and the region more broadly. At the HKMA, we will continue to fulfil our mandate of safeguarding monetary and banking stability in Hong Kong, and actively pursue developmental opportunities to showcase and strengthen our competitiveness as an IFC. We also remain committed to contributing to a more climate resilient and sustainable world. This year, we are publishing a standalone *Sustainability Report 2022* together with the *Annual Report 2022* to cover in more detail our initiatives in strengthening Hong Kong's role as a green and sustainable finance hub, as well as our own efforts in being a responsible investor and a sustainable organisation.

Chief Executive's Statement

Monetary and financial systems: resilience remains intact

Since its establishment in 1983, the Linked Exchange Rate System (LERS) has been through many economic cycles and weathered a variety of external shocks. The year 2022 was yet another testimony to the resilience of the LERS. Amid aggressive monetary tightening by the US Federal Reserve (Fed), the weak-side Convertibility Undertaking (CU) was triggered 41 times between May and November 2022, and in accordance with the established mechanism, the HKMA bought a total of HK$242.1 billion from the market in an orderly and transparent manner. During this time, the Hong Kong dollar exchange and money markets continued to function smoothly, reflecting the robustness of the LERS.

This confidence in the LERS is a result of the solid foundation formed over the years. As reiterated in the International Monetary Fund's *External Sector Report 2022*, the credibility of the LERS is ensured by factors including a transparent set of rules, ample foreign exchange reserves, a prudent fiscal framework, robust financial regulation and supervision, and a flexible economy.

We firmly believe that in addition to its robust mechanism, confidence in the LERS is supported by our proactive communications work in helping the public understand our systems as well as effective surveillance and contingency planning on all fronts. Our social media campaign on the LERS mechanism certainly helped maintain strong confidence in the LERS amid multiple triggering of the weak-side CU during the year. Within the HKMA, we have stepped up our market surveillance by employing data analytics to enable timely responses to emerging market issues.

Despite the macro challenges and heightened credit risk, Hong Kong's banking system remained stable throughout the year, with strong capital and liquidity positions. As at end-2022, the consolidated total capital ratio of local banks stood at 20.1%, well above the international minimum requirement of 8%. The Liquidity Coverage Ratio of large banks edged up to 162.3% as of the fourth quarter of 2022, comfortably above the statutory minimum requirement of 100%. While the asset quality of banks deteriorated modestly amid the challenging credit landscape, with the classified loan ratio rising to 1.38% as at end-2022, this level remains healthy and below the long-run historical average of 1.8% since 2000.

Banking sector: robustness underpinned by effective supervision

Three years into the pandemic, and amid a multitude of increased challenges including intensified geopolitical tensions and monetary tightening by major central banks, the Hong Kong banking sector remained resilient while continuing its critical role in supporting the economy. Such robustness is underpinned by strong risk management practices and effective supervision over the years.

A major supervisory challenge in the past year was to ensure the banking sector continued to provide needed relief to customers in the wake of the fifth wave of COVID-19 infections and lingering uncertainties surrounding the economy, while at the same time maintaining sound credit risk management. The Pre-approved Principal Payment Holiday Scheme was further extended, but with the introduction of an added voluntary partial repayment option that allowed borrowers to repay part of the principal, helping customers prepare for an eventual resumption of normal repayment.

Another main supervisory effort in 2022 was increased surveillance of banks' market and liquidity risk exposures, in light of the heightened market volatilities brought about by the aggressive tightening of monetary policy amongst the major economies. We carried out in-depth assessment of the likely impacts of synchronised monetary tightening on banks and introduced new scenarios into stress tests to assess banks' resilience to cope with prolonged liquidity stress.

At the same time, we continued to take forward-looking action to promote effective risk management in several areas. On operational and cyber resilience, we provided guidance to support banks in developing an integrated and holistic framework to become operationally resilient, and we also provided detailed supervisory guidance on specific areas of banking operations, such as the use of cloud computing in light of growing cloud adoption. Meanwhile, we stepped up efforts in tackling phishing scams, as well as consumer and investor protection more broadly amid increasing digitalisation.

Chief Executive's Statement

While working to maintain the resilience of the banking sector, we also endeavour to promote financial inclusion and enhance access to banking services. Banks have responded positively to our call for the provision of basic banking services, and have set up new branch and self-service facilities at large-scale public housing estates in new development areas. In view of the difficulty faced by many customers in Hong Kong in accessing their Mainland accounts due to COVID-related travel restrictions, we worked closely with the relevant parties to facilitate reactivation of about half a million Mainland bank accounts without the need for the affected account holders to visit the Mainland in person.

Another important strategic area for the continued development of the banking sector is capacity building. The banking sector continued to have strong demand for talented professionals to cater for business expansion. Building on its talent development strategy, "Connecting Talent to the Future", the HKMA implemented a number of initiatives in the past year to help attract, develop and retain talent for the banking sector, focusing on upskilling and reskilling the existing workforce, and grooming the younger generation to build a sustainable pipeline of future talent.

International financial centre: Hong Kong is back!

In 2022, we devoted substantial effort to restoring Hong Kong to the centre stage after the prolonged period of COVID-related travel restrictions. The Global Financial Leaders' Investment Summit in November brought over 200 international and regional leaders from global financial institutions to Hong Kong in person, and attracted attention and enthusiasm from around the world. The success of the Summit — despite taking place amid the first No. 8 typhoon signal in November in 50 years — sent a powerful message to the world that Hong Kong is back, stronger and better than ever. We are happy to see that the Summit has created positive ripple effects and many global financial institutions and international organisations are now hosting or planning to host their events in Hong Kong.

In addition to bringing people back to Hong Kong, recognising the power of face-to-face connection, we at the HKMA, myself included, have been taking every opportunity to physically represent Hong Kong at key international meetings. This enables us to make active contributions to global policy discussions and, riding on the occasion presented by these overseas visits, to meet with the group management of global financial institutions to promote Hong Kong and update them on Hong Kong's robust financial system and the opportunities it can provide under "one country, two systems".

To make sure Hong Kong stays competitive as an IFC, we continued to push boundaries for market development across our key strategic focus areas of fintech, Mainland opportunities and green and sustainable finance. We also further enhanced our financial platform to provide leading services to attract more businesses to Hong Kong. For details of our efforts relating to green and sustainable finance, readers may refer to the *Sustainability Report 2022*.

Chief Executive's Statement

Fintech

Building on the "Fintech 2025" strategy unveiled in June 2021, we made notable progress across the five focus areas under this strategy during 2022.

With "All banks go fintech", we achieved positive results with extensive and growing adoption of fintech by the Hong Kong banking sector across different business areas and technology types, according to the findings of the Tech Baseline Assessment. It is encouraging to see that our work since 2017 to progressively promote and support digitalisation has been well received by banks and continues to bear fruit. We will continue to closely engage with the industry to further promote developments in selected fintech business areas and technology types based on the results of the Assessment.

Important milestones were reached during the year on our Central Bank Digital Currencies (CBDCs) journey. The Multiple CBDC Bridge (mBridge) project entered the pilot phase and is among the first of its kind to successfully settle real-value, cross-border transactions on behalf of corporates. On the retail front, technical testing of the cross-boundary use of the e-CNY has entered the second phase, centering on the use of the FPS to top up the e-CNY wallet. For e-HKD, we have designed a three-rail approach to pave the way for possible future issuance and launched a Rail 2 Pilot to invite industry to dive into use cases.

Fintech relies on data to unlock its full potential, and the launch of Commercial Data Interchange (CDI) in October is a big step forward in this respect. CDI provides a consent-based common data infrastructure that enables financial institutions to more easily access enterprises' commercial data, and in turn, facilitates easier access to finance by corporates especially small and medium-sized enterprises (SMEs). As at end-2022, CDI had facilitated over 1,000 SME loans amounting to more than HK$1.9 billion.

Last but not least, while embracing the benefits of financial innovation, we are always cognisant of the need to monitor and tackle possible risks. We are closely following developments in the virtual asset space and contributing to international discussions on relevant regulatory issues. Having considered the feedback from public consultation and international standards, we will adopt a risk-based, "same risk, same regulation" approach[1] in developing a regulatory regime for stablecoins and in scoping in stablecoin structures for regulation under the proposed regime. As a priority, we will start with regulating stablecoins that purport to reference to one or more fiat currencies, given the higher and more imminent monetary and financial stability risks that they may pose. We believe that with the right guardrails in place, the industry can explore the potential of digital finance in a safe and healthy manner.

Technology is re-shaping our future. We and the banking sector are actively gearing up for this "new normal". We are confident that this fintech ecosystem we are building will help us unlock the full potential of fintech and contribute to enhancing our competitiveness as an IFC.

Mainland opportunities

Hong Kong's unique edge in offshore renminbi business has been a key feature of Hong Kong as an IFC. In the past year, we have made significant progress in the continued development of the offshore renminbi market in Hong Kong. First, in July, the People's Bank of China and the HKMA enhanced the currency swap agreement to a long-standing arrangement with expanded size, differentiating Hong Kong from other jurisdictions in terms of being the only one whose arrangement is not subject to renewal, and also having the largest swap size. This has reinforced Hong Kong's firm foothold as a renminbi hub and will facilitate the expansion of market activities and products. On the back of this, we enhanced our Renminbi Liquidity Facility, which will further support market liquidity and enable market players to offer a more comprehensive range of products and services.

[1] This means that authorities should focus on the functions performed and risks posed by an activity, and apply the appropriate regulatory framework in the same manner as they would apply it to entities performing the same functions or activities, and posing the same risks. For more details, see *inSight* on *Crypto-assets and stablecoins* (https://www.hkma.gov.hk/eng/news-and-media/insight/2022/01/20220112/).

Chief Executive's Statement

Apart from enhancing offshore renminbi liquidity, we have further enhanced our mutual market access schemes with the Mainland, which will help facilitate the development of more diverse renminbi products in Hong Kong. Swap Connect, announced in July 2022, will expand the financial co-operation between Hong Kong and the Mainland into the derivatives market, namely interest rate swap markets, creating synergy with Bond Connect to facilitate global investors' management of interest rate risks for their bond investment on the Mainland. It will also strengthen Hong Kong's status as a risk management centre. We are now actively taking forward the development work to prepare for its launch this year. Others in our family of Connect schemes are performing well with robust market uptake and various enhancements in the pipeline including expansion of the eligible product scope of the Cross-boundary Wealth Management Connect.

The third important area relates to our own financial infrastructure. We have devised a multi-year plan to modernise the Central Moneymarkets Unit into a major international central securities depository in Asia. This will better support the growing connectivity between the Mainland and international financial markets.

As a leading offshore renminbi hub, the year 2022 continued to see remarkable growth in renminbi businesses including bank deposits, trade settlement, payments and offshore bond issuance. The Bank for International Settlements 2022 Triennial Survey of Foreign Exchange and Derivatives Market Turnover reaffirmed Hong Kong as the largest offshore renminbi foreign exchange and interest rate derivatives market, with the average daily turnover of renminbi foreign exchange transactions growing by 78% compared with the last survey conducted three years ago.

Building on these solid achievements, we will continue to work closely with our Mainland counterparts and market participants to enhance existing schemes and step up co-operation on different fronts, which will help strengthen Hong Kong's position as an offshore renminbi hub, as an important underpinning of our status as an IFC.

Hong Kong's financial platform

Apart from staying on course with our strategic focus areas above, we have continued to work diligently in strengthening the competitiveness of our financial platform. I would like to share with you some of our progress made on this front.

To enhance our attractiveness as a family office hub in the region, we have worked with other Government agencies and the financial industry to develop a facilitating environment for family offices to set up and operate in Hong Kong, including the introduction of legislative amendment last year to provide more facilitative tax arrangements for family offices operating in Hong Kong.

On bond market development, we have arranged the inaugural issuance of the longest tenor, 20-year Hong Kong dollar Government Bonds in May 2022, and assisted the Government to issue the world's first tokenised government green bond in February 2023, marking a significant step towards realising the full potential of distributed ledger technology in the bond market. We also started to see the footprint of local government issuers. The governments of the Shenzhen municipality and Hainan province debuted their offshore bond issuances during 2021 and 2022 respectively. These issuances included blue bonds, green bonds and sustainability bonds, enriching the range of renminbi financial products available in the Hong Kong market.

Chief Executive's Statement

Exchange Fund: investing prudently for long-term growth

The investment environment in 2022 was exceptionally volatile, being the only time in almost half a century that simultaneous losses were recorded across bonds, equities, and major currencies against the US dollar. While the Exchange Fund could not stay unscathed, the investment loss of -4.5% sustained in 2022 was relatively mild as compared to the performance of major market indices and multi-asset funds. Our diversified long-term asset allocation portfolio, as well as defensive measures and strategic adjustments in response to changes in the external landscape, have played a role in mitigating the destructive impact of the significant market turbulence during the year. Meanwhile, the Long Term Growth Portfolio achieved an annualised internal rate of return of 12.6% since its inception in 2009 up to the end of 2022.

The global investment environment in 2023 is likely to be clouded by uncertainties surrounding the path of monetary tightening by major central banks and geopolitical tensions, among others. Committed to the principle of "capital preservation first while maintaining long-term growth", the HKMA will continue to navigate the complex investment environment in a prudent and agile manner. We will also step up efforts in incorporating ESG considerations in our investment approach and moving towards the target of net-zero greenhouse gas emissions by 2050 for the Investment Portfolio. Details on our progress in the responsible investment journey can be found in the *Sustainability Report 2022*.

HKMA: serving Hong Kong with commitment

The year 2022 was a bumpy ride, but the relaxation of anti-pandemic measures in Hong Kong and the re-opening of the Mainland economy should have some stabilising effect on the Hong Kong economy. In the face of the significant uncertainties ahead, the HKMA will stay vigilant and respond rapidly to emerging risks. As always, at the HKMA we will continue to strengthen our capabilities and keep pace with the fast-evolving financial landscape, in order to effectively safeguard monetary and financial stability. At the same time, we will pursue market development initiatives to ensure Hong Kong remains competitive as an IFC.

This year marks the 30th anniversary of the establishment of the HKMA. Over these 30 years, we have come a long way from an infant central banking institution to an integral part of the global central banking community. Indispensable to this achievement is the professionalism, hard work and dedication of many generations of the HKMA team. We will continue to serve Hong Kong with the same commitment going forward. While we may encounter some turbulence ahead, I am confident that together we will ride it out and Hong Kong's role as an IFC will go from strength to strength in the years to come.

Eddie Yue
Chief Executive

Highlights of 2022

Economic and Financial Environment

Hong Kong's economy contracts visibly in 2022 amid multiple headwinds including the fifth wave of COVID-19, tightened financial conditions and a challenging external environment. The labour market first deteriorated before improving, while inflation remains moderate. Economic growth for 2023 is expected to recover from a low base, riding on the re-opening of the Mainland and Hong Kong.

The banking sector in Hong Kong continues to be resilient in 2022, underpinned by robust capital and liquidity positions. Asset quality remains at a healthy level.

Monetary Stability

Amid tightening of the US monetary policy, the Hong Kong dollar softened, with the weak-side Convertibility Undertaking triggered multiple times during the year. Nevertheless, the Hong Kong dollar exchange and money markets continue to operate in a smooth and orderly manner. This once again demonstrates the strength and resilience of the Linked Exchange Rate System.

Reserves Management

Amid the exceptionally volatile investment environment, with prices of multiple asset classes falling at the same time, the Exchange Fund records an overall negative investment return of 4.5% in 2022, which is relatively mild as compared to the performance of the majority of multi-asset funds in the market.

The HKMA also continues its efforts in propelling responsible investments and asset diversification. Meanwhile, Long-Term Growth Portfolio records an annualised internal rate of return of 12.6% since its inception in 2009.

Banking Stability

The HKMA steps up supervision of banks' credit and market risk management amid heightened volatilities in the financial markets. The HKMA also works closely with banks to enhance their operational and cyber resilience in light of escalating cyber threats and accelerating digital transformation in the banking sector.

Further consumer protection measures are implemented in respect of "Buy Now, Pay Later" products and additional payment arrangement for property refinancing. The HKMA also works with fellow regulators on a regulatory framework for virtual assets, issues guidance on investment products distribution and introduces a new regulatory regime on trust business. The Credit Reference Platform under the Multiple Credit Reference Agencies Model for consumer credit data is also launched.

The HKMA continues to work with banks to strengthen Hong Kong's anti-money laundering and counter-financing of terrorism (AML/CFT) ecosystem and enhance the response to scams. Further efforts are made to promote the use of data and technology through the AML Regtech Lab series while accelerating the adoption of supervisory technology in the HKMA's AML work.

The HKMA makes good progress on implementing international supervisory standards locally, including those on capital adequacy and disclosure. The HKMA also works with the banking industry to build a sustainable pipeline of future talents and to upskill practitioners.

To ensure a credible resolution regime, the HKMA develops a new resolution standard, conducts a regional crisis simulation exercise and achieves a key milestone where a new layer of loss-absorbing capacity resources is built up at all domestic systemically important banks.

Highlights of 2022

International Financial Centre

The success of the Global Financial Leaders' Investment Summit solidifies Hong Kong's status as an international financial centre and creates positive ripple effects.

The Currency Swap Agreement between the People's Bank of China and the HKMA is enhanced, which further strengthened Hong Kong's role as the global offshore renminbi business hub. The HKMA also works with fellow regulators and stakeholders on the launch of Swap Connect and the Dual Counter Market Making regime for trading renminbi-denominated stocks in Hong Kong. Efforts are also made to develop the Central Moneymarkets Unit into a major international central securities depository in Asia.

On strengthening the competitiveness of Hong Kong's financial platform, notable progress is made in areas including bond issuance, asset and wealth management, corporate treasury centres, and green and sustainable finance.

The HKMA also continues to push forward the "Fintech 2025" strategy to promote the adoption of fintech by the financial sector and bolster Hong Kong's position as a fintech hub. The Faster Payment System sees steady growth in adoption along with enhanced functionalities.

Corporate Functions

The HKMA maintains effective communication with the community and the market through different channels to promote public understanding about its policies and operations.

Within the organisation, the HKMA conscientiously builds an agile and sustainable workforce, institutes rigorous financial discipline and upgrades information technology capabilities to adapt to changes and ensure effective implementation of its policies and initiatives.

Highlights of 2022

Key Figures for 2022

Monetary Stability

HKD exchange rate	7.808 per USD
Base Rate	4.75%
Backing Ratio	110.1%
Monetary Base	HK$ 1,916.2 billion
Aggregate Balance (before Discount Window)	HK$ 96.3 billion

Banking Stability

Total assets	HK$ 27.0 trillion
Capital adequacy ratio	20.1%
Loan growth#	-3.0%
Liquidity Coverage Ratio (Q4 2022)	162.3%
Liquidity Maintenance Ratio (Q4 2022)	63.2%
Classified loan ratio (all AIs)	1.38%
Loan-to-deposit ratio	68.5%
Average loan-to-value ratio (Dec 2022)	57%
Average debt servicing ratio (Dec 2022)	39%
G-SIBs for which the HKMA is a member of the Crisis Management Group or Resolution College	14
G-SIBs hosted in Hong Kong	All 30 G-SIBs
Loss-absorbing capacity of D-SIBs (Dec 2022)	25.4% of RWA

Licensees

155 licensed banks	15 restricted licence banks
12 deposit-taking companies	37 approved money brokers

Supervisory activities#

183 off-site reviews	112 on-site examinations
	579 thematic reviews[1]

Sources: Bank for International Settlements, International Capital Market Association, SWIFT and HKMA

Unless specified, figures are at the end of 2022.

Figures for the year of 2022 as a whole.

AIs: Authorized institutions
CMU: Central Moneymarkets Unit
CPI: Consumer Price Index
D-SIBs: Domestic systemically important banks
EF: Exchange Fund
FPS: Faster Payment System
G-SIBs: Global systemically important banks
HKD: Hong Kong dollar
IFFO: Infrastructure Financing Facilitation Office
LTGP: Long-Term Growth Portfolio
RMB: Renminbi
RTGS: Real Time Gross Settlement
RWA: Risk-weighted amount
SVF: Stored value facility

Highlights of 2022

International Financial Centre

RMB deposits (incl. outstanding Certificates of Deposit)
1 *largest offshore RMB liquidity pool*
RMB **981.7 billion**

Established Limited Partnership Funds
577

Availability of four RTGS systems and CMU#
100%[2]

Hong Kong's share of RMB SWIFT payments globally#
1 *in the world*
>70%

RMB RTGS average daily turnover#
RMB **1,654.0 billion**

HKD RTGS average daily turnover#
HK$ **928.1 billion**

Asian international bond issuance#
1 *largest arranging hub*
US$ **103.6 billion equivalent**

Outstanding RMB loans
RMB **191.7 billion** (+17%)

Offshore RMB bond issuance#
RMB **143.4 billion** (+31%)

Asian international green and sustainable bond issuance#
1 *largest arranging hub*
US$ **27.8 billion equivalent**

FPS registrations
11.5 million (+19%)

Average daily real-time transactions of FPS#
940,000 (+40%)

Average daily turnover under Northbound Bond Connect#
RMB **32.2 billion** (+25%)

IFFO partners
95

SVF accounts
61.5 million

Value of SVF transactions#
HK$ **582.0 billion** (+24%)[3]

Reserves Management

EF investment income#
HK$ **-205.4 billion**

EF investment return#
-4.5%

EF compounded annual investment return (since 1994)
4.5%
(>2.0% increase in HK composite CPI over the same period)

EF assets
HK$ **4,008.0 billion**

Market value of LTGP investments
HK$ **484.7 billion**

LTGP annualised internal rate of return (since 2009)
12.6%

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1 Including self-assessments by authorized institutions of compliance with the Code of Banking Practice.
2 About 99.99% if including downturn caused by external factors.
3 The HKMA has published "add value" transactions data since 2022. The 2022 figure has included the relevant data, and the comparison against the 2021 figure has taken into account the corresponding adjustment.

Calendar of Events 2022

Monetary Stability

26 May
The Government issues HK$0.5 billion inaugural 20-year Hong Kong dollar Government Bonds through tendering under the Institutional Bond Issuance Programme.

4 Jul
The People's Bank of China (PBoC) and the HKMA announce the enhancement of the Currency Swap Agreement to become a long-standing arrangement with no need for renewal. Its size is also expanded from RMB500 billion/HK$590 billion to RMB800 billion/HK$940 billion.

13 Jul
The HKMA issues the renewed Statement of Commitment to the Foreign Exchange Global Code to demonstrate its commitment to adhering to the updated Code when acting as a market participant in the foreign exchange market.

22 Jul
The HKMA announces the enhancement of the Renminbi Liquidity Facility, including increasing the size and streamlining the operation.

Banking

28 Jan
The HKMA and the Securities and Futures Commission (SFC) jointly issue a circular to provide updated guidance to intermediaries concerning virtual asset-related activities to accord protection to customers.

28 Jan
The HKMA provides updated guidance to banks on managing money laundering and terrorist financing risks associated with virtual assets and virtual asset service providers.

8 Feb
The HKMA announces that the Banking Talent Programme is extended for six months.

23 Feb
HKMC Insurance Limited (HKMCI), a wholly-owned subsidiary of The Hong Kong Mortgage Corporation Limited (HKMC), announces amendments and extended coverage of the Mortgage Insurance Programme for completed residential properties.

23 Feb
The 100% Personal Loan Guarantee Scheme (PLGS) is enhanced (effective from 19 April) and the application period is extended to end-April 2023.

23 Feb
The HKMA, together with the Banking Sector Small and Medium-sized Enterprise (SME) Lending Coordination Mechanism, announces that the Pre-approved Principal Payment Holiday Scheme (PPPHS) will be extended for six months to end-October, except for repayment of trade loans which is deferred by 90 days. The PPPHS will also offer a one-year partial principal repayment option to those customers who are financially capable and willing to resume principal repayment gradually.

The SME Financing Guarantee Scheme (SFGS) is also enhanced (effective from 1 April) and the application period is extended to 30 June 2023.

Calendar of Events 2022

Banking

1 Apr The HKMA and the Insurance Authority (IA) introduce measures to enhance protection of customers in the use of premium financing when taking out life insurance policies.

14 Apr The HKMA provides guidance to banks in Hong Kong to facilitate reactivation of Mainland bank accounts for Hong Kong public amid travel restrictions under the pandemic.

26 Apr The HKMA launches the "Regtech Knowledge Hub" to encourage greater sharing of Regtech adoption experience and expertise within the Regtech ecosystem in Hong Kong.

Regtech Knowledge Hub

28 Apr The HKMA announces the launch of the Banking Graduate Trainee Programme jointly with the banking industry, with the aim to enlarge the talent pool for the fast-growing areas of the banking sector.

5 May The HKMA endorses the Mandatory Reference Checking Scheme to be implemented by the Hong Kong Association of Banks (HKAB) and the DTC Association, with the aim of addressing the "rolling bad apples" phenomenon in the banking sector in Hong Kong.

6 May The PLGS starts receiving loan applications from individual landlords affected by rental enforcement moratorium until 31 October.

25 May The HKMA publishes the Report of the *Focused Review on Incentive Systems of Front Offices in Retail Banks*, with a view to promoting sound culture in the banking sector.

27 May The HKMA issues a Code of Practice for Trust Business and the related new supervisory policy manual module to enhance regulation and supervision of trust business in Hong Kong.

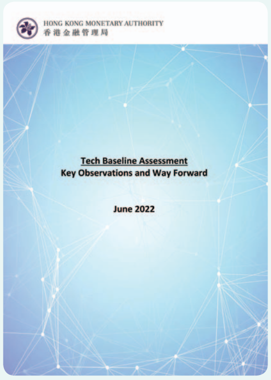
31 May HKMC Annuity Limited, a wholly-owned subsidiary of the HKMC, announces the launch of enhancement measures and promotional offer for the HKMC Annuity Plan. The enhancement measures include increasing the withdrawal limit of the Special Withdrawal for Medical and Dental Expenses, as well as the individual premium cap.

Calendar of Events 2022

Banking

23 Jun

The HKMA announces the results of the Tech Baseline Assessment and its plans for further supporting the industry's adoption of fintech.



1 Jul

The Banking (Capital) (Amendment) Rules 2022 come into operation to implement the Basel capital requirements for banks' equity investments in funds.

6–8 Jul

The HKMA takes part in the design and execution of a three-day regional crisis simulation exercise involving 10 authorities including central banks, supervisory and resolution authorities as well as deposit insurers in Asia Pacific, with a view to enhancing cross-border co-operation.

8 Jul

The HKMA provides guidance to authorized institutions on selling of protection linked plan, so as to accord protection to customers.

8 Jul

The HKMA issues guidance to banks and stored value facility (SVF) licensees on the key insights and implications arising from the *Hong Kong Money Laundering and Terrorist Financing Report 2022* published by the Government.

20 Jul

The HKMA welcomes the announcement of HKAB on providing customers with an additional payment arrangement in respect of residential mortgage refinancing transactions as an alternative. This additional payment arrangement for property transactions commences on 7 November.

21 Jul

The HKMA and Cyberport, supported by Deloitte, co-organise the second Anti-Money Laundering (AML) Regtech Lab (AMLab 2), which focuses on low-barrier, easy-to-implement "enabling technologies".

2 Sep

The HKMA introduces a series of consumer protection measures in relation to "Buy Now, Pay Later" products of banks, to promote responsible borrowing.

8 Sep

The HKMA announces the launch of a one-stop online resource platform "Banking GPS" and the second round of the Future Banking Bridging Programme.

Banking

16 Sep

The HKMA, together with the Banking Sector SME Lending Coordination Mechanism, announces that the PPPHS will be extended for three months to end-January 2023.

On the same day, the HKMCI announces the extended principal moratorium arrangement under the SFGS accordingly. Borrowers may apply for principal moratorium of up to 36 months.

26 Sep

The HKMA finalises the implementation details of the Pilot Scheme on Training Subsidy for Fintech Practitioners and officially launches the Scheme for the banking sector.

Pilot Scheme on Training Subsidy for Fintech Practitioners

27 Sep

The SFC and the HKMA release the findings of their second joint survey on the Sale of Non-exchange Traded Investment Products by licensed corporations (LCs) and registered institutions (RIs). A total of 327 LCs and 63 RIs reported selling investment products with an aggregate transaction amount of HK$5,015 billion during 2021, the number of investors increased 5% to 770,000.

27 Sep

The HKMA launches the Enhanced Competency Framework on Compliance in collaboration with the banking industry to establish a set of common and transparent competency standards for raising the professional competence of relevant practitioners who are working in the compliance function of banks.

6 Oct

The HKMA, together with HKAB, the banking and SVF sectors, supports the launch of an anti-fraud search engine "Scameter" by the Hong Kong Police Force which will enhance the prevention, detection and disruption of fraud in the community, and reduce financial losses of the public.

In addition to issuing practical guidance and updating relevant Frequently Asked Questions, the HKMA works with banking and SVF sectors to raise public awareness of fraud, through consumer educational messages on webpages and social media, as well as publishing an *inSight* article to draw attention to these efforts.

Calendar of Events 2022

Banking

20 Oct

The HKMA, together with the Banking Sector SME Lending Coordination Mechanism, announces that the PPPHS will be extended for six months to end-July 2023. The partial principal repayment arrangement under the PPPHS is also enhanced to facilitate financially capable corporates to gradually resume normal repayment.

The HKMCI also announces that the application period for the principal moratorium arrangement under the SFGS is extended by six months to end-June 2023. The maximum principal moratorium period is extended by six months to a total of 42 months.

21 Oct

The HKMA issues two circulars to update the requirements on the sale and distribution of loss-absorption products and provide guidance to facilitate suitability assessments.

24 Nov

The HKMA and Cyberport co-host the third AMLab (AMLab 3), with support from Deloitte. Building on the AMLab series, AMLab 3 uses network analytics to combat fraud risk and reduce losses from scams using mule account networks.

28 Nov

With the strong support of the HKMA, the Credit Reference Platform under the Multiple Credit Reference Agencies (CRAs) Model is launched, with a view to enhancing the service quality of consumer CRAs and reducing the operational risk of having only one commercially run service provider in the market.

7 Dec

The HKMA issues a circular to inform banks of the latest amendments to the Anti-Money Laundering and Counter-Terrorist Financing Ordinance, coming into effect in June 2023.

15 Dec

The HKMA hosts an AML seminar for the banking and SVF sectors, covering subjects including regulatory updates, AML Suptech and Regtech, source of wealth requirements, feedback on suspicious transaction reporting and updates on counter-proliferation financing risk.

23 Dec

The HKMA, the IA and the Mandatory Provident Fund Schemes Authority issue a joint circular to outline the key findings and good practices observed in their first-ever joint mystery shopping programme on the selling practice of intermediaries in respect of two tax-deductible products, namely Qualifying Deferred Annuity Policies and Mandatory Provident Fund Tax-deductible Voluntary Contributions.

31 Dec

All domestic systemically important banks in Hong Kong have built up a new layer of financial resources for loss absorption in resolution, representing a milestone in enhancing the resolvability of these banks and resilience of the banking system.

Calendar of Events 2022

International Financial Centre

12 Jan

The HKMA issues a discussion paper on crypto-assets and stablecoins, which sets out the HKMA's thinking on the regulatory approach for crypto-assets particularly payment-related stablecoins and invites views from the industry and public on the relevant regulatory approach.

27 Jan

The HKMA and the State Secretariat for International Finance under the Federal Department of Finance of Switzerland co-organise the fifth Hong Kong-Switzerland Financial Dialogue virtually.

Feb

The HKMA is re-appointed as the co-chair of the Evaluations and Compliance Working Group of the Financial Action Task Force, the global standard setting body for AML for a further two-year term.

11 Feb

The HKMC signs a Memorandum of Understanding on infrastructure loans framework with each of the 14 partner banks to set out the principal terms for potential infrastructure loan co-operation.

14 Feb

The Hong Kong Institute for Monetary and Financial Research (HKIMR), the research arm of the Hong Kong Academy of Finance (AoF), releases a new Applied Research report, titled *Demographic Changes and Long-Term Asset Markets: Opportunities and Developments in Hong Kong*.

8 Mar

The International Monetary Fund (IMF) releases the Staff Report for the 2022 Article IV Consultation with the Hong Kong Special Administrative Region, reaffirming Hong Kong's position as a major global financial centre with a resilient financial system, sound macroprudential policies, robust regulatory and supervisory frameworks, and recognises that Hong Kong's financial sector had continued expanding robustly, even during the pandemic.

The IMF also commends Hong Kong's significant progress in addressing climate change and recognises the Government's ongoing efforts to enhance the green and sustainable finance ecosystem.

Calendar of Events 2022

International Financial Centre

30 Mar

The Green and Sustainable Finance Cross-Agency Steering Group publishes its preliminary feasibility assessment of carbon market opportunities for Hong Kong. Based on the assessment, the Steering Group announces its next steps to support the development of Hong Kong as a regional carbon trading centre.

12 Apr

The HKIMR and AoF co-host a webinar on *Macroeconomic Developments, Fed Tightening and Offshore RMB Market Development*, attracting about 0.84 million real time online views.

27 Apr

The HKMA issues a discussion paper titled *e-HKD: A policy and design perspective* to set out and invite views on key policy and design issues for introducing retail central bank digital currency (CBDC), i.e. e-HKD, in Hong Kong.

3 May

The Alliance for Green Commercial Banks, co-launched by the HKMA and the International Finance Corporation, a member of the World Bank Group, co-hosts the *Green and Sustainable Capital Market Evolution Roundtable Session* with Standard Chartered virtually.

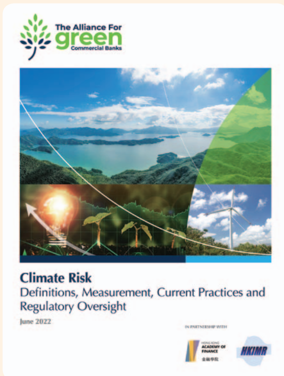
18 May

The Government issues the inaugural HK$20 billion three-year retail green bond under the Government Green Bond Programme. The issuance is well received by the public and the largest retail green bond issuance globally.

7 Jun

The Alliance for Green Commercial Banks announces onboarding of five of the world's leading financial institutions as cornerstone members, as well as four global and knowledge partners to contribute their expertise on everything from innovation and standardisation to academic points of view.

In addition, the Alliance and HKIMR jointly publish the first thought leadership paper, titled *Climate Risk: Definitions, Measurement, Current Practices and Regulatory Oversight*.

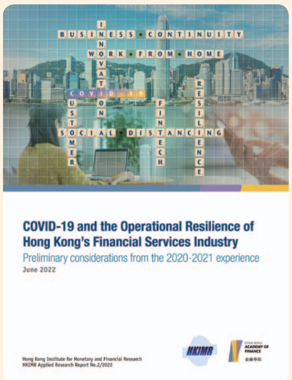


Calendar of Events 2022

International Financial Centre

15 Jun

The HKIMR releases a new Applied Research report, titled *COVID-19 and the Operational Resilience of Hong Kong's Financial Services Industry: Preliminary considerations from the 2020–2021 experience*.



17 Jun

The HKMA, together with the Bank of Israel and the Bank for International Settlements (BIS) Innovation Hub Hong Kong Centre, announces a joint research called Project Sela to take a deep dive into cybersecurity issues in the context of retail CBDC.

21 Jun

The Green and Sustainable Finance Cross-Agency Steering Group launches the Green and Sustainable Finance Training Information Repository, Internship Opportunities Repository and Data Source Repository, which helps to build capacity and enhance talent and data resources for the financial industry, as well as to support the financial sector in locating data sources for climate risk management and other green and sustainable finance-related analysis and research.

24 Jun

The HKIMR and the AoF co-host a webinar on *China's Property Sector — Transformation and Policy Choices* in a hybrid format, attracting about 1.13 million real time online views.

25 Jun

The HKMA participates in the BIS Renminbi Liquidity Arrangement, which has been developed with the PBoC to provide liquidity to central banks through a new reserve pooling scheme.

4 Jul

The PBoC, the SFC and the HKMA jointly announce Swap Connect, a new initiative for mutual access between interest rate swap markets in Hong Kong and the Mainland. With Northbound Trading commencing first in the initial stage, Swap Connect will create synergy with Bond Connect to facilitate global investors' management of interest rate risks for their onshore bond investment.

4 Jul

Stock Connect is expanded to include exchange-traded funds.

Calendar of Events 2022

International Financial Centre

7 Jul The HKMA joins the International Financial Consumer Protection Organisation as a member institution.

10 Aug Invest Hong Kong (InvestHK) and the HKMA jointly announce the addition of the CBDC track to the Global Fast Track 2022, allowing local and global firms to partner with the HKMA to boost the growth and adoption of fintech in Asia and beyond.

25 Aug The HKIMR co-organises a virtual workshop with the Asian Development Bank and the BIS on *Monetary Policy Spillovers*. More than 200 participants from global central banks, international financial institutions and academia attend the workshop.

31 Aug The HKMA issues the guidelines on the auditor's report for application for certification of funds for carried interest tax concession.

20 Sep The HKMA releases a position paper titled *e-HKD: Charting the Next Steps* to set out its policy stance on e-HKD and outline its next steps.

10 Oct The AoF launches 2023 intake of the Financial Leaders Programme (FLP) which nurtures the next generation of financial leaders with global perspectives and thought leadership capabilities.

12 Oct The Green and Sustainable Finance Cross-Agency Steering Group launches the Sustainable Finance Internship Initiative, which aims to create more internship opportunities in Hong Kong for students.

17 Oct The HKMC publishes its Social, Green and the Sustainability Financing Framework so as to expand and implement sustainability strategy as an integral part of its business strategy.

24 Oct The HKMA announces the official launch of Commercial Data Interchange (CDI). To ensure that all participants follow a common set of rules for proper, fair and secure exchange of commercial data, the HKMA also launches the CDI Framework detailing the governance model and structure.

24 Oct The HKMA welcomes issuance of offshore renminbi bonds in Hong Kong by the People's Governments of Hainan Province and Shenzhen Municipality, which will be lodged with the Central Moneymarkets Unit. The issuance by the People's Government of Hainan Province marks the first offshore bond issuance by a local government outside the Guangdong–Hong Kong–Macao Greater Bay Area.

Calendar of Events 2022

International Financial Centre

25 Oct

The HKMC announces the successful issuance of its inaugural social bonds in the institutional market. The transaction marks the world's first social bond issuance in dual-tranche denominated in Hong Kong dollar and offshore renminbi.

26 Oct

The HKMA, together with the BIS Innovation Hub Hong Kong Centre, the Bank of Thailand, the Digital Currency Institute of the PBoC and the Central Bank of the United Arab Emirates, publishes a report titled *Project mBridge: Connecting economies through CBDC* to deliver the results and key lessons learnt of the pilot conducted under Project mBridge.

31 Oct to 4 Nov

The HKMA co-organises Hong Kong FinTech Week 2022 with InvestHK, attracting a record high of over 30,000 visitors and more than five million views.

The HKMA also announces new initiatives to spur fintech development in Hong Kong, including 1) to develop AML Suptech tool, using granular data from multiple banks in a pilot to test the use of network analysis to combat mule accounts and protect customers from fraud and financial crime losses; and 2) to pilot a tokenised government green bond issuance to test out the use of distributed ledger technology to issue bonds in Hong Kong.

Calendar of Events 2022

International Financial Centre

1–3 Nov

The HKMA hosts the Global Financial Leaders' Investment Summit. The Summit welcomes over 200 international and regional leaders from around 120 global financial institutions including banks, securities firms, asset owners and managers, private equity and venture capital firms, hedge funds, and insurers. More than 40 of these institutions are represented by their group Chairman or Chief Executive Officer.

2 Nov

The HKIMR and the AoF co-host a webinar on *Inflation in the Aftermath of COVID-19: Was It Inevitable or Avoidable?* as a side event along the Global Financial Leaders' Investment Summit. About 200 economists attend online.

23 Nov

The HKIMR organises its 12th Annual International Conference on the Chinese Economy titled *The Next Phase of China's Economic Development*. The conference attracts 75 on-site participants and over 1.18 million real time online views.

13 Dec

The Government launches the three-year Pilot Green and Sustainable Finance Capacity Building Support Scheme to encourage practitioners, students and graduates to participate in training related to green and sustainable finance.

14 Dec

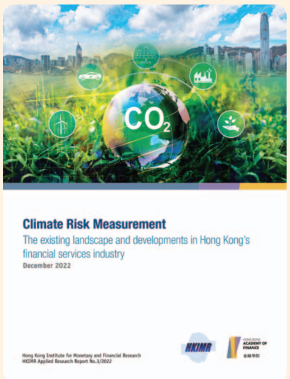
The AoF holds its Fellowship Conferment cum FLP Graduation Ceremony. The AoF confers Fellowship to three distinguished leaders in the field of finance who have made outstanding contributions to Hong Kong. The recipients are namely Dr Norman T.L. Chan, Professor Edward K.Y. Chen, and Dr David Y.K. Wong.

The Fellowship Conferment is immediately followed by the first Graduation Ceremony of the FLP. The 2022 FLP graduates comprise 19 promising future financial leaders from diverse backgrounds.

International Financial Centre

19 Dec

The HKIMR releases a new Applied Research report, titled *Climate Risk Measurement: The Existing Landscape and Developments in Hong Kong's Financial Services Industry*.



20 Dec

The Green and Sustainable Finance Cross-Agency Steering Group announces collaboration with CDP, an international non-profit organisation that runs the global environmental disclosure system for companies, to jointly enhance climate data availability and sustainability reporting in Hong Kong.

As part of this collaboration, the Steering Group and CDP has developed a Climate and Environmental Risk Questionnaire for Non-listed companies/SMEs. This is the first cross-sector reporting template designed for first-time reporting corporates in Hong Kong, especially SMEs.

Corporate Functions

5 Sep

The HKMA launches videos and cross-media awareness campaign themed "Protect your Personal Digital Keys; Beware of Fraudulent Links!" to further remind the public to stay vigilant against fraudulent hyperlinks embedded in SMS messages and emails purportedly from banks.

"Protect your Personal Digital Keys; Beware of Fraudulent Links!" Videos

Priorities for 2023 and Beyond

While Hong Kong's economy has shown signs of recovery entering 2023, the external environment remains full of challenges and uncertainties. The recent emergence of banking stress in the US and Europe with a failure of a few domestic US banks in March 2023 have sent ripples through global markets, while monetary policy tightening by major central banks is likely to translate into slower global growth or even recession in 2023. Meanwhile, geopolitical tensions and ongoing threats of de-globalisation are likely to continue to weigh on global trade and spark volatility in global financial markets from time to time. That said, Hong Kong's financial system remains well-positioned to weather adverse shocks given its sound resilience and ample buffers built up over the years.

The HKMA attaches great importance to safeguarding Hong Kong's monetary and financial stability. Looking ahead, we will stay vigilant in the face of the uncertain macroeconomic environment, seeking to promptly identify emerging risks and respond to them in an agile manner. At the same time, we will seek opportunities and create policy headroom to help further enhance Hong Kong's status as a leading international financial centre. In managing the Exchange Fund in this challenging investment environment, the HKMA will continue to invest prudently, while remaining flexible, taking defensive measures as appropriate, and maintaining a high degree of liquidity.

Priorities for 2023 and Beyond

Stability and integrity of the financial system

The global economic outlook remains subject to significant uncertainties. The HKMA will keep abreast of latest developments and stay vigilant against potential risks, with the aim of upholding the resilience and stability of the financial system, which are essential for the ongoing provision of critical financial services that support the functioning of the Hong Kong economy.

Staying vigilant against potential risks

In 2023, uncertainties on the interest rate path in the US and the emergence of banking stress in advanced economies may pose potential downside risks to the growth outlook for major advanced economies. Moreover, lingering geopolitical risks are likely to continue to weigh on global trade and spark volatility in global financial markets from time to time. Nevertheless, Hong Kong's financial system is well-positioned to withstand adverse shocks given the resilience and buffers built up over the years. The HKMA also has the capability, resources and commitment to safeguard Hong Kong's monetary and financial stability.

The HKMA will continue to closely monitor risks and vulnerabilities in the domestic and external environments, and deploy appropriate measures where necessary to maintain Hong Kong's monetary and financial stability. We will also conduct research into issues affecting the Hong Kong economy and assess the potential risks associated with these issues.

Maintaining banking stability

Given escalating geopolitical tensions and aggressive interest rate hikes by major central banks globally to tame rising inflation, the business environment facing the banking sector is expected to remain challenging in 2023. At the same time, rapid technological advances and digitalisation are presenting both opportunities and challenges to the banking sector. Facing an ever-changing financial landscape, the HKMA strives to ensure banks' ability to withstand shocks through its ongoing supervisory efforts. At the same time, the HKMA will also continue to enhance and refine its banking supervisory and regulatory frameworks and policies, taking into account international standards and best practices.

A risk-based supervisory focus

Credit, liquidity and market risks

In 2023, the HKMA will continue to closely monitor the asset quality of authorized institutions (AIs), focusing on their classification and provisioning practices and their management of vulnerable borrowers. The HKMA will also enhance its surveillance system and take proactive steps to ensure that the overall credit risk level of the banking sector remains manageable.

Meanwhile, the HKMA will also keep track of the operating environment of corporates and maintain close dialogue with the banking and commercial sectors to prepare for an eventual exit of the Pre-approved Principal Payment Holiday Scheme, while ensuring customers facing temporary difficulty will continue to get appropriate credit support.

The HKMA will also step up its supervision of AIs' liquidity and market risk management in 2023 against the backdrop of an uncertain macroeconomic environment.

Priorities for 2023 and Beyond

Operational and technology risk

The HKMA will seek to enhance the operational and cyber resilience of the banking sector as banks increasingly adopt technologies in their operations. Following the issuance of the new Supervisory Policy Manual (SPM) module on "*Operational Resilience*" in May, the HKMA will maintain a close dialogue with the industry and review the progress being made by AIs in building their operational resilience frameworks. In parallel, the HKMA will look to raise the banking sector's cyber resilience by following up with AIs on issues revealed by the assessments made under the Cyber Resilience Assessment Framework 2.0, and by monitoring AIs' implementation of the secure tertiary data backup arrangement.

With accelerating digitalisation, other supervisory focuses of the HKMA include stepping up supervision of banks' third-party risk management and strengthening the banking sector's data governance capabilities.

Combating money laundering and terrorist financing

In 2023, the HKMA will prioritise regulatory updates, strengthen the collaborative eco-system response to money laundering and terrorist financing (ML/TF) risks, and further efforts in anti-money laundering (AML) supervisory technology (Suptech) and regulatory technology (Regtech). Amendments will be made to the HKMA's Guideline on Anti-Money Laundering and Counter-Financing of Terrorism (AML/CFT), complemented by specific guidance on a proportionate approach to the Politically Exposed Person (PEP) requirements, with the aim of supporting effective, risk-based industry implementation of key legislative changes. Meanwhile, information-sharing will be scaled up by broadening the scope of existing public-private partnerships and supporting the launch of bank-to-bank information sharing. These will enable faster detection of suspicious accounts and deter abuses, as well as increasing protection for victims of fraud and facilitating recovery of their losses. The HKMA will also focus further on Regtech adoption (including data analytics) through AML Regtech Labs and other AML/CFT Regtech initiatives, and work towards developing a macro analytics capability to complement its data-driven AML/CFT supervision. Collectively, these initiatives will enable the HKMA to take quicker action in response to systemic ML/TF risks such as mule account networks, and stay agile in responding to evolving threats.

Wealth management businesses

In 2023, the HKMA will step up both on-site examinations and off-site surveillance of AIs' conduct in relation to wealth management and the selling of securities, Mandatory Provident Fund (MPF) and other investment and insurance products. Our focus in 2023 will be on the Cross-boundary Wealth Management Connect (Cross-boundary WMC) Scheme, digital distribution and advisory platforms, virtual assets, environmental, social and governance (ESG) investment products and long term insurance products, taking into account the latest market developments and evolving international standards.

The HKMA will communicate closely with other regulators and with the banking industry, and provide AIs with guidance on regulatory standards in relation to the sale of investment, insurance and MPF products as appropriate. Such guidance will also cover the provision of investment services related to virtual assets. In relation to this, in support of the sustainable and responsible development of the virtual asset sector, the HKMA will participate actively in international fora and work with the Government and with other financial regulators on developing a comprehensive regulatory framework for virtual assets.

Following the smooth launch of the Cross-boundary WMC, the HKMA will engage with the industry and relevant regulatory authorities to enhance the scheme. It will also work with the Securities and Futures Commission (SFC) and the industry to streamline the selling process of investment products including for sophisticated investors, and commence the supervision of AIs' trust business under the new SPM module and Code of Practice.

Priorities for 2023 and Beyond

Oversight of financial market infrastructures

The HKMA aims to promote the safety and efficiency of the financial market infrastructures (FMIs) under its oversight in accordance with the Payment Systems and Stored Value Facilities Ordinance (PSSVFO), the Principles for Financial Market Infrastructures (PFMI), and the various guidance issued by the Committee on Payments and Market Infrastructures (CPMI), by conducting assessments of the systems against the latest international standards as appropriate. The HKMA will participate in the CPMI-IOSCO[1] PFMI implementation monitoring and assessment exercise. It will also take part in the work of international standard-setting bodies, and review and strengthen its oversight requirements to reflect international practices or in response to market and technology developments. At the same time, the HKMA will work with relevant authorities to further strengthen co-operative oversight arrangements where appropriate.

Policy development

The HKMA will continue to strengthen and refine its banking supervisory and regulatory frameworks and policies, taking into account international standards and best practices.

Implementation of Basel standards in Hong Kong

Capital standards

The HKMA will further enhance the capital framework through implementing the standards published by the Basel Committee on Banking Supervision (Basel Committee) in recent years, which include the following:

- The revised capital standards set out in the *Basel III: Finalising Post-crisis Reforms* of December 2017, the *Minimum Capital Requirements for Market Risk* of January 2019 (revised in February 2019), and the *Targeted Revisions to the Credit Valuation Adjustment Risk Framework* of July 2020, collectively referred to as the "Basel III final reform package". These revised capital standards set out the new regulatory treatment of credit risk, market risk, credit valuation adjustment risk and operational risk, introduce an output floor requirement, and enhance the leverage ratio framework. Following several rounds of industry consultation in 2022, the HKMA plans to conduct a statutory consultation on proposed amendments to the Banking (Capital) Rules (BCR) in 2023 that will implement the above requirements and the Positive Neutral Countercyclical Capital Buffer. The amendments are expected to be introduced into the Legislative Council for negative vetting within the same year, and become effective as minimum requirements no earlier than 1 January 2024.

- The *Prudential treatment of cryptoasset exposures* of December 2022: the local implementation of the standard is planned for 1 January 2025 in accordance with the timeline set by the Basel Committee, and the HKMA plans to consult the industry on its related proposals in 2023.

[1] IOSCO stands for the International Organization of Securities Commissions.

Priorities for 2023 and Beyond

Exposure limits

In March 2023, the HKMA issued the proposed amendments to the Banking (Exposure Limits) Rules for industry consultation. The amendment proposals were largely consequential to the HKMA's implementation of revised capital standards under the Basel III final reform package mentioned above. The consultation package also includes further consequential amendments to the treatment of sovereign concentration risk under the BCR. The target implementation date of the amended rules will be aligned with that for the credit risk parts of the amended BCR for implementing the Basel III final reform package, i.e. no earlier than 1 January 2024.

Liquidity standards

The HKMA intends to consult the industry in 2023 on proposed amendments to the Banking (Liquidity) Rules by way of the Banking (Liquidity) (Amendment) Rules 2023 (BLAR 2023). Since the amendments are consequential changes arising from the concurrent proposed amendments to the BCR, the target implementation date of the BLAR 2023 will be aligned with that of the credit risk parts of the amended BCR for implementing the Basel III final reform package, i.e. no earlier than 1 January 2024.

Disclosure standards

New and revised disclosure requirements associated with the revised capital standards in the Basel III final reform package are mainly set out in the *Pillar 3*[2] *Disclosure Requirements — Updated Framework* and the *Revisions to Market Risk Disclosure Requirements*, published by the Basel Committee in December 2018 and November 2021 respectively. The Basel Committee also published the *Revisions to Leverage Ratio Disclosure Requirements* in June 2019, which amended the leverage ratio disclosure requirements to address concerns regarding potential "window-dressing" (i.e. banks reducing the volumes of certain transactions around reporting dates to artificially inflate their leverage ratios for reporting and public disclosure). To implement these new and revised disclosure requirements in Hong Kong, the HKMA is in the process of preparing the corresponding amendments to the Banking (Disclosure) Rules (BDR), as well as a revised package of standard disclosure templates and tables in consultation with the industry. The amendments to the BDR are expected to be tabled at the Legislative Council for negative vetting along with the amendments to the BCR in 2023.

The HKMA also plans, in consultation with the industry, to update the SPM module on CA-D-1 *"Guideline on the Application of the Banking (Disclosure) Rules"* to reflect the new and revised disclosure requirements once the amendments to the BDR are finalised.

Other supervisory policies and risk management guidelines

To reflect developments in regulatory requirements and international standards, the HKMA plans to update certain SPM modules, including those relevant to the implementation of the revised capital and disclosure standards in the Basel III final reform package and other modules such as "*Countercyclical Capital Buffer — Geographic Allocation of Private Sector Credit Exposures*", *"Interest Rate Risk in the Banking Book"*, *"New Share Subscription and Share Margin Financing"*, *"Stress-testing"*. The HKMA will also work further on the revised SPM modules on "*Reporting Requirements Relating to Authorized Institutions' External Auditors under the Banking Ordinance"* and *"Countercyclical Capital Buffer — Approach to its Implementation"*, and aims to finalise the revisions in 2023. Consequential to the proposed amendments to the Banking (Exposure Limits) Rules, the related Code of Practice and SPM modules, e.g. CR-G-8 on "*Large Exposures and Risk Concentrations"* and CR-G-9 on "*Exposures to Connected Parties"*, will also be updated.

[2] Pillar 3 refers to a set of disclosure requirements prescribed by the Basel Committee to promote consistency and comparability of regulatory disclosures through more standardised formats among banks and across jurisdictions.

Priorities for 2023 and Beyond

Balanced and responsive supervision

The HKMA will maintain close dialogue with the banking sector in order to explore areas for further refining and streamlining its supervisory policies and practices with a view to promoting the sustainable development of the banking sector amid the fast-changing banking environment and risk landscape.

Accounting standards

The International Accounting Standards Board (IASB) is expected to carry out a post-implementation review of the impairment requirements of International Financial Reporting Standard 9 (IFRS 9) in 2023. The HKMA will keep in view the issues identified from the IASB's review and their relevance to the implementation of IFRS 9 by AIs in Hong Kong. It will also maintain regular dialogue with external auditors of AIs, and assess the implications of other impending accounting standards for the existing prudential requirements on AIs.

Enforcement

The HKMA will monitor AIs' adherence to the updated statutory guideline on Complaints Handling and Redress, and that they are treating customers fairly and responsibly with regard to the purchase and use of banking products and services. This will include ensuring that AIs are making good use of alternative dispute resolution channels to resolve consumer complaints at an early stage.

To better support its enhanced and optimised workflows, the HKMA will develop a new management information system in 2023. This will enable the HKMA to more efficiently and effectively carry out assessments, investigations and other follow-up actions relating to issues arising from on-site examinations and offsite reviews, banking complaints, whistle-blowing, and banks' self-reporting under various statutory regimes relevant to AIs and stored value facility (SVF) licensees. In addition, the HKMA will publish *Complaints Watch* on a half-yearly basis to highlight the latest complaint trends, emerging topical issues, and areas that AIs and members of the public should be alert to, with the aim of educating consumers and promoting good standards of conduct and prudent business practices among AIs.

Meanwhile, collaboration with other local financial regulators will remain a key priority in order to achieve effective and well co-ordinated enforcement outcomes. The HKMA will also work closely with the industry and with law enforcement agencies on an ecosystem response to fraud and other financial crimes in support of financial stability and market integrity.

Priorities for 2023 and Beyond

Resolution

The HKMA is running a multi-year programme to build an operational resolution regime for AIs. In 2023, the HKMA will prioritise the following topics in four key areas (Table 1):

Table 1 Forward priorities on resolution in 2023

Resolution standards

- Consult on and finalise a Financial Institutions (Resolution) Ordinance Code of Practice chapter on continuity of access in resolution to FMIs
- Conduct a review of the implementation of loss-absorbing capacity (LAC) policy standards

Resolution execution capability

- Develop a crisis management framework to support co-ordination between resolution authorities in Hong Kong
- Advance development of bail-in mechanics and operationalisation of transfer stabilization options, including engagement of consultants under the Resolution Advisory Framework

Resolution planning

- Advance bilateral resolution planning programmes with domestic systemically important banks (D-SIBs) and other relevant AIs, including fostering the build-up of LAC resources, implementing policy standards on operational continuity, liquidity and funding, and contractual recognition of suspension of termination rights in resolution
- Advance development of preferred resolution strategies for locally incorporated AIs other than D-SIBs with total consolidated assets above HK$300 billion
- Lead a regional resolution planning programme, oversee the build-up and testing of resolution capabilities, and strengthen home-host co-ordination arrangements

International & cross-border co-operation

- Contribute to international policy developments and implementation monitoring at the Financial Stability Board (FSB) on its resolution-related priorities, including the total loss-absorbing capacity standard, bail-in execution, cross-border funding in resolution, implications of digital innovation for resolution, and alternative financial resources for the resolution of central counterparties
- Chair the Study Group on Resolution of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)[a] and co-ordinate cross-border resolution initiatives
- Co-ordinate with other authorities via 14 Crisis Management Groups and Resolution Colleges to enhance the resolvability of global systemically important banks

a. The EMEAP is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region.

Priorities for 2023 and Beyond

Banking sector development

In 2023, the HKMA will work on further promoting sound business conduct among banks and fostering the healthy growth of the banking sector. These are important efforts as they contribute to public confidence in the banking sector as well as Hong Kong's overall competitiveness as an international financial centre.

Building a safe and inclusive banking sector

Consumer protection

The HKMA will participate in, and provide advice to, the Code of Banking Practice Committee of the Hong Kong Association of Banks in 2023 to finalise the review of the Code, with the aim of offering enhanced protection to customers with respect to various banking services. The HKMA will monitor AIs' implementation of the revised provisions, and their compliance with the Code in general.

To strengthen consumer protection, the HKMA will stay abreast of developments in innovative banking services and popular banking products (such as personal credit products), and provide guidance to the banking industry as appropriate. We will participate actively in international efforts on financial consumer protection, focusing on innovative products and the surge in scams and frauds on the back of increasing use of digitalised banking channels. The HKMA will also keep monitoring the rollout of the payment arrangement for property transactions by mortgage banks, and follow up with the banking industry and other stakeholders on necessary enhancements.

Meanwhile, as part of its ongoing initiative to promote a sound culture in the banking sector, the HKMA will hold further culture dialogues with leadership of AIs to discuss the effectiveness of AIs' culture enhancement efforts and provide supervisory feedback. The HKMA will also maintain dialogue with regulators outside Hong Kong on the development of bank culture. In addition, the HKMA will co-ordinate with the banking associations and monitor AIs' implementation of the Mandatory Reference Checking Scheme to address the "rolling bad apples" phenomenon in the banking sector, and make improvements to the Scheme as appropriate.

The HKMA is also working closely with the industry associations and relevant stakeholders to implement the Multiple Credit Reference Agencies (MCRAs) model for consumer credit data. The industry associations will complete the loading of consumer credit data onto the Credit Reference Platform (CRP) for selected CRAs to download and prepare for their provision of consumer credit reference services. The industry associations will also work on various enhancements of the CRP to encourage more credit providers to join, and improve the overall resilience of the MCRAs model.

Financial inclusion

The HKMA will closely engage the banking industry, the business community and relevant stakeholders with a view to further promote financial inclusion in Hong Kong, taking into account market developments and opportunities offered by technology.

Deposit protection

It is important to ensure the Deposit Protection Scheme (DPS) remains efficient and effective in protecting depositors and contributing to banking stability in Hong Kong. The Hong Kong Deposit Protection Board (the Board) plans to conduct a public consultation in 2023 on a package of proposed enhancements to the DPS. Subject to the comments received during the consultation, the Board aims to introduce legislative amendments into the Legislative Council as soon as practicable. Meanwhile, the Board will conduct a payout rehearsal together with payout agents to test the payout operations, as part of its efforts to ensure payout readiness of the DPS.

Promoting the public awareness and understanding of the DPS is key to maintaining the effectiveness of the Scheme. The Board will sustain efforts in reinforcing awareness of and building trust in the protection brought by the DPS through advertising and public relations campaigns. In particular, social media campaigns and educational outreach activities will be carried out to engage the key target groups, including the younger generation and the elderly. Meanwhile, the Board will ensure that appropriate representations are made by DPS member banks to assist depositors to readily ascertain the DPS membership status of a bank and distinguish between DPS protected and non-DPS protected financial products.

Priorities for 2023 and Beyond

Future-proofing the banking sector

Technology adoption

As part of the "All banks go fintech" initiative of its "Fintech 2025" strategy, the HKMA completed the Tech Baseline Assessment in 2022 which took stock of Hong Kong banks' current and planned adoption of financial technology (fintech) and assessed whether there might be fintech business areas and technology types that would benefit from the HKMA's support. The results indicated that banks were prepared to dedicate healthy amounts of financial and talent resources to fintech over the next three years. To take this forward, the HKMA is developing a roadmap of initiatives to further promote the adoption of fintech in the banking sector, particularly in the business areas of Wealthtech, Insurtech and Greentech, as well as the technology types of Artificial Intelligence and Distributed Ledger Technology.

On the adoption of Suptech, the HKMA will kick-start the implementation of an end-to-end digital supervisory platform and further strengthen the HKMA's data analytic capabilities. The HKMA is also exploring the use of advanced analytics to maximise the potential of unstructured and qualitative information for conducting more in-depth, agile and focused analyses, thereby enhancing the forward-looking capability of the HKMA's supervisory processes.

Enhanced Competency Framework

2016	☑ Anti-Money Laundering and Counter-Financing of Terrorism (core level)
	☑ Cybersecurity
2017	☑ Treasury Management
	☑ Retail Wealth Management
2018	☑ Anti-Money Laundering and Counter-Financing of Terrorism (professional level)
2019	☑ Credit Risk Management
2020	☑ Operational Risk Management
2021	☑ Fintech
2022	☑ Compliance
Upcoming	☐ Green and Sustainable Finance

Capacity building in the banking sector

The HKMA attaches great importance to building a sustainable pipeline of young talents to support the future development of the banking industry. Building on the good response from university students in 2022 on the Future Banking Bridging Programme and the university career talks, the HKMA will implement various initiatives to attract more young talents to the banking sector and better equip them with professional training and hands-on work experience. The HKMA will also push ahead with its promotional efforts to enhance the younger generation's understanding of modern banking and the career opportunities available so that they can have better career planning at an early stage. These include fostering closer ties with relevant stakeholders including the Education Bureau to reach out to secondary school students.

At the same time, it is equally important to drive the upskilling and reskilling of existing practitioners to ensure that they can keep pace with the market developments. To this end, the HKMA will launch in 2023 a new module on Green and Sustainable Finance under the Enhanced Competency Framework for Banking Practitioners to meet the rapidly growing demand for such talents in the banking industry. It will also assist in administering the Pilot Scheme on Training Subsidy for Fintech Practitioners and the Pilot Green and Sustainable Finance Capacity Building Support Scheme, which are designed to encourage more practitioners to take part in training and acquire relevant professional qualifications.

Talent development cannot be achieved without the support of the industry. Therefore, as part of the Skills Transformation and Empowerment Programme launched in 2022, the HKMA aims to share good talent development practices with the industry and update the relevant module of the SPM to provide banks with further guidance on talent development, especially in terms of supportive arrangements and incentives to encourage and facilitate their staff to upskill themselves.

Priorities for 2023 and Beyond

International financial centre

Building on Hong Kong's strong foundation and ample opportunities, the HKMA will strive to further strengthen Hong Kong's position as an international financial centre in 2023 and beyond.

Staying ahead of technological advancements

Hong Kong as a fintech hub in Asia

To promote the development and use of technology in the financial sector, the HKMA will continue to take forward the initiatives under the "Fintech 2025" strategy. It will focus on facilitating banks' digitalisation and adoption of Regtech, strengthening its work on both wholesale and retail Central Bank Digital Currencies, further developing next-generation data infrastructure for more efficient financial intermediation, and deepening the fintech talent pool. To facilitate innovation in the financial services industry, the HKMA will step up its research efforts in emerging technologies, such as federated learning and blockchain, and maintain close collaboration with strategic partners and key stakeholders both locally and abroad.

Crypto-assets particularly stablecoins

The HKMA will continue its work on developing an agile and risk-based regulatory regime for stablecoins to address the monetary and financial stability risks they may pose, while at the same time supporting financial innovation and market development. The HKMA will proceed to formulate the more detailed regulatory requirements, taking into account factors such as the latest market developments, international regulatory recommendations and good practices, as well as feedback on the discussion paper on crypto-assets and stablecoins. The HKMA will also continue to participate actively in international discussions about stablecoins, and monitor developments in crypto-assets in major markets.

Dominant gateway to the Mainland and the global offshore renminbi business centre

The HKMA will continue to collaborate with Mainland authorities and the financial industry to further develop Hong Kong's offshore renminbi market. This will involve deepening market liquidity, promoting a greater diversity of renminbi products, and improving Hong Kong's financial infrastructure, with a view to reinforcing Hong Kong's position as a global offshore renminbi business hub.

In light of growing demand for renminbi-denominated assets by international investors, the HKMA will look to promote a greater diversity of offshore renminbi products in Hong Kong by working closely with Mainland authorities to enhance and expand the existing cross-boundary fund flow channels. Top priorities include launching Swap Connect and the Dual Counter Market Making regime to facilitate the trading of Hong Kong-listed stocks in renminbi, as well as enhancing various Mainland-Hong Kong Connect schemes including the Cross-boundary WMC, Stock Connect, and Bond Connect. In parallel, the HKMA will look to provide more diversified risk management tools to address global investors' hedging needs for their Mainland investments, thereby strengthening Hong Kong's status as a leading offshore renminbi business hub and risk management centre.

A hub for asset and wealth management

The HKMA will proactively reach out to the asset and wealth management industry to promote Hong Kong as an international financial centre, with a view to attracting more capital, talent, and financing and investment activities to Hong Kong. It will also continue its work with the Government and the industry in enhancing the competitiveness of Hong Kong as an international asset and wealth management hub and a regional destination for corporate treasury centres and fund investment activities. Meanwhile, the HKMA will maintain its engagement with different stakeholders in order to stay abreast of the latest market trends and further develop Hong Kong's financial platforms.

Priorities for 2023 and Beyond

Innovation and technology adoption in bond markets

Whilst adoption in the bond market is at a nascent stage, tokenisation holds the potential to bring about cost and efficiency gains, enhance liquidity, and broaden investor participation in the bond market. With the experience gained from the pilot issuance of the tokenised Government green bond in February 2023, the HKMA and the Government will review the potential and prospects of tokenised bond issuance in Hong Kong and explore the need for policy initiatives to foster the wider adoption of distributed ledger technology in Hong Kong's capital markets.

Hong Kong's financial infrastructures

The HKMA will continue to maintain smooth and reliable operation of the various financial infrastructures to strengthen overall resilience and meet international standards. Riding on the rapid adoption of the Faster Payment System (FPS) by the public in the past four years, we will continue to explore more potential use cases in collaboration with the industry and various Government departments, with a view to further promoting e-payment in Hong Kong. In particular, more work would be done on promoting the use of the FPS for merchant payments and business payments. App-to-App and Web-to-App features are also being implemented by the industry to enhance customer experience in making online payments to merchant apps or websites on mobile phones.

Leveraging on the successful experience in the past two years, the HKMA will continue engaging with banks and SVFs to encourage the public to give electronic lai sees via the FPS during the Chinese New Year. Apart from promoting the use of the FPS locally, the HKMA will also explore leveraging the FPS' advantages of 24/7 operations and instantaneous payment to enhance the efficiency of cross-border payments. For example, the FPS could support bank remittance services so that corporate and personal account holders in Hong Kong could receive overseas remittances or remit money to destinations abroad more speedily. Consideration will also be given to linking up the FPS with similar faster payment systems in other jurisdictions, which would allow Hong Kong people to make payments directly through the FPS at overseas tourist hot spots. Furthermore, in supporting the People's Bank of China in its technical testing of digital renminbi (e-CNY) for cross-boundary payments in Hong Kong, we will expand the scope of the test to cover more Mainland operating institutions, Hong Kong banks and merchants.

Hong Kong's retail payment industry

In supervising SVF licensees and overseeing the designated retail payment systems in accordance with the PSSVFO, the HKMA will continue to refine its risk-based approach having regard to relevant international and local developments with a view to promoting a safe and efficient retail payment industry.

Other market development initiatives

Hong Kong's treasury markets

The HKMA works closely with the Treasury Markets Association and engages market participants to support the enhancement of the professionalism and competitiveness of Hong Kong's treasury markets, particularly in relation to financial benchmarks and the promotion of the Foreign Exchange Global Code.

Over-the-counter derivatives market

An over-the-counter (OTC) derivatives regime is being introduced in phases in Hong Kong. In close collaboration with the SFC, the HKMA will further develop and refine the implementation rules to implement an effective regulatory regime for the OTC derivatives market.

Priorities for 2023 and Beyond

Developing financial leadership in Hong Kong

In 2023, the Hong Kong Academy of Finance (AoF)[3] will further develop its Leadership Development Programme, with a view to fostering leadership and broadening the global and inter-disciplinary perspectives of members and industry participants. Following the success of its new flagship Financial Leaders Programme in 2022, the AoF will continue to run the Programme to nurture senior financial leaders to sustain and propel the long-term development of Hong Kong's financial industry. Programme activities for the second cohort will run from April to December 2023.

The inaugural cohort of the Financial Leaders Programme with Mr Paul Chan Mo-po (front row, fifth from left), Financial Secretary and Honorary President of the AoF, and Mr KC Kwok (front row, fifth from right), CEO of the AoF

The Hong Kong Institute for Monetary and Financial Research (HKIMR), the research arm of the AoF, will continue to pursue applied and thought leadership research into topics that are highly relevant to Hong Kong's financial services industry and regulators, and explore new developments in financial markets with the aim of providing Hong Kong's financial services industry with ideas and insights beneficial for its long-term strategic development. Notable topics being studied in 2023 include emerging global trends in the markets for talent in financial services and recent technological innovations in the financial services industry. Through exchanging views with the financial community and key stakeholders, the HKIMR will identify relevant topics for applied research in the future. With the lifting of COVID-related social distancing and travel restrictions, more effort will be put into promoting knowledge exchange among researchers and collaboration with research institutions in other areas.

International and regional co-operation

With the global environment still subject to significant uncertainties, there is a need to strengthen cross-border co-operation in market surveillance and enhance the resilience of financial systems. To this end, the HKMA will maintain its active participation in international and regional forums to promote financial stability.

As a member of the FSB, the FSB Standing Committee on Assessment of Vulnerabilities and the FSB Standing Committee on Supervisory and Regulatory Cooperation, the HKMA will continue to take on leadership roles in a number of priority work areas of the FSB, including those of non-bank financial intermediation, financial innovation and cross-border payments. It will also actively contribute to other financial stability topics including financial leverage, cyber and operational resilience and addressing financial risks from climate change.

Sustainability

Combatting climate change and promoting sustainability require consistent and robust effort. The HKMA will continue to work with like-minded peers and international organisations on this global agenda. In 2023, the HKMA will step up its efforts in promoting a more sustainable financial sector in Hong Kong while carrying out its duties as a responsible investor and sustainable organisation. Details on our work and priorities can be found in the *Sustainability Report 2022*.

[3] The AoF is set up with full collaboration amongst the HKMA, the SFC, the Insurance Authority and the Mandatory Provident Fund Schemes Authority. It brings together the strengths of academia, the industry, professionals and the regulatory community to develop financial leadership and promote research collaboration.

About the HKMA

The Hong Kong Monetary Authority is Hong Kong's central banking institution. The HKMA has four main functions:

- maintaining currency stability within the framework of the Linked Exchange Rate System;
- promoting the stability and integrity of the financial system, including the banking system;
- helping to maintain Hong Kong's status as an international financial centre, including the maintenance and development of Hong Kong's financial infrastructure; and
- managing the Exchange Fund.

About the HKMA

HKMA's legal mandate

The HKMA was established on 1 April 1993 after the Legislative Council passed amendments to the Exchange Fund Ordinance in 1992 empowering the Financial Secretary to appoint a Monetary Authority.

The powers, functions and responsibilities of the Monetary Authority are set out in the Exchange Fund Ordinance, the Banking Ordinance, the Financial Institutions (Resolution) Ordinance, the Deposit Protection Scheme Ordinance, the Payment Systems and Stored Value Facilities Ordinance, and other relevant Ordinances. The division of functions and responsibilities in monetary and financial affairs between the Financial Secretary and the Monetary Authority is set out in an exchange of letters dated 25 June 2003. The exchange of letters discloses delegations made by the Financial Secretary to the Monetary Authority. The letters are public documents and can be found on the HKMA website.

The Exchange Fund Ordinance establishes the Exchange Fund under the control of the Financial Secretary. According to the Ordinance, the Fund shall be used primarily for affecting the exchange value of the Hong Kong dollar. It may also be used (whilst having regard to its primary purpose) for maintaining the stability and integrity of the monetary and financial systems of Hong Kong, with a view to maintaining Hong Kong as an international financial centre.

The Monetary Authority is appointed under the Exchange Fund Ordinance to assist the Financial Secretary in performing his functions under the Exchange Fund Ordinance and to perform such other functions as are assigned by other Ordinances or by the Financial Secretary. The office of the Monetary Authority is known as the HKMA, and the Monetary Authority is the Chief Executive of the HKMA.

The Banking Ordinance provides the Monetary Authority with the responsibility and powers for regulating and supervising banking business and the business of taking deposits. Under the Ordinance, the Monetary Authority is responsible for the authorization of licensed banks, restricted licence banks and deposit-taking companies in Hong Kong.

The Financial Institutions (Resolution) Ordinance provides that the Monetary Authority is the resolution authority for banking sector entities. Under the Ordinance, the Monetary Authority is vested with a range of powers to effect the orderly resolution of a non-viable, systemically important, banking sector entity for the purpose of maintaining financial stability, while seeking to protect public funds.

The Securities and Futures Ordinance and the Mandatory Provident Fund Schemes Ordinance provide certain powers to the Monetary Authority regarding the securities and mandatory provident fund businesses of banks.

The Monetary Authority has been delegated with powers of inspection and investigation by the Insurance Authority under the Insurance Ordinance in relation to the insurance related businesses of banks.

The Anti-Money Laundering and Counter-Terrorist Financing Ordinance empowers the Monetary Authority to supervise banks' compliance with the requirements under the Ordinance.

The Deposit Protection Scheme Ordinance confers responsibility on the Monetary Authority to assist in the operation of the Deposit Protection Scheme and to trigger payment of compensation from the Deposit Protection Scheme Fund to depositors of a failed licensed bank.

The Payment Systems and Stored Value Facilities Ordinance provides a statutory regime for the Monetary Authority to designate and oversee certain significant clearing and settlement systems and retail payment systems operating in Hong Kong. It also empowers the Monetary Authority to administer a licensing regime for electronic and physical "facilities", which are used to store monetary value and which meet the criteria specified in the Ordinance.

Corporate Governance

As Hong Kong's central banking institution, the HKMA is committed to high standards of corporate governance, as good governance is crucial in maintaining and safeguarding the trust and confidence of the public in the HKMA to fulfil its statutory mandate.

Corporate Governance

To achieve its commitment to good corporate governance, the HKMA:

- puts in place a well-defined governance structure with a high degree of accountability;
- exercises robust controls to manage risks and ensure that staff behaviours at all levels and its day-to-day operations are consistent with specified standards; and
- pursues a policy of high transparency and accessibility, and keeps close contacts with stakeholders.

The HKMA and the Hong Kong Special Administrative Region Government

The HKMA is an integral part of the Hong Kong Special Administrative Region (HKSAR) Government, but is able to employ staff on terms different from those of the civil service in order to attract personnel of the right experience and expertise. The Chief Executive of the HKMA and his staff are public officers. In its day-to-day work, the HKMA operates with a high degree of autonomy within the relevant statutory powers conferred upon, or delegated to, the Monetary Authority.

The Financial Secretary is responsible for determining the monetary policy objective and the structure of the monetary system of Hong Kong: a letter from the Financial Secretary to the Monetary Authority dated 25 June 2003 specifies that these should be currency stability defined as a stable exchange value at around HK$7.80 to one US dollar maintained by Currency Board arrangements. The Monetary Authority is on his own responsible for achieving the monetary policy objective, including determining the strategy, instruments and operational means for doing so. The Monetary Authority is also responsible for maintaining the stability and integrity of the monetary system of Hong Kong.

The Financial Secretary, assisted by the Secretary for Financial Services and the Treasury, has responsibility for policies for maintaining the stability and integrity of Hong Kong's financial system and the status of Hong Kong as an international financial centre. In support of these policies, the Monetary Authority's responsibilities include:

- promoting the general stability and effective working of the banking system;
- promoting the development of the debt market, in co-operation with other relevant bodies;
- matters relating to the issuance and circulation of legal tender notes and coins;
- promoting the safety and efficiency of the financial infrastructure through the development of payment, clearing and settlement systems and, where appropriate, the operation of these systems; and
- seeking to promote, in co-operation with other relevant bodies, confidence in Hong Kong's monetary and financial systems, and market development initiatives to help strengthen the international competitiveness of Hong Kong's financial services.

The Exchange Fund is under the control of the Financial Secretary. The Monetary Authority, under delegation from the Financial Secretary, is responsible to the Financial Secretary for the use of the Exchange Fund, and for the investment management of the Fund.

Corporate Governance

Accountability and transparency

The autonomy given to the HKMA in its day-to-day operations, and in the methods it uses to pursue policy objectives determined by the Government, is complemented by a high degree of accountability and transparency.

The HKMA serves Hong Kong by promoting monetary and banking stability, by managing the official reserves effectively, and by developing and overseeing a robust and diverse financial infrastructure. These processes help to strengthen Hong Kong's role as an international financial centre and to foster Hong Kong's economic well-being.

The HKMA must have the confidence of the community if it is to perform its duties well. The HKMA therefore takes seriously the duty of explaining its policies and work to the general public and makes every effort to address any concerns within the community relevant to the HKMA's responsibilities. In particular, the HKMA makes timely clarifications on misinformation and rumours about the HKMA's policies via traditional and social media.

The HKMA is accountable to the people of Hong Kong through the Financial Secretary, who appoints the Monetary Authority, and through the laws passed by the Legislative Council that set out the Monetary Authority's powers and responsibilities. The HKMA also recognises a broader responsibility to promote a better understanding of its roles and objectives and to keep itself informed of community concerns. In its day-to-day operations and in its wider contacts with the community, the HKMA pursues a policy of transparency and accessibility. This policy has two main objectives:

- to keep the financial industry and the public as fully informed about the work of the HKMA as possible, subject to considerations of market sensitivity, commercial confidentiality and statutory restrictions on disclosure of confidential information; and
- to ensure that the HKMA is in touch with, and responsive to, the community it serves.

The HKMA seeks to follow international best practices in its transparency arrangements. It maintains extensive relations with the mass media and produces a range of regular and special publications in both English and Chinese. The HKMA's bilingual website (www.hkma.gov.hk) carries a large number of HKMA publications, press releases, speeches and presentations, in addition to dedicated sections on research, statistics, regulatory resources, consumer information and other topics. Social media platforms are also used to communicate with the public more efficiently in the digital era. The HKMA maintains an Information Centre at its offices, consisting of a library and an exhibition area, which is open to the public six days a week. Further information on the HKMA's work on public communications and engagement is contained in the *Corporate Functions* chapter on page 157 to 162.

Corporate Governance

Over the years, the HKMA has progressively increased the detail and frequency of its disclosure of information on the Exchange Fund and Currency Board Accounts. Since 1999, the HKMA has participated in the International Monetary Fund's Special Data Dissemination Standard project for central banks. The HKMA publishes records of meetings of the Currency Board Sub-Committee of the Exchange Fund Advisory Committee and the reports on Currency Board operations. The supervisory policies and guidelines on banking have been published on the HKMA website since 1996.

The relations between the HKMA and the Legislative Council play an important part in promoting accountability and transparency. There is a formal commitment from the Chief Executive of the HKMA to appear before the Panel on Financial Affairs of the Legislative Council three times a year to brief Members and to answer questions on the HKMA's work. Representatives from the HKMA attend Legislative Council panel and committee meetings from time to time to explain and discuss particular issues and to assist Members in their scrutiny of draft legislation.

Controls

The HKMA adopts robust internal and external control mechanisms to ensure that it upholds a high standard of staff conduct, prudent risk management as well as appropriate checks and balances. Internal and external audit functions provide independent assessment on the adequacy and effectiveness of the control mechanisms.

Code of Conduct

A Code of Conduct, which provides guidance to staff on their ethical and legal responsibilities, is in place to ensure that staff behaviours are consistent with specified standards at all levels.

Internal controls

Operational controls

All departments and divisions have ownership and responsibility to assess risks of their operational processes and put in place appropriate controls for ensuring proper day-to-day operations of the HKMA. This serves as the first line of defence for risk management.

Corporate Governance

Organisational risk management

Risk management is also undertaken at the corporate level, with the Risk Committee, chaired by the Chief Executive of the HKMA, being one of the cornerstones of the organisational risk management framework.

Potential and emerging risks identified by the functional units, and the adequacy of the control measures and mitigating strategies they devise, are reported to and discussed at the Risk Committee, which decides on appropriate follow-up actions.

Internal audit

The Internal Audit Division of the HKMA independently assesses the adequacy and effectiveness of governance, risk management and control processes of different functional units, and advises on areas for improvement.

External audit

In accordance with section 7 of the Exchange Fund Ordinance, the Audit Commission of the HKSAR Government audits the financial statements of the Exchange Fund. The Commission does not charge for this service. The audited financial statements of the Exchange Fund are included in the HKMA *Annual Report*.

Advisory Committees

The Exchange Fund Advisory Committee

In his control of the Exchange Fund, the Financial Secretary is advised by the Exchange Fund Advisory Committee (EFAC). EFAC is established under section 3(1) of the Exchange Fund Ordinance, which requires the Financial Secretary to consult the Committee in his exercise of control of the Exchange Fund. The Financial Secretary is ex officio Chairman of EFAC. Other members, including the Monetary Authority, are appointed in a personal capacity by the Financial Secretary under the delegated authority of the Chief Executive of the Hong Kong Special Administrative Region. Members of EFAC are appointed for the expertise and experience that they can bring to the Committee. Such expertise and experience include knowledge of monetary, financial and economic affairs and of investment issues, as well as of accounting, management, business and legal matters.

EFAC is assisted in its work by five Sub-Committees, which monitor specific areas of the HKMA's work and report and make recommendations to the Financial Secretary through EFAC. The Committee held five meetings in 2022 to discuss a full range of issues relating to the work of the HKMA, most of which had been previously discussed by the relevant Sub-Committees.

Brief biographies of EFAC Members and the Code of Conduct for EFAC Members can be found on the HKMA website. A register of Members' interests, which contains the declarations of interests by Members, is available for public inspection during 10:00 a.m. to 6:00 p.m. Monday to Friday (except public holidays) at the HKMA's offices.

The terms of reference for EFAC and its Sub-Committees are also available at the HKMA website.

Advisory Committees

1 April 2023

Chairman

The Honourable Paul CHAN Mo-po, GBM, GBS, MH, JP
The Financial Secretary

Members

Mr Eddie YUE, JP
The Monetary Authority

Mr Benjamin HUNG Pi-cheng, BBS, JP
Chief Executive Officer, Asia
Standard Chartered Bank

Mr Nicky LO Kar-chun, SBS, JP

The Honourable Bernard Charnwut CHAN, GBM, GBS, JP
Chairman and President
Asia Financial Holdings Limited

Mr LAU Ming-wai, GBS, JP
Chairman
Chinese Estates Holdings Limited

Ms Agnes CHAN Sui-kuen
Senior Advisor, Chairman Office, Greater China
Ernst & Young

Advisory Committees

Ms Irene LEE Yun-lien
Chairman
Hysan Development Company Limited

The Honourable Rimsky YUEN Kwok-keung, GBM, SC, JP
Temple Chambers

Mr Stephen YIU Kin-wah, JP
Chairman
Insurance Authority

Mr Tim LUI Tim-leung, SBS, JP
Chairman
Securities and Futures Commission

Mrs Ayesha MACPHERSON LAU, BBS, JP
Chairman
Mandatory Provident Fund Schemes Authority

Mr SUN Yu
Vice Chairman and Chief Executive
Bank of China (Hong Kong) Limited

Professor TAM Kar-yan, MH, JP
Dean and Chair Professor, School of Business and Management
The Hong Kong University of Science and Technology

Mr Raymund CHAO Pak-ki
Chairman of PwC Asia Pacific
Chairman & CEO of PwC China

Advisory Committees

Dr the Honourable Victor FUNG Kwok-king, GBM, GBS
Chairman
Fung Group

Mr David LIAO Yi-chien
Group Executive, HSBC Group
Co-Chief Executive, Asia-Pacific
The Hongkong and Shanghai Banking Corporation Limited

Dr the Honourable Moses CHENG Mo-chi, GBM, GBS, JP
Consultant
P. C. Woo & Co.
(until 31 January 2022)

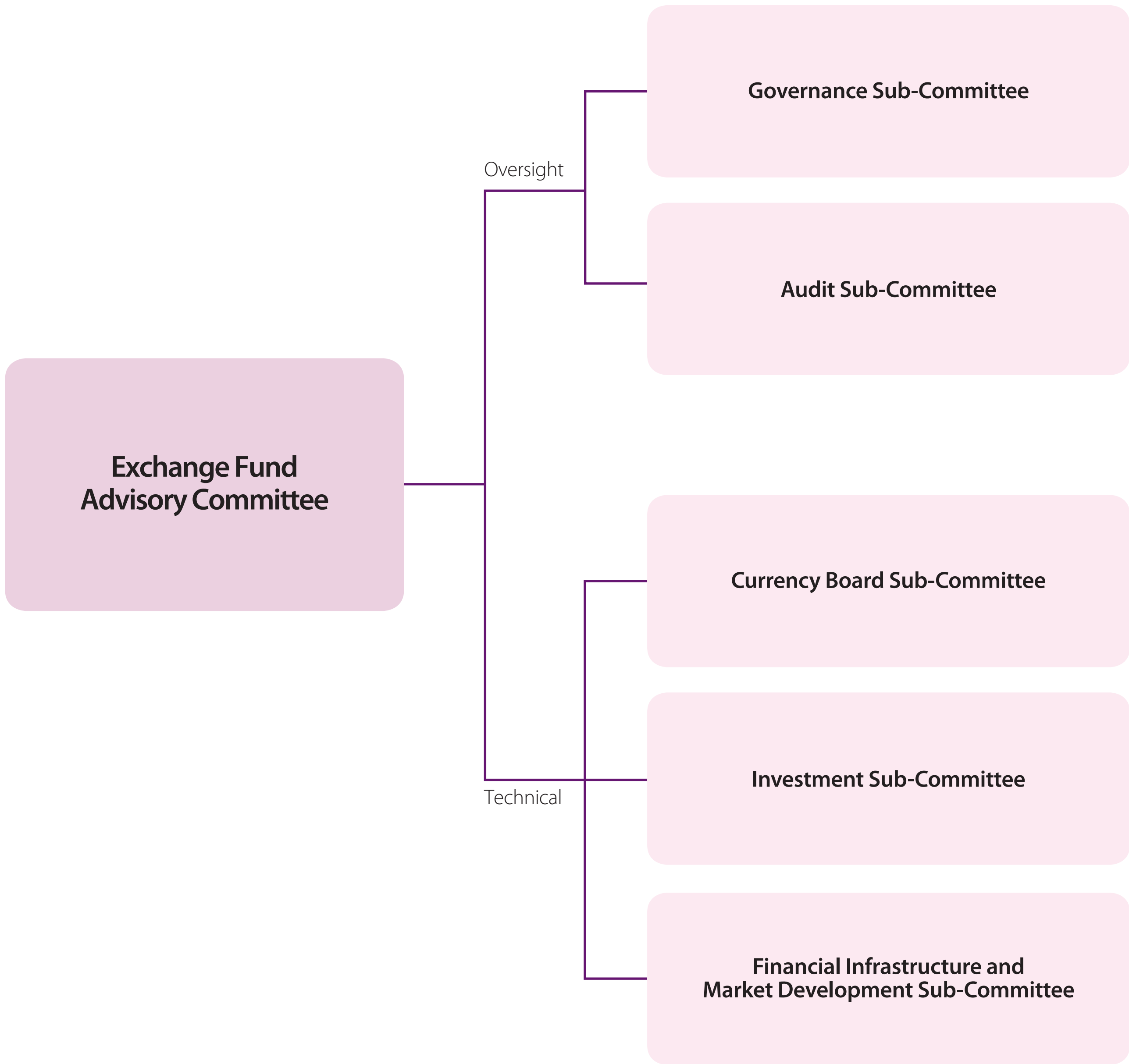
Secretary

Ms Sarah KWOK

Advisory Committees

The Exchange Fund Advisory Committee

Sub-Committee Structure



Advisory Committees

The Exchange Fund Advisory Committee

Governance Sub-Committee

The Governance Sub-Committee monitors the performance of the HKMA and makes recommendations to EFAC on remuneration and human resources policies, and on budgetary, administrative and governance issues. The Sub-Committee met five times in 2022 to consider a range of subjects including the HKMA's expenditure budget, performance assessment, annual pay review and strategic planning matters. The Sub-Committee also received regular reports on the work of the HKMA.

Chairman

Mr Nicky LO Kar-chun, SBS, JP

Members

Mr LAU Ming-wai, GBS, JP
Chairman
Chinese Estates Holdings Limited

Ms Agnes CHAN Sui-kuen
Senior Advisor, Chairman Office, Greater China
Ernst & Young

Mr Stephen YIU Kin-wah, JP
Chairman
Insurance Authority

Mrs Ayesha MACPHERSON LAU, BBS, JP
Chairman
Mandatory Provident Fund Schemes Authority

Mr Raymund CHAO Pak-ki
Chairman of PwC Asia Pacific
Chairman & CEO of PwC China

Dr the Honourable Moses CHENG Mo-chi, GBM, GBS, JP
Consultant
P. C. Woo & Co.
(until 31 January 2022)

The Honourable Bernard Charnwut CHAN, GBM, GBS, JP
Chairman and President
Asia Financial Holdings Limited

The Honourable Rimsky YUEN Kwok-keung, GBM, SC, JP
Temple Chambers

Mr Tim LUI Tim-leung, SBS, JP
Chairman
Securities and Futures Commission

Professor TAM Kar-yan, MH, JP
Dean and Chair Professor, School of Business and Management
The Hong Kong University of Science and Technology

Dr the Honourable Victor FUNG Kwok-king, GBM, GBS
Chairman
Fung Group

Secretary

Ms Sarah KWOK

The Exchange Fund Advisory Committee

Audit Sub-Committee

The Audit Sub-Committee reviews and reports on the HKMA's financial reporting process and the adequacy and effectiveness of the internal control systems of the HKMA. The Sub-Committee reviews the HKMA's financial statements, and the composition and accounting principles adopted in such statements. It also examines and reviews with both the external and internal auditors the scope and results of their audits. None of the members of the Sub-Committee performs any executive functions in the HKMA. The Sub-Committee met two times in 2022 and received reports on the work of the Risk Committee and the Internal Audit Division.

Chairman

Mr Stephen YIU Kin-wah, JP
Chairman
Insurance Authority

Members

Mr LAU Ming-wai, GBS, JP
Chairman
Chinese Estates Holdings Limited

Mr Tim LUI Tim-leung, SBS, JP
Chairman
Securities and Futures Commission

Ms Agnes CHAN Sui-kuen
Senior Advisor, Chairman Office, Greater China
Ernst & Young

Mr Raymund CHAO Pak-ki
Chairman of PwC Asia Pacific
Chairman & CEO of PwC China

Secretary

Ms Sarah KWOK

Advisory Committees

The Exchange Fund Advisory Committee

Currency Board Sub-Committee

The Currency Board Sub-Committee monitors and reports on the Currency Board arrangements that underpin Hong Kong's Linked Exchange Rate System. It is responsible for ensuring that Currency Board operations are in accordance with established policy, recommending improvements to the Currency Board system, and ensuring a high degree of transparency in the operation of the system. Records of the Sub-Committee's meetings and the reports on Currency Board operations submitted to the Sub-Committee are published regularly. In 2022, the Sub-Committee met four times.

Chairman

Mr Eddie YUE, JP
The Monetary Authority

Members

Mr Arthur YUEN, JP
Deputy Chief Executive
Hong Kong Monetary Authority

Mr Edmond LAU, JP
Deputy Chief Executive
Hong Kong Monetary Authority
(until 31 October 2022)

Dr John GREENWOOD, SBS
Chief Economist
International Monetary Monitor Limited

Dr PENG Wensheng
Chief Economist, Head of Research Department
China International Capital Corporation Limited
Dean of the CICC Global Institute (CGI)

Professor Heiwai TANG
Director, Asia Global Institute
Victor and William Fung Professor in Economics
HKU Business School

Mr SUN Yu
Chairperson
The Hong Kong Association of Banks
(from 1 January 2023)

Ms Mary HUEN Wai-yi, JP
Chairperson
The Hong Kong Association of Banks
(until 31 December 2022)

Mr Howard LEE, JP
Deputy Chief Executive
Hong Kong Monetary Authority

Mr Darryl CHAN, JP
Deputy Chief Executive
Hong Kong Monetary Authority
(from 1 November 2022)

Professor Lawrence J. LAU, GBS, JP
Ralph and Claire Landau Professor of Economics
The Chinese University of Hong Kong

Mrs Helen CHAN, SBS, JP

Professor Michael SONG Zheng
Wei Lun Professor of Economics
Chairman, Department of Economics
The Chinese University of Hong Kong
(from 1 January 2023)

Professor LIN Chen
Chair of Finance and Stelux Professor in Finance
Faculty of Business and Economics, The University of Hong Kong
(until 31 December 2022)

Secretary

Ms Sarah KWOK

The Exchange Fund Advisory Committee

Investment Sub-Committee

The Investment Sub-Committee monitors the HKMA's investment management work and makes recommendations on the investment policy and strategy of the Exchange Fund and on risk management and other related matters. The Sub-Committee held five meetings during 2022.

Chairman

Mr Eddie YUE, JP
The Monetary Authority

Members

Mr Howard LEE, JP
Deputy Chief Executive
Hong Kong Monetary Authority

Mr Nicky LO Kar-chun, SBS, JP

Mr Stephen YIU Kin-wah, JP
Chairman
Insurance Authority

Professor TAM Kar-yan, MH, JP
Dean and Chair Professor, School of Business and Management
The Hong Kong University of Science and Technology

Mr Raymund CHAO Pak-ki
Chairman of PwC Asia Pacific
Chairman & CEO of PwC China

Dr the Honourable Victor FUNG Kwok-king, GBM, GBS
Chairman
Fung Group

Secretary

Ms Sarah KWOK

Advisory Committees

The Exchange Fund Advisory Committee

Financial Infrastructure and Market Development Sub-Committee

The Financial Infrastructure and Market Development Sub-Committee makes recommendations on measures to further develop Hong Kong's status as an international financial centre and strengthen the international competitiveness of Hong Kong's financial services, including promoting the development, operational excellence, safety and efficiency of the financial infrastructure in Hong Kong; and promoting the development of Hong Kong as an offshore renminbi centre and fostering the development of other enabling factors. It also makes recommendations on initiatives for the HKMA and monitors the work of the HKMA. In 2022, the Sub-Committee met four times.

Chairman

Mr Eddie YUE, JP
The Monetary Authority

Members

Mr Arthur YUEN, JP
Deputy Chief Executive
Hong Kong Monetary Authority

Mr Howard LEE, JP
Deputy Chief Executive
Hong Kong Monetary Authority

Mr Edmond LAU, JP
Deputy Chief Executive
Hong Kong Monetary Authority
(until 31 October 2022)

Mr Darryl CHAN, JP
Deputy Chief Executive
Hong Kong Monetary Authority
(from 1 November 2022)

Mrs Ayesha MACPHERSON LAU, BBS, JP
Chairman
Mandatory Provident Fund Schemes Authority

The Honourable Bernard Charnwut CHAN, GBM, GBS, JP
Chairman and President
Asia Financial Holdings Limited

Mr Ericson CHAN
Group Chief Information & Digital Officer
Zurich Insurance Company

Mr Leong CHEUNG

Ms Mary HUEN Wai-yi, JP
Executive Director and Chief Executive Officer, Hong Kong
Cluster Chief Executive Officer (Hong Kong, Taiwan & Macau)
Standard Chartered Bank (Hong Kong) Limited

Mrs Ann KUNG YEUNG Yun-chi, BBS, JP
Advisor
Bank of China (Hong Kong) Limited

Ms Miranda KWOK Pui-fong, JP
Non-Executive Director
China Construction Bank (Asia) Corporation Limited

Ms Amy LO Choi-wan
Co-Head UBS Wealth Management APAC
Head and Chief Executive UBS Hong Kong Branch
UBS

Advisory Committees

Mr Dennis CHOW Chi-in
Chair, Deloitte Asia Pacific
Deputy Chair, Deloitte Global

Ms Angel NG Yin-yee
Head of Asia, Citi Global Wealth

Dr Jim LAI
Chairman of Fusion Bank

Ms Luanne LIM
Chief Executive, Hong Kong
The Hongkong and Shanghai Banking Corporation Limited
(from 20 September 2022)

The Honourable Rimsky YUEN Kwok-keung, GBM, SC, JP
Temple Chambers

Ms Diana CESAR, JP
Executive Director and Chief Executive
Hang Seng Bank

Professor TAM Kar-yan, MH, JP
Dean and Chair Professor, School of Business and Management
The Hong Kong University of Science and Technology

Dr the Honourable Moses CHENG Mo-chi, GBM, GBS, JP
Consultant
P. C. Woo & Co.
(until 31 January 2022)

Secretary

Ms Sarah KWOK

Advisory Committees

Banking Advisory Committee

The Banking Advisory Committee is established under section 4(1) of the Banking Ordinance to advise the Chief Executive of the Hong Kong Special Administrative Region on matters relating to the Banking Ordinance, in particular matters relating to banks and the carrying on of banking business. The Committee consists of the Financial Secretary as the Chairman, the Monetary Authority, and other persons appointed by the Financial Secretary under the delegated authority of the Chief Executive of the Hong Kong Special Administrative Region.

Three joint meetings of the Banking Advisory Committee and the Deposit-taking Companies Advisory Committee were held in 2022.

Chairman

The Honourable Paul CHAN Mo-po, GBM, GBS, MH, JP
The Financial Secretary

Ex Officio Member

Mr Eddie YUE, JP
The Monetary Authority

Members

The Honourable Christopher HUI Ching-yu, GBS, JP
Secretary for Financial Services and the Treasury

Ms Luanne LIM
Chief Executive, Hong Kong
The Hongkong and Shanghai Banking Corporation Limited
Representing The Hongkong and Shanghai Banking Corporation Limited

Mr Tim LUI Tim-leung, SBS, JP
Chairman
Securities and Futures Commission
Representing Securities and Futures Commission

Mr Paul YANG
Chief Executive Officer
Corporate and Institutional Banking Asia Pacific
BNP Paribas

Ms KWANG Kam-shing
Chief Executive Officer
Asia Private Bank
JPMorgan Chase Bank, N.A.
(until 30 November 2022)

Mr SUN Yu
Vice Chairman and Chief Executive
Bank of China (Hong Kong) Limited
Representing Bank of China (Hong Kong) Limited

Ms Mary HUEN Wai-yi, JP
Executive Director and Chief Executive Officer, Hong Kong
Cluster Chief Executive Officer (Hong Kong, Taiwan & Macau)
Standard Chartered Bank (Hong Kong) Limited
Representing Standard Chartered Bank (Hong Kong) Limited

The Honourable CHAN Chun-ying, JP
Member
Legislative Council

Ms Angel NG Yin-yee
Head of Asia
Citi Global Wealth
(from 1 December 2022)

Mr Yoshikazu SHIMAUCHI
Executive Officer
Managing Director
Head of Hong Kong Branch
MUFG Bank, Limited
(until 20 May 2022)

Secretary

Ms Jasmin FUNG

Advisory Committees

Deposit-taking Companies Advisory Committee

The Deposit-taking Companies Advisory Committee is established under section 5(1) of the Banking Ordinance to advise the Chief Executive of the Hong Kong Special Administrative Region on matters relating to the Banking Ordinance, in particular matters relating to deposit-taking companies and restricted licence banks and their carrying on of business of taking deposits.
The Committee consists of the Financial Secretary as the Chairman, the Monetary Authority, and other persons appointed by the Financial Secretary under the delegated authority of the Chief Executive of the Hong Kong Special Administrative Region.

Three joint meetings of the Banking Advisory Committee and the Deposit-taking Companies Advisory Committee were held in 2022.

Chairman

The Honourable Paul CHAN Mo-po, GBM, GBS, MH, JP
The Financial Secretary

Ex Officio Member

Mr Eddie YUE, JP
The Monetary Authority

Members

The Honourable Christopher HUI Ching-yu, GBS, JP
Secretary for Financial Services and the Treasury

Mrs Lourdes A. SALAZAR
Chairperson
The DTC Association (The Hong Kong Association of Restricted Licence Banks and Deposit-taking Companies)
Representing The DTC Association

Ms Gilly WONG Fung-han
Chief Executive
Consumer Council
Representing the Consumer Council

The Honourable Elizabeth QUAT, BBS, JP
Member
Legislative Council

Mr CHONG Yam-kiang
Executive Director and Chief Executive
Public Finance Limited

Mr Dennis CHOW Chi-in
Chair, Deloitte Asia Pacific
Deputy Chair, Deloitte Global
(from 1 December 2022)

Mr Andy POON Shiu-chung
Chief Executive Officer
First Abu Dhabi Bank Hong Kong Branch
(Former Chief Executive of Scotiabank (Hong Kong) Limited)
(until 30 November 2022)

Mr Jack CHAN Hoi
Chairman, China
Regional Managing Partner, Greater China
Ernst & Young
(until 30 November 2022)

Secretary

Ms Jasmin FUNG

Chief Executive's Committee

1 April 2023

The Chief Executive's Committee comprises the Chief Executive of the HKMA, who chairs the Committee, the Deputy Chief Executives, the Senior Executive Director and other senior staff. The Committee meets regularly to report to the Chief Executive on the progress of major tasks being undertaken by the various departments of the HKMA and to advise him on policy matters relating to the operations of the HKMA.

Eddie YUE, JP
Chief Executive

Arthur YUEN, JP
Deputy Chief Executive

Howard LEE, JP
Deputy Chief Executive

Darryl CHAN, JP
Deputy Chief Executive
(from 1 November 2022)
Executive Director
(External)[1]

Edmond LAU, JP
Deputy Chief Executive
(until 31 October 2022)

Raymond LI, JP
Senior Executive Director
Chief Executive Officer
Hong Kong Mortgage Corporation

[1] Mr Darryl Chan continues to take the post of Executive Director (External) until the vacancy is filled.

Chief Executive's Committee

Stefan GANNON, JP
Special Adviser to CE

Karen KEMP, JP
General Counsel

Carmen CHU, JP
Executive Director
(Enforcement and AML)

Grace LAU, JP
Executive Director
(Risk and Compliance)
Chief Risk Officer
(Exchange Fund Investment Office)

Lillian CHEUNG, JP
Executive Director
(Research)

Raymond CHAN, JP
Executive Director
(Banking Supervision)

Daryl HO, JP
Executive Director
(Banking Policy)

Alan AU, JP
Executive Director
(Banking Conduct)

Colin POU, JP
Executive Director
(Financial Infrastructure)

Clara CHAN
Executive Director
(Monetary Management)

Donald CHEN
Executive Director
(Corporate Services)

Francis CHU, JP
Deputy Chief Executive Officer
(Exchange Fund Investment Office)
(until 10 March 2023)

Organisation Chart

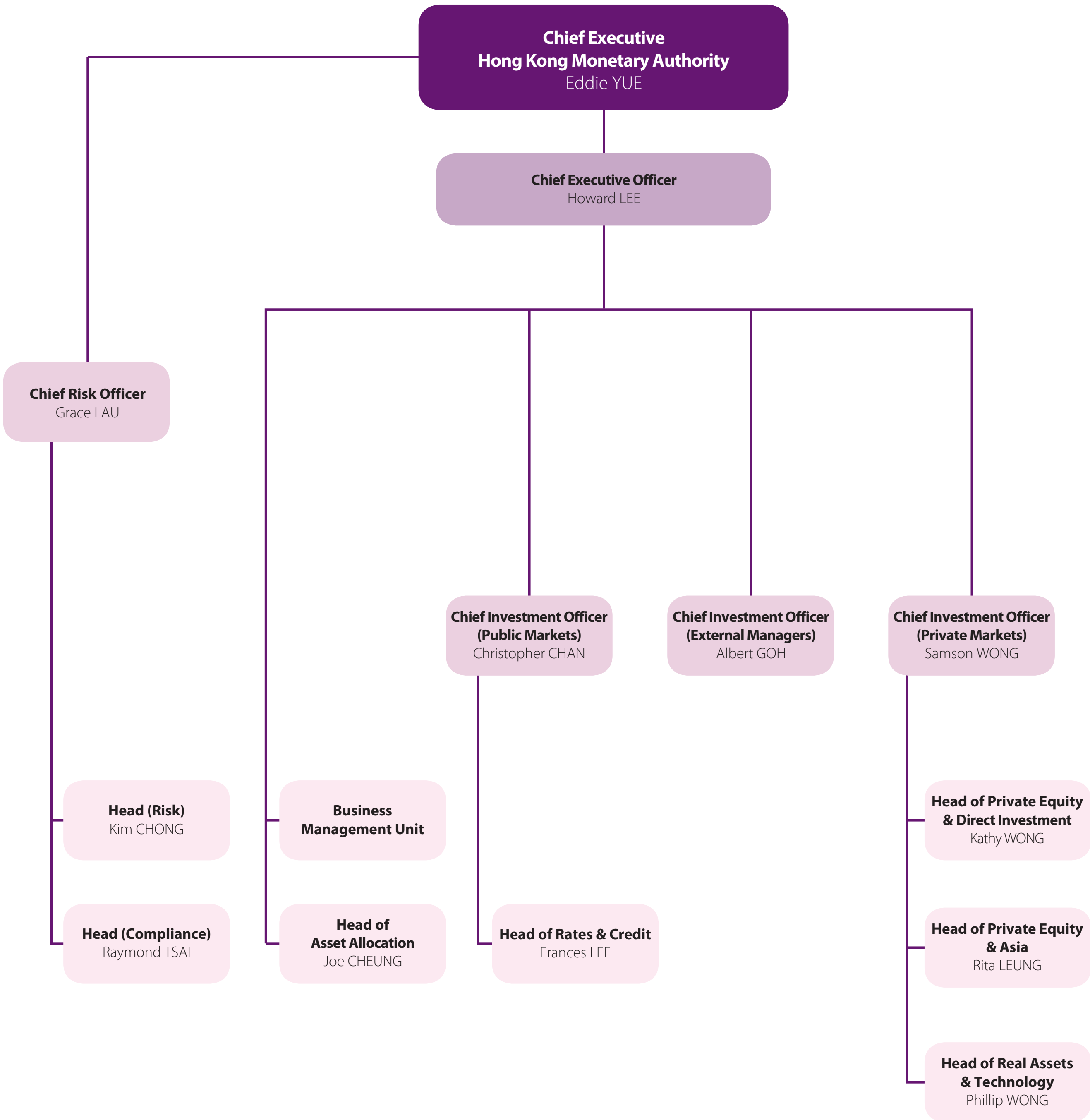
Hong Kong Monetary Authority

1 April 2023

- **Chief Executive** Eddie YUE
  - **Deputy Chief Executive** Arthur YUEN
    - **Executive Director (Banking Conduct)** Alan AU
      - **Head (Banking Conduct) 1** Florence TO
      - **Head (Banking Conduct) 2** Tess LEUNG
      - **Head (Banking Conduct) 3** Andrew WU
    - **Executive Director (Banking Policy)** Daryl HO
      - **Head (Banking Policy) A** HUI Cho-hoi
      - **Head (Banking Policy) B** Richard CHU
      - **Head (Soft Infrastructure & Deposit Protection)** Carrie CHAN
      - **Head (Research & Development Unit)** Martin SPRENGER
    - **Executive Director (Banking Supervision)** Raymond CHAN
      - **Head (Case Management) 1** Archie NG
      - **Head (Case Management) 2** Stephen WAN
      - **Head (Case Management) 3** Steve LAU
      - **Head (Credit Risk)** CHENG Ying-ying
      - **Head (Operational & Technology Risk)** Kyle HUNG
      - **Head (Market & Liquidity Risk)** LEE Chi-kau
    - **Executive Director (Enforcement & AML)** Carmen CHU
      - **Head (Enforcement) 1** Frank LEUNG
      - **Head (Enforcement) 2** Alice LEE
      - **Head (Anti-Money Laundering& Financial Crime Risk)** Stewart MCGLYNN
  - **Deputy Chief Executive** Howard LEE
    - **Exchange Fund Investment Office (EFIO)** *(See separate organisation chart next page)*
    - **Executive Director (Financial Infrastructure)** Colin POU
      - **Head (Financial Infrastructure Development)** Kitty LAI
      - **Head (Payment Systems Operation)** Stanley CHAN
      - **Chief Fintech Officer (Fintech Facilitation Office)** Nelson CHOW
  - **Deputy Chief Executive** Darryl CHAN
    - **Executive Director (External)**
      - **Head (External) 1** Daniel LEONG
      - **Head (External) 2** Enoch FUNG
      - **Head (Market Development)** Kenneth HUI
      - **Chief Representative (New York Representative Office)**
    - **Executive Director (Monetary Management)** Clara CHAN
      - **Head (Currency & Settlement)** Samson YUEN
      - **Head (Financial Stability Surveillance)** Silvia PEZZINI
      - **Head (Monetary Operations)** Kimberly CHENG
      - **Head (Retail Payment Oversight)** Keith KWOK
      - **Head (Digital Finance)** Ernest HO
    - **Executive Director (Research)** Lillian CHEUNG
      - **Head (Economic Research)** Michael CHENG
      - **Head (Market Research)** Eric WONG
  - **General Counsel** Karen KEMP
    - **Deputy General Counsel 1** YIP Kin-son
    - **Deputy General Counsel 2** Stephen LAW
    - **Deputy General Counsel 3** Mayanna TO
    - **Deputy General Counsel 4** Elizabeth COUPE
  - **Executive Director (Corporate Services)** Donald CHEN
    - **Head (Human Resources)** Eudia LAI
    - **Head (Corporate Development)** Sarah KWOK
    - **Head (Finance)** Tony SUEN
    - **Chief Information Officer** Joseph CHAN
    - **Chief Communications Officer** Rhonda LAM
  - **Executive Director (Risk & Compliance) / Chief Risk Officer (EFIO)** Grace LAU
  - **Special Adviser to CE** Stefan GANNON
  - **Head (Resolution Office)** Arthur YEUNG
  - **Head (Internal Audit)** Raymond CHENG
  - **Administrative Assistant/CE** Raymond YUEN

Organisation Chart

Exchange Fund Investment Office



Economic and Financial Environment

The Hong Kong economy contracted visibly in 2022 alongside the fifth wave of COVID-19, tightened financial conditions and a challenging external environment. The labour market deteriorated for some time before improving, while inflation remained moderate. Asset markets were also under pressure. Economic growth for 2023 is expected to recover from a low base, riding on the re-opening of the Mainland and Hong Kong.

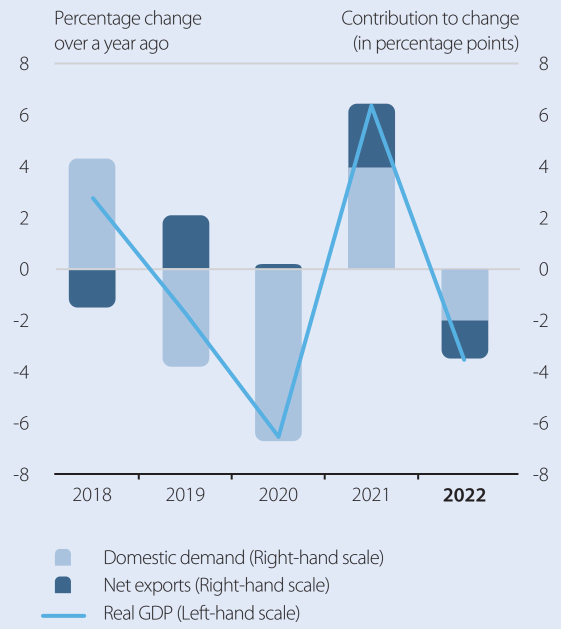
Economic and Financial Environment

The economy in review

Real activities

The Hong Kong economy contracted by 3.5% in 2022 amid multiple domestic and external headwinds (Table 1 and Chart 1). Domestically, private consumption plunged in the first quarter due to the fifth wave of COVID-19 in Hong Kong, but sequential growth resumed thereafter thanks to the progressive relaxation of social distancing measures and the boosting effect from the Government's Consumption Voucher Scheme[1]. Overall investment expenditure tumbled from 2021 amid soft business sentiment and tightened financial conditions. Externally, Hong Kong's exports of goods plummeted along with weakened external demand and the disruptions to the cross-boundary truck movements between the Mainland and Hong Kong. Partly reflecting the subdued inbound tourism activities, exports of services remained generally weak . However, there was a slight improvement in the fourth quarter after the Government lifted the compulsory quarantine requirements on arrival in Hong Kong in late September.

Chart 1 Real GDP growth by contribution



Source: Census and Statistics Department

Table 1 Real gross domestic product (GDP) growth by expenditure component (period-over-period)

	2022					2021				
(% Period-over-period, unless otherwise specified)	**Q1**	**Q2**	**Q3**	**Q4**	**2022**	Q1	Q2	Q3	Q4	2021
Gross Domestic Product	**(1.8)**	**0.3**	**(2.6)**	**0.0**	**(3.5)**	6.9	(2.3)	0.7	(0.5)	6.4
(year-on-year growth)	**(3.9)**	**(1.2)**	**(4.6)**	**(4.2)**		8.2	7.6	5.5	4.7	
Private consumption expenditure	**(8.9)**	**8.3**	**0.9**	**2.3**	**(1.0)**	1.9	2.2	1.1	0.2	5.6
Government consumption expenditure	**4.7**	**5.4**	**(3.9)**	**2.9**	**8.1**	3.8	(1.1)	2.7	(0.7)	5.9
Gross domestic fixed capital formation	**–**	**–**	**–**	**–**	**(8.5)**	–	–	–	–	8.3
Exports										
Exports of goods	**(6.9)**	**(5.4)**	**(7.6)**	**(7.8)**	**(13.9)**	11.0	(1.2)	(0.1)	3.2	18.7
Exports of services	**1.7**	**(0.7)**	**(3.0)**	**4.0**	**(0.9)**	14.2	(5.9)	3.5	(2.3)	3.4
Imports										
Imports of goods	**(7.4)**	**(0.1)**	**(9.7)**	**(7.8)**	**(13.2)**	8.0	0.2	1.3	(0.2)	17.2
Imports of services	**(2.5)**	**0.6**	**(0.4)**	**5.4**	**(1.0)**	4.1	(1.3)	1.4	(0.6)	2.5

Note: The seasonally adjusted quarter-on-quarter rates of change in the gross domestic fixed capital formation are not available.
Source: Census and Statistics Department

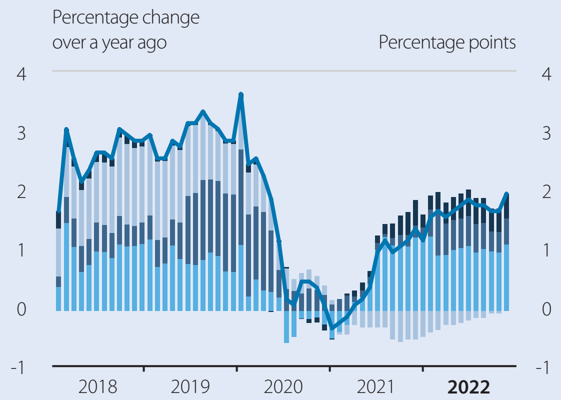
[1] The Government introduced countercyclical measures in the 2022–23 Budget to support the economy, which included the distribution of two phases of electronic consumption vouchers worth HK$10,000 in total to each eligible resident.

Economic and Financial Environment

Inflation

Local inflation edged up but remained moderate in 2022. Specifically, the year-on-year underlying inflation rate[2] picked up gradually to a mild 2% in December, as the impact of elevated external energy and food prices was partly offset by the effect of mild domestic cost pressures, especially housing rentals (Chart 2). In addition, nominal wage growth and commercial rentals remained soft alongside weak economic activities, which also helped keep inflation in check. For 2022 as a whole, the underlying and headline inflation rates[3] were 1.7% and 1.9% respectively.

Chart 2 Underlying consumer price inflation



Note: "Energy" items include electricity, town gas, liquefied petroleum gas and other fuel, and motor fuel.

Sources: *Census and Statistics Department and HKMA staff estimates*

Labour market

Labour market conditions swiftly deteriorated in early 2022 amid the pandemic but improved for the rest of the year. After reaching a peak of 5.4% in April, the unemployment rate fell visibly to 3.5% in December[4] (Chart 3) and the decline was broad-based across most economic sectors. Overall labour demand recovered gradually as reflected by a pick-up in total employment (Chart 3) and private sector vacancies, though total employment was still below the pre-pandemic level. The nominal wage and labour earnings also showed slightly faster year-on-year growth. On the other hand, the labour force shrank slightly by 1.5% in December compared with a year earlier, partly due to a modest decline in the labour force participation rate.

Chart 3 Labour market conditions

Source: *Census and Statistics Department*

[2] The underlying inflation rate is the change in the Composite Consumer Price Index after netting out the effects of the Government's one-off relief measures to reflect the underlying inflation trend.

[3] The headline inflation rate is the raw inflation figure calculated from the change in the Composite Consumer Price Index, which includes the effects of the Government's one-off relief measures. It is compiled by the Census and Statistics Department. The year-on-year headline inflation rate gradually increased from 1.5% in the first quarter to 1.8% in the fourth quarter.

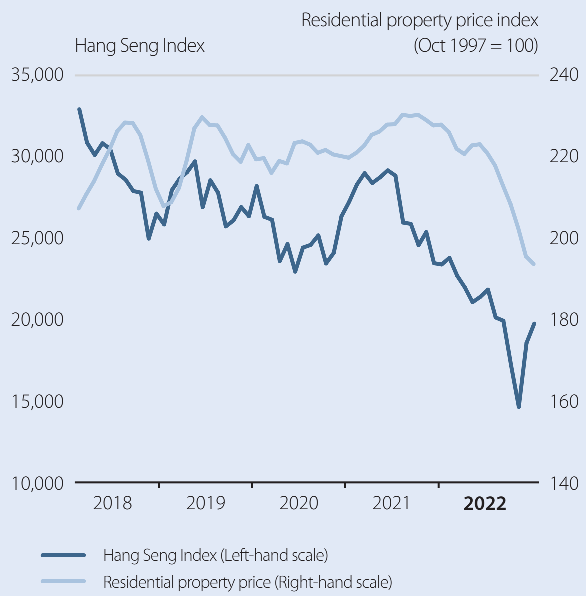
[4] The underemployment rate also declined from a high of 3.8% in April to 1.5% in December.

Economic and Financial Environment

Stock market

The local stock market underwent sharp fluctuations over the course of 2022. Continuing its downtrend in 2021, the Hang Seng Index fell at an accelerated pace to 14,687 on 31 October 2022, the lowest closing level since 2009 (Chart 4). The marked correction was initially driven by growing concerns over the local COVID-19 infections, the US rate hikes and the Russia-Ukraine situation, and the correction widened further later on as a result of a weaker global economic prospect arising from the tightened global financial conditions and Mainland's COVID-19 outbreaks. Stock prices regained some upward momentum in the last two months of the year due in part to Mainland's relaxation of COVID-19 measures. The Hang Seng Index closed the year at 19,781, down notably by 15.5% from the end of 2021 and marking the third consecutive year of decline.

Chart 4 Asset prices



Sources: Rating and Valuation Department and Hong Kong Exchanges and Clearing Limited

Property market

The residential property market was also under pressure amid tightened financial conditions and weak economic activities. Housing prices fell 15% in 2022 (Chart 4) and housing transactions plunged by 39% to 45,050 units, the lowest level on record. Housing affordability remained stretched despite lower housing prices. The effective mortgage interest rates increased from around 1.6% to 3.375%–3.625% during the year, adding to the repayment burden of mortgage borrowers.[5] Likewise, the non-residential property markets turned more sluggish, with prices retreating and rentals remaining soft along with high vacancy rate.

[5] The HKMA lowered the interest rate stress testing requirement on property mortgage lending by banks from three percentage points to two percentage points in September. The move had taken into consideration the changes in banks' risk management needs, the prevailing interest rate environment, the trend of mortgage rates, as well as their long-term historical average. See also the circular *Property Mortgage Lending* issued by the HKMA on 23 September 2022.

Economic and Financial Environment

Outlook for the economy

Economic environment

Economic growth for 2023 is expected to recover from a low base riding on the re-opening of the Mainland and Hong Kong. While the expected weaker growth of the advanced economies will continue to weigh on Hong Kong's exports of goods, the recovery of the Mainland economy and the lifting of restrictions on cross-boundary land transportation could provide the local economy with some support. The re-opening of the Mainland and Hong Kong should greatly benefit Hong Kong's inbound tourism and other exports of services, as well as local business sentiment and capital spending. Private consumption will also improve further along with a stronger labour market. The Government forecasts real GDP to grow visibly by 3.5%–5.5% for the whole year of 2023[6]. That said, the growth outlook is fraught with risks and uncertainties, and would largely hinge on the US Federal Reserve's policy rate path, the global growth prospects, the evolving geopolitical tensions, and the recovery pace of Hong Kong's inbound tourism.

Inflation and the labour market

Looking ahead, local inflation is expected to edge up, but shall stay mild amid offsetting forces. While external prices should remain elevated, their upward momentum will likely moderate further alongside weaker economic activities in some major advanced economies and an easing of the upward pressures on commodity prices. Similarly, domestic cost pressures may edge up alongside the recovery of the local economy and the labour market, but the soft housing rentals should continue to provide some offset. For 2023 as a whole, the Government projects the headline and underlying inflation rates to be 2.9% and 2.5% respectively[7]. On the other hand, labour market conditions are likely to improve further as local economic activities resume normalcy.

[6] The growth estimates by private sector analysts average 3.7%.

[7] Market consensus forecasts a headline inflation rate of 2.4% in 2023.

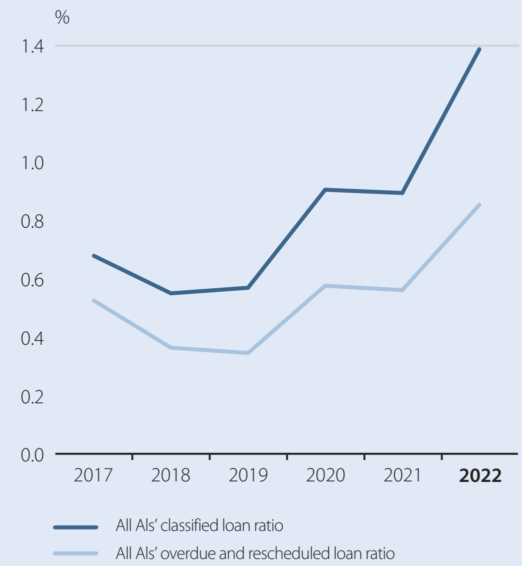
Performance of the banking sector

The Hong Kong banking sector was confronted with a challenging macroeconomic environment in 2022, characterised by the fifth wave of COVID-19 infections in the early part of the year, heightened geopolitical tensions, and aggressive interest rate hikes by major central banks globally to tame rising inflation. Banks in Hong Kong overcame these challenges well, continuing to maintain strong capital and liquidity positions. The credit risk facing the banking sector increased during the year, but the overall asset quality of the banks remained at a healthy level. Meanwhile, while the net interest income of banks increased amid rising interest rates, the positive effect was partly offset by the rising bad debt provisions and declining income from fees and commissions. Overall, the profitability of retail banks improved over the level in 2021.

Asset quality

The classified loan ratio of the banking sector increased to 1.38% at the end of 2022 from 0.89% at the end of 2021, with the overdue and rescheduled loan ratio edging up to 0.85% from 0.56% during the same period (Chart 5). The classified loan ratio for Mainland-related lending also increased to 2.21% at the end of 2022 from 0.89% a year before. The increase in the classified loan ratio was mainly due to downgrades of exposures to some Mainland property developers. That said, provisions set aside by the banks remained sufficient. The provision coverage ratio (i.e. total provisions to classified loans) stayed at around 80% at the end of 2022. If taking also into account the market value of collateral held against the classified loans, the adjusted provision coverage ratio would reach around 140%. In the meantime, the delinquency ratios of residential mortgage lending and credit card lending remained low at 0.06% and 0.23% respectively at the end of 2022 (Chart 6).

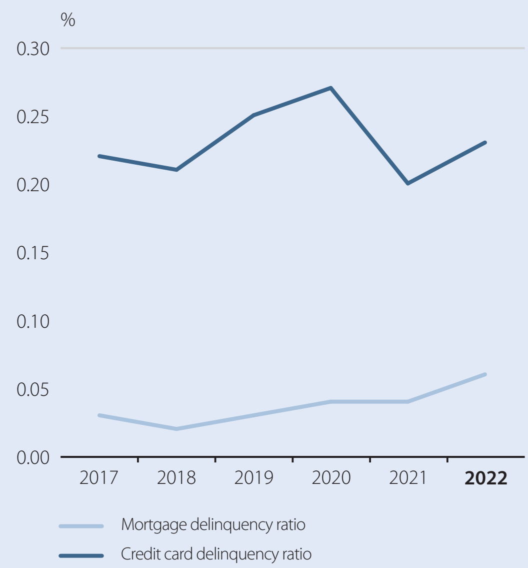
Chart 5 Asset quality of the banking sector



Note: Figures covered Hong Kong offices, overseas branches and major overseas subsidiaries.

Source: HKMA

Chart 6 Delinquency ratios of residential mortgages and credit card lending



Source: HKMA

Economic and Financial Environment

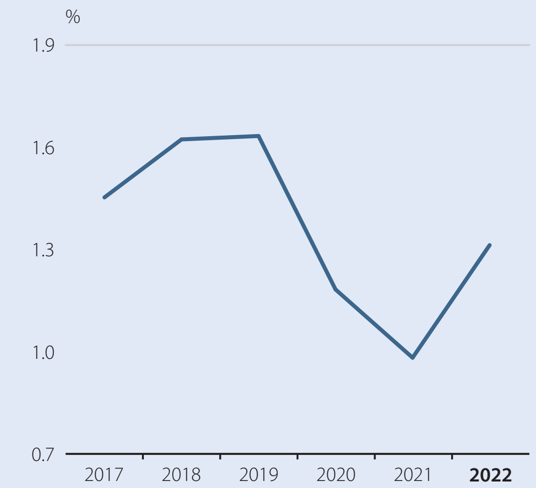
Profitability trends

The banking sector continued to be profitable in 2022. The aggregate pre-tax operating profit of retail banks increased by 19.0% in the year (Chart 7). The improvement in profit was attributable to increases in net interest income (+34%) and income from foreign exchange and derivatives (+72%), which were partly offset by an increase in bad debt provisions (+151%) and a reduction in income from fees and commissions (-19%). Against the backdrop of rising interest rates, net interest margin widened to 1.31% in 2022 from 0.98% a year before (Chart 8). Banks also recorded higher income from foreign exchange and derivatives business as a result of higher market volatility during the year. Bad debt provisions increased as specific provisions were set aside for new classified loans, while income from fees and commissions decreased amid lacklustre performance of the financial markets. Retail banks' cost-to-income ratio fell to 48.0% in 2022 from 54.7% in 2021 (Chart 9).

Chart 7 Retail banks' performance

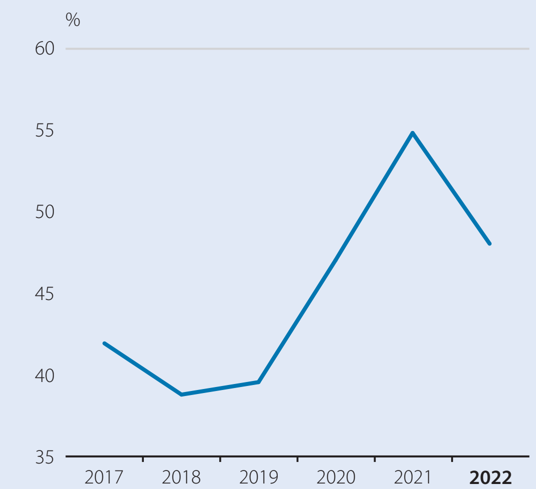
Source: HKMA

Chart 8 Retail banks' net interest margin



Source: HKMA

Chart 9 Retail banks' cost-to-income ratio



Source: HKMA

Balance sheet trends

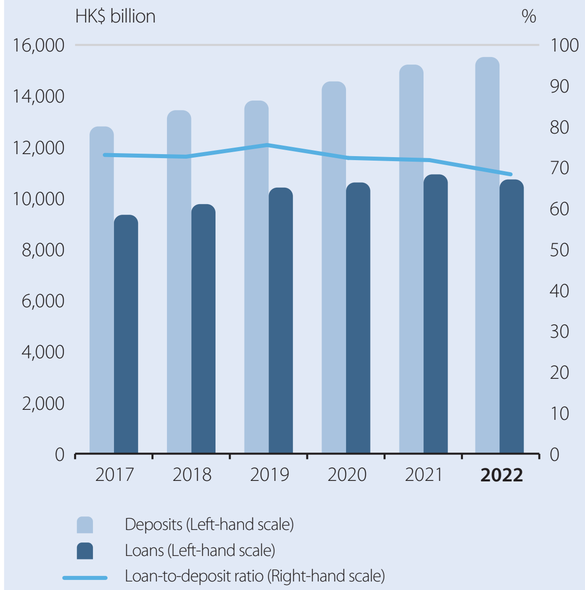
The banking sector's balance sheet grew by 2.5% in 2022. The increase in total assets was attributable to larger mark-to-market foreign exchange and derivatives positions. Given the uncertainties in the external environment and rising interest rates, loan demand weakened during the year. Total loans fell by 3.0% in 2022, compared with a growth of 3.8% in 2021. Among the total, loans for use outside Hong Kong decreased by 10.2% and trade finance decreased by 13.5%, while loans for use in Hong Kong increased slightly by 0.9%. Mainland-related lending fell by 4.4% in 2022, after expanding by 3.7% a year before.

On the liability side, the banking sector continued to record a moderate growth of deposits. Total deposits rose by 1.7% in 2022, compared with a growth of 4.6% in 2021. As total loans decreased while total deposits increased, the overall loan-to-deposit ratio edged down to 68.5% at the end of 2022 from 71.8% a year before (Chart 10).

Capital adequacy

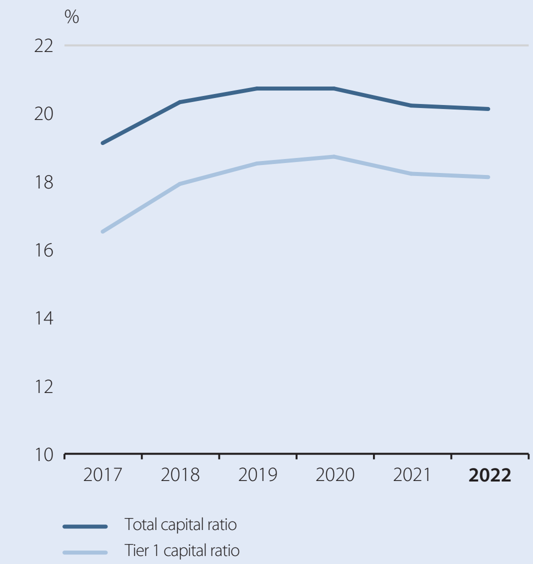
The capital positions of the banks remained strong in 2022. The consolidated total capital ratio of locally incorporated authorized institutions (AIs) stood at 20.1% at the end of 2022, compared with 20.2% a year before. The Tier 1 capital ratio was 18.1% (Chart 11). Both ratios were well above their respective international minimum requirements. The Basel III leverage ratio was 7.9% at the end of 2022 (Chart 12).

Chart 10 Loans and deposits of the banking sector



Source: *HKMA*

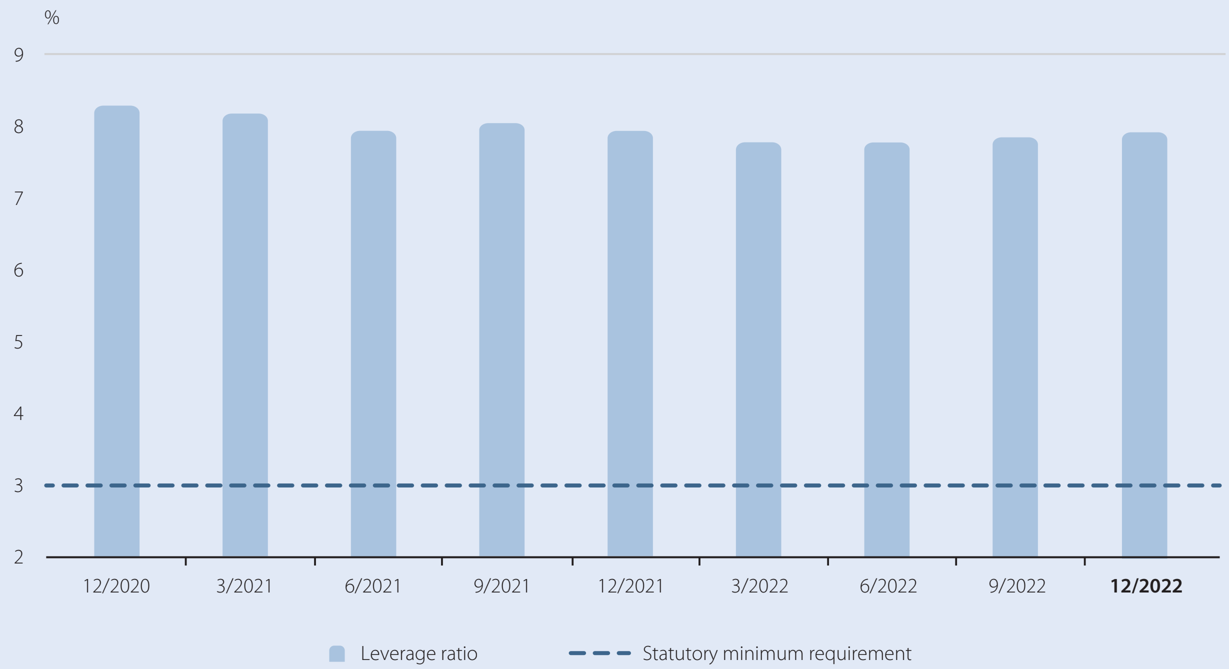
Chart 11 Consolidated capital ratios of locally incorporated AIs



Source: *HKMA*

Economic and Financial Environment

Chart 12 Consolidated leverage ratio of locally incorporated AIs

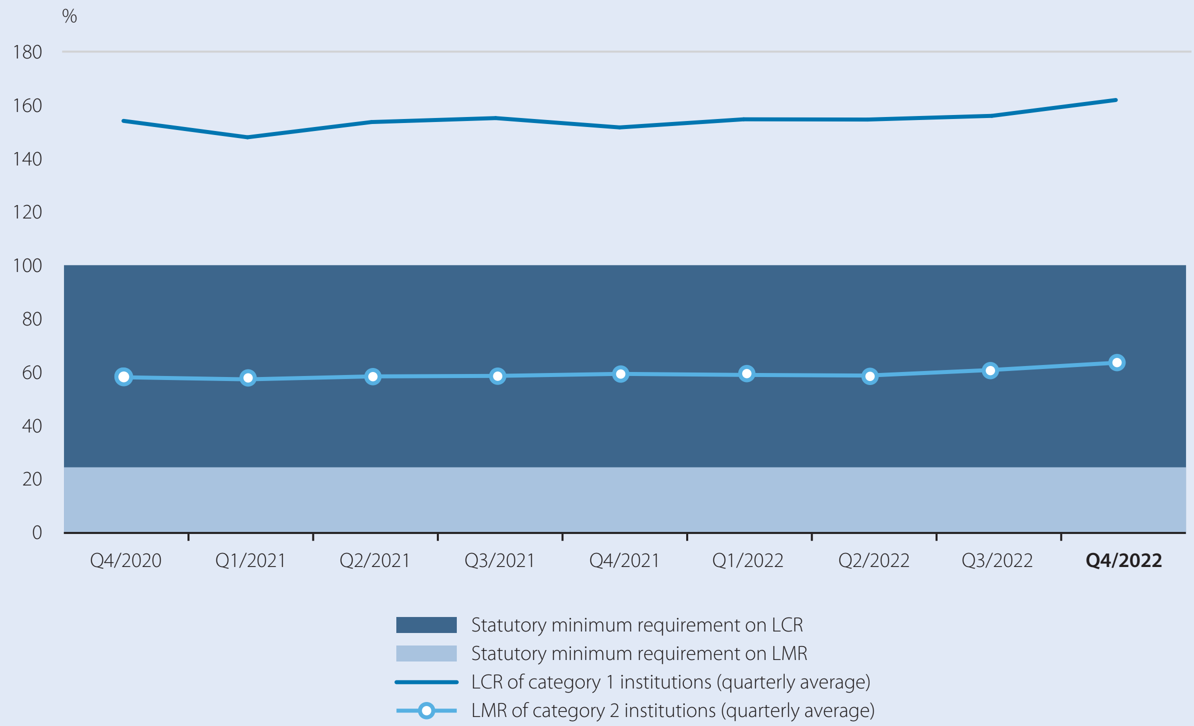


Source: HKMA

Liquidity conditions

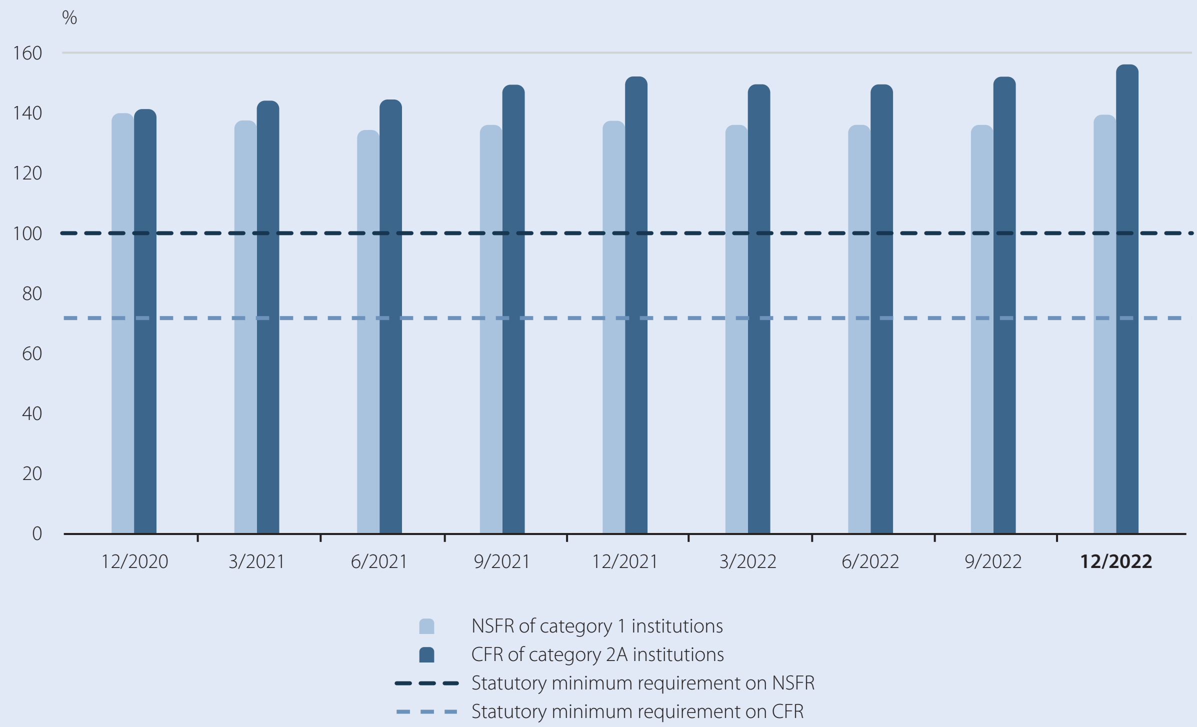
The banking sector continued to maintain robust liquidity position, providing a key source of strength in the face of heightened uncertainties in the macroeconomic environment. The quarterly average Liquidity Coverage Ratio (LCR) of category 1 institutions was 162.3% in the fourth quarter of 2022, and the quarterly average Liquidity Maintenance Ratio (LMR) of category 2 institutions was 63.2% (Chart 13). The main source of funding of the banking sector continued to be customer deposits. The Net Stable Funding Ratio (NSFR) of category 1 institutions and the Core Funding Ratio (CFR) of category 2A institutions were 137.7% and 155.7% at the end of 2022 respectively (Chart 14). All the four ratios were well above the statutory minimum requirements.

Chart 13 Liquidity ratios of designated AIs



Source: HKMA

Chart 14 Funding ratios of designated AIs



Source: HKMA

Monetary Stability

Amid tightening of the US monetary policy, the Hong Kong dollar softened in 2022, with the weak-side Convertibility Undertaking triggered 41 times between May and November. The Hong Kong dollar began regaining momentum in mid-November, thanks to stronger local equity market activities and seasonal year-end funding demand. Under the Linked Exchange Rate System, the Hong Kong Interbank Offered Rates generally track their US dollar counterparts. As the US continued to raise interest rates, the Hong Kong Interbank Offered Rates gradually rose during 2022. Overall, the Hong Kong dollar exchange and money markets remained stable and traded in a smooth and orderly manner. As the cornerstone of Hong Kong's monetary and financial stability, the Linked Exchange Rate System has shown its strength and resilience to various external shocks time and again.

Objectives

The overriding objective of Hong Kong's monetary policy is currency stability. This is defined as a stable external exchange value of Hong Kong's currency, in terms of its exchange rate in the foreign exchange market against the US dollar, within a band of HK$7.75–7.85 to US$1. The structure of the monetary system is characterised by Currency Board arrangements, requiring the Monetary Base to be at least 100% backed by US dollar reserves held in the Exchange Fund, and changes in the Monetary Base to be 100% matched by corresponding changes in US dollar reserves.

The Monetary Base (Table 1) comprises:

- Certificates of Indebtedness, which provide full backing to the banknotes issued by the three note-issuing banks;
- Government-issued currency notes and coins in circulation;
- The Aggregate Balance, which is the sum of clearing account balances kept with the HKMA; and
- Exchange Fund Bills and Notes (EFBNs) issued by the HKMA on behalf of the Government.

Table 1 Monetary Base

HK$ million	**31 December 2022**	31 December 2021
Certificates of Indebtedness[a]	**605,575**	592,645
Government-issued currency notes and coins in circulation[a]	**13,151**	13,132
Balance of the banking system[b]	**96,251**	377,516
EFBNs issued[c]	**1,200,422**	1,148,769
TOTAL	**1,915,399**	2,132,062

a. The Certificates of Indebtedness and the Government-issued currency notes and coins in circulation shown here are stated at Hong Kong dollar face values. The corresponding items shown in the balance sheet of the Exchange Fund in this *Annual Report* are in Hong Kong dollars equivalent to the US dollar amounts required for their redemption at the prevailing exchange rates on the reporting date. This arrangement is in accordance with the accounting principles generally accepted in Hong Kong.

b. Balance of the banking system shown here is the carrying value before the amount advanced to the banks under the Discount Window Operations. In accordance with the accounting principles generally accepted in Hong Kong, the corresponding item shown in the balance sheet of the Exchange Fund in this *Annual Report* includes the amount of these advances.

c. The amount of EFBNs shown here refers to their fair value. In accordance with the accounting principles generally accepted in Hong Kong, the EFBNs held by the HKMA on behalf of the Exchange Fund in relation to its trading of the EFBNs in the secondary market are offset against the EFBNs issued, and the net amount is recorded in the balance sheet. The EFBNs allotted on tender dates but not yet settled are included in the balance sheet but are excluded from the Monetary Base. Therefore, the amount of EFBNs shown here is different from that in the balance sheet of the Exchange Fund in this *Annual Report*.

The stability of the Hong Kong dollar exchange rate is maintained through an automatic interest rate adjustment mechanism and the firm commitment by the HKMA to honour the Convertibility Undertakings (CUs). With the HKMA standing ready to sell (or buy) Hong Kong dollars to (or from) banks in exchange for US dollars upon request at HK$7.75 (or HK$7.85) per US dollar, when the strong-side (or weak-side) CU is triggered, the Aggregate Balance will expand (or contract) to push down (or up) Hong Kong dollar interest rates, helping move the Hong Kong dollar back to within the Convertibility Zone of 7.75 to 7.85.

Monetary Stability

Review of 2022

Exchange rate stability

Driven by the correction of the local stock market, market expectation of further US interest rate hikes and carry trades amid the negative HIBOR-LIBOR[1] spread, the Hong Kong dollar softened in early 2022 and stayed close to the weak-side CU in the following months. The weak-side CU was triggered 41 times between May and November. The Hong Kong dollar began regaining momentum in mid-November amid stronger local equity market activities and seasonal year-end funding demand (Chart 1). Overall, the Hong Kong dollar exchange market continued to function normally throughout 2022.

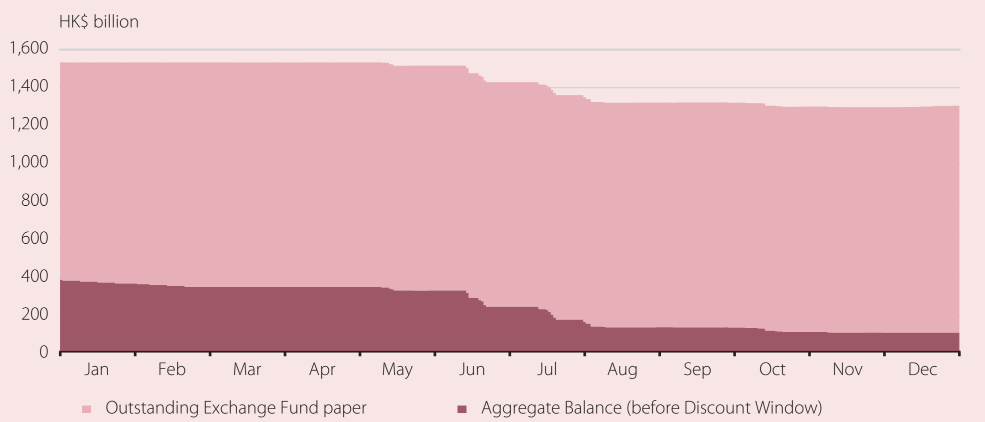
HK$1,296.7 billion

Total Aggregate Balance and outstanding EFBNs

In early 2022, the HKMA issued a total of HK$40 billion additional Exchange Fund Bills to meet the ongoing demand for Exchange Fund paper by banks. Also, from May to November 2022, the HKMA purchased a total of HK$242.1 billion at the weak-side CU at the request of banks in accordance with the design of the Linked Exchange Rate System (LERS). Reflecting the increased issuance of Exchange Fund Bills and the triggering of the weak-side CU, the Aggregate Balance decreased from HK$377.5 billion at the end of 2021 to HK$96.3 billion at the end of 2022. Meanwhile, the outstanding EFBNs increased slightly from HK$1,148.8 billion to HK$1,200.4 billion during the year. The total of the Aggregate Balance and outstanding EFBNs therefore declined from HK$1,526.3 billion at the end of 2021 to HK$1,296.7 billion at the end of 2022 (Chart 2). The Monetary Base as a whole remained fully backed by foreign exchange reserves.

Chart 1 Market exchange rate in 2022

Chart 2 Aggregate Balance (before Discount Window) and outstanding Exchange Fund papers in 2022



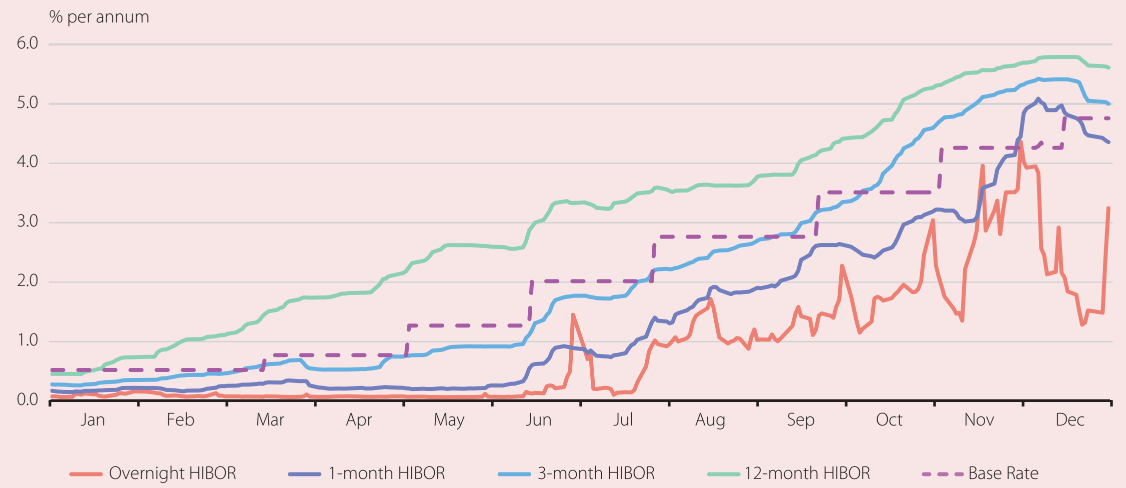
[1] HIBOR and LIBOR stand for Hong Kong Interbank Offered Rate and London Interbank Offered Rate respectively.

Money market

Under the LERS, the HIBORs generally track their US dollar counterparts. As the US continued to raise interest rates during 2022, the HIBORs gradually rose (Chart 3). For the year as a whole, the overnight, 1-month and 3-month HIBORs increased by 318, 419 and 473 basis points to 3.23%, 4.35% and 4.99% respectively at year end.

Following the increases in the target range for the US federal funds rate, the Base Rate was adjusted upwards seven times by a total of 4.25 percentage points (i.e. 425 basis points) from 0.5% to 4.75% (Chart 3).[2] On the retail front, following the US policy rate hikes, many banks raised their Best Lending Rates by 12.5 basis points in late September, 25 basis points in early November and another 25 basis points in mid-December. Some banks also increased the cap on HIBOR-based mortgage rates of newly approved mortgage loans during the year. Overall, Hong Kong's money markets continued to function normally. Discount Window borrowing increased to HK$8.4 billion in 2022 from HK$6.8 billion in 2021.

Chart 3 Hong Kong Interbank Offered Rates in 2022



2 The adjustments of the Base Rate were in accordance with the established formula, which sets the Base Rate at either 50 basis points above the lower bound of the prevailing target range for the US federal funds rate or the average of the five-day moving averages of the overnight and one-month HIBORs, whichever is the higher.

Monetary Stability

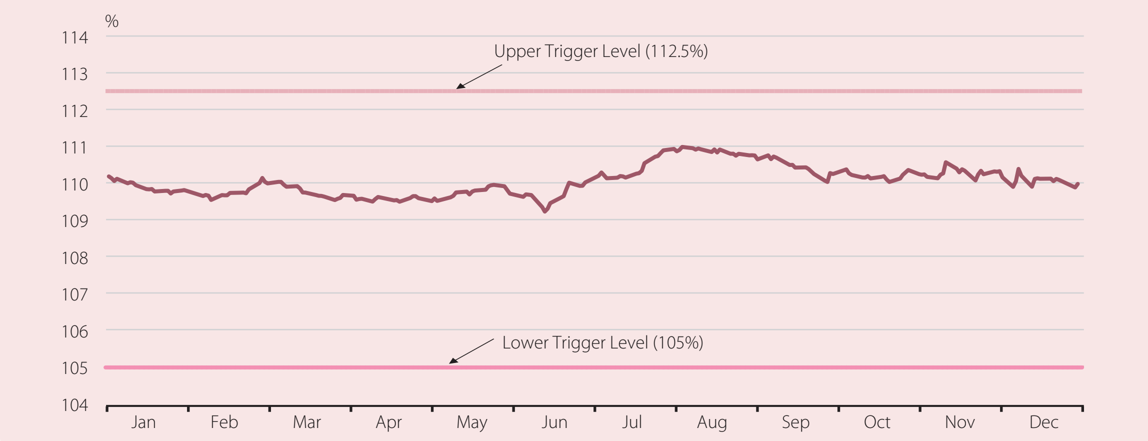
The Linked Exchange Rate System

The LERS has been a strong anchor of Hong Kong's financial system for nearly four decades and has shown its strength and resilience to challenges. Despite volatile global financial conditions during 2022, the Hong Kong dollar exchange and money markets continued to function in an orderly manner, reflecting the robustness of the LERS. The Government is firmly committed to the LERS. In its 2022 *External Sector Report*, the International Monetary Fund once again reiterated that the credibility of the LERS has been ensured by a transparent set of rules, large fiscal and foreign reserves, strong financial regulation and supervision, a flexible economy and a prudent fiscal framework.

A robust banking system is crucial to the normal functioning of the LERS. Hong Kong's banking sector continued to operate smoothly, with liquidity positions and capitalisation faring very well by international standards. To ensure resilience of the banking sector, the HKMA has been closely monitoring banks' management of credit, liquidity and interest rate risks and stress-test results, and has maintained its supervisory efforts on bank lending.

To improve transparency of the Currency Board Account, a specific portion of the Exchange Fund assets has been allocated to back the Monetary Base since October 1998. The Backing Ratio (defined as the Backing Assets divided by the Monetary Base) moved within a range of 109.3–111.0% during 2022, without touching the Upper or Lower Trigger Level. The ratio closed at 110.1% on 31 December (Chart 4). Under the LERS, while specific Exchange Fund assets have been designated for the Backing Portfolio, all Exchange Fund assets are available to support the Hong Kong dollar exchange rate. The ample financial resources of the Exchange Fund, together with the sound banking system, provide a powerful backstop to Hong Kong's monetary and financial stability.

Chart 4 **Daily movement of the Backing Ratio in 2022**



Currency Board Sub-Committee

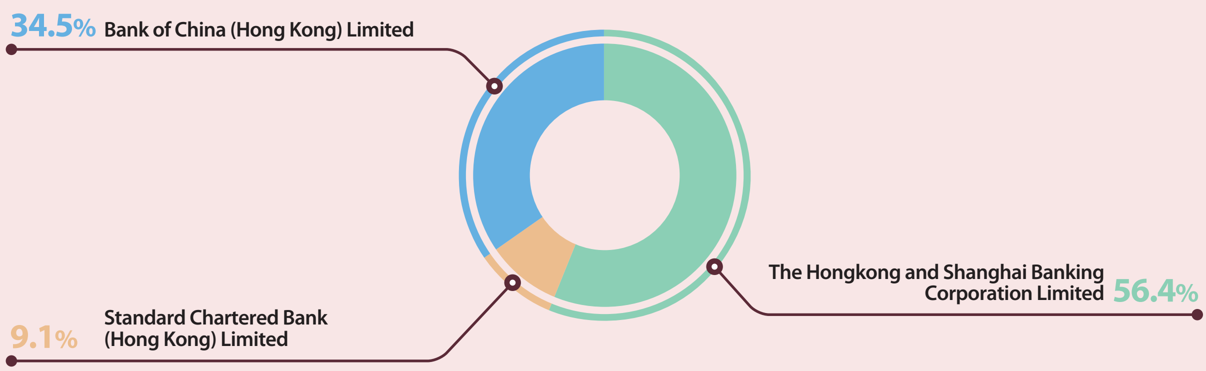
The Currency Board Sub-Committee (CBC) of the Exchange Fund Advisory Committee monitors and reviews issues relevant to monetary and financial stability in Hong Kong. In 2022, the CBC considered issues including property market conditions in the Mainland, the role of non-bank institutions in the residential mortgage market, the application of deep learning to assess credit risk, and a monitoring framework for assessing Hong Kong dollar liquidity. Records of the CBC's discussions on these issues and reports on Currency Board operations submitted to the CBC are published on the HKMA website.

Notes and coins

The below table summarises the value of the notes and coins in circulation at the end of 2022:

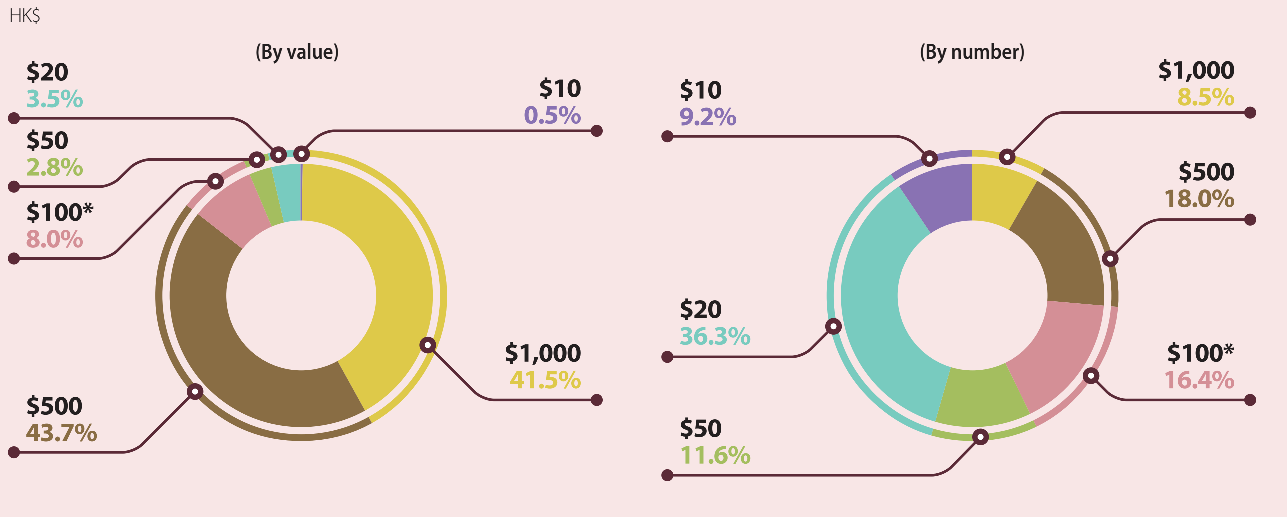
Total value of banknotes issued by note-issuing banks (Charts 5, 6 and 7)	**HK$605.6 billion** up 2.2% year on year
Total value of notes and coins issued by Government (Charts 8 and 9)	**HK$12.9 billion** up 0.1% year on year
Of which: – Total value of HK$10 notes	**HK$4.8 billion** (81% were polymer notes)

Chart 5 **Banknotes in circulation by note-issuing banks at the end of 2022**



Monetary Stability

Chart 6 Distribution of banknotes in circulation at the end of 2022



* Includes 0.1 percentage point contributed by HK$150 banknote.

Chart 7 Banknotes in circulation at the end of 2022

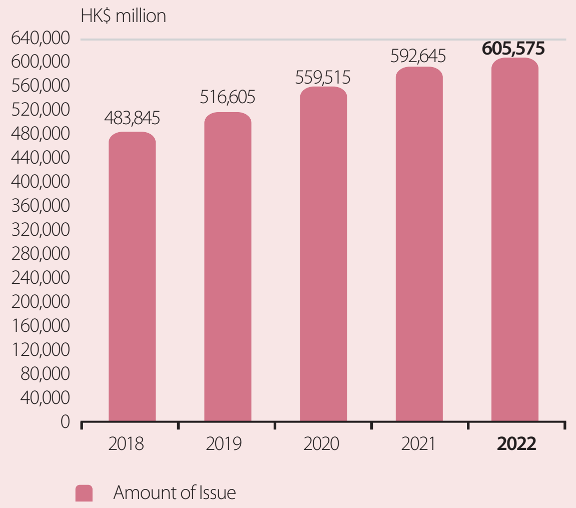


Chart 8 Government-issued currency notes and coins in circulation at the end of 2022

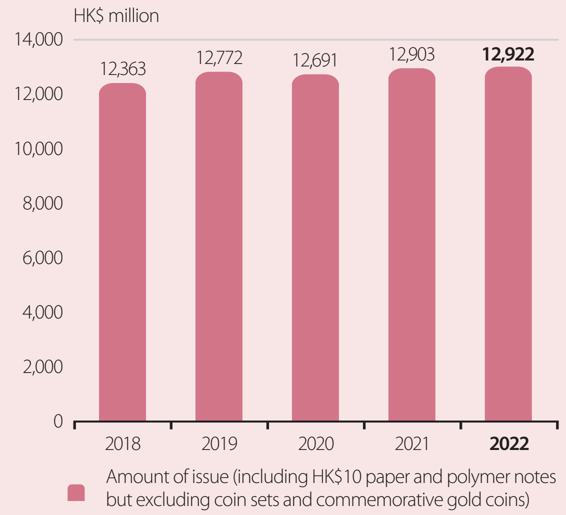
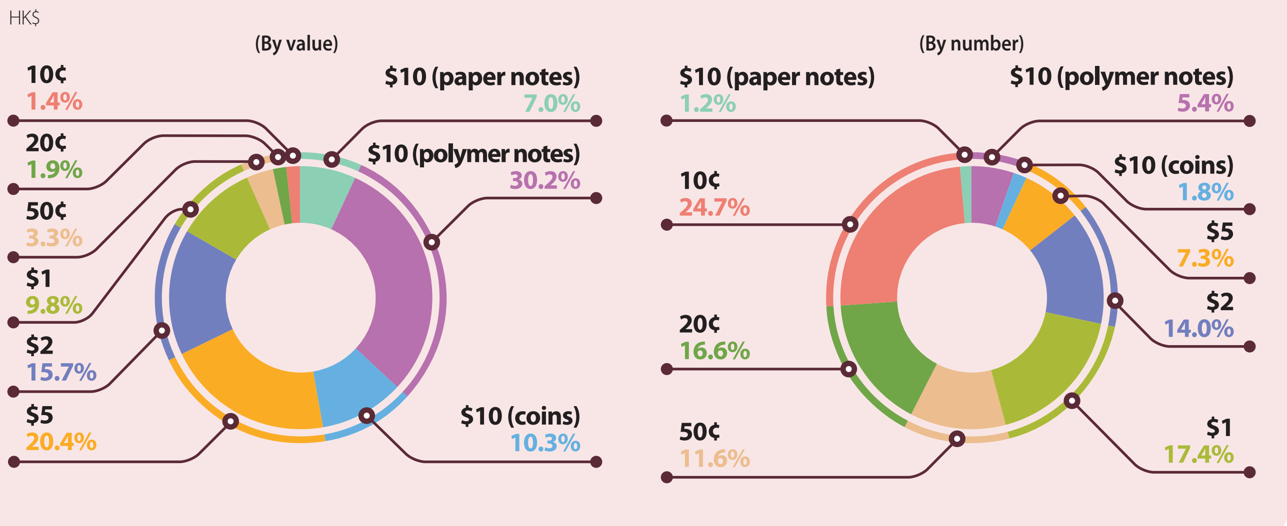


Chart 9 Breakdown of Government-issued currency notes and coins in circulation at the end of 2022



Hong Kong banknotes

The HKMA continued to provide seminars on the design and security features of Hong Kong banknotes for bank tellers, cashiers from retail establishments and students to help enhance their knowledge and skills in authenticating banknotes. During 2022, 15 seminars were arranged for over 4,200 participants.

Coin Collection Programme

The Coin Collection Programme continued to be well received by the public. More information about the Programme can be found in the *Sustainable HKMA* chapter of the *Sustainability Report 2022*.

Exchange Fund Bills and Notes

The EFBN Programme continued to operate smoothly. To meet the ongoing demand for Exchange Fund paper by banks and having regard to market conditions, the HKMA issued a total of HK$40 billion additional Exchange Fund Bills in the first two months of 2022, which resulted in a corresponding reduction of the Aggregate Balance. At the end of 2022, the nominal amount of outstanding Exchange Fund papers stood at around HK$1,207.5 billion (Table 2).

Table 2 Outstanding issues of EFBNs

HK$ million	2022	2021
Exchange Fund Bills (by original maturity)		
28 days	**0**	800
91 days	**769,798**	710,917
182 days	**364,800**	361,800
364 days	**51,700**	51,700
Subtotal	**1,186,298**	1,125,217
Exchange Fund Notes (by remaining tenor)		
1 year or less	**7,600**	7,000
More than 1 year and up to 3 years	**8,800**	10,400
More than 3 years and up to 5 years	**2,400**	2,400
More than 5 years and up to 10 years	**2,400**	3,600
Subtotal	**21,200**	23,400
Total	**1,207,498**	1,148,617

Monetary Stability

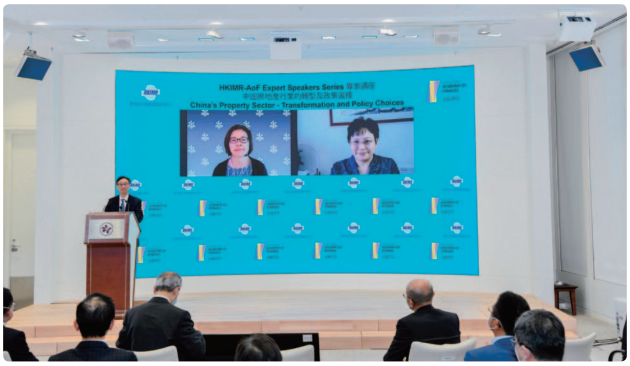
Monetary research

The Hong Kong Institute for Monetary and Financial Research (HKIMR)[3] completed three commissioned policy studies, released 24 working papers, and held 16 seminars/webinars on monetary and financial research topics that are of strategic importance to Hong Kong and the region. The HKIMR also made further efforts in disseminating the research findings to a wider audience through a new open-access electronic journal. Moreover, a new publication series called *Insights from Monetary Research Digest* was launched on the HKIMR's website to provide the public with a high-level non-technical summary of the Institute's recent research outputs.

Apart from its research output, the HKIMR organised two international conferences and three expert webinars to promote dialogue and exchange on economic and financial issues:

- A webinar featuring Mr Joseph Yam, former Chief Executive of the HKMA, and Professor Huang Yiping, Sinar Mas Chair Professor of Finance and Economics and Deputy Dean of the National School of Development of Peking University, on *Macroeconomic Developments, Fed Tightening and Offshore RMB Market Development*, was co-organised with the Hong Kong Academy of Finance (AoF) on 12 April. It attracted 840,000 real-time online views via various broadcasting platforms.

- A webinar, titled *China's Property Sector — Transformation and Policy Choices*, was held on 24 June, featuring Ms Qin Hong, Senior Research Fellow of Renmin University of China and former Director of the Policy Research Center of the Ministry of Housing and Urban-Rural Development, and moderated by Dr Wang Tao, Head of Asia Economic Research and Chief China Economist of UBS. It attracted close to 1.13 million real-time online views from Mainland China, Hong Kong and the rest of the world.



3 The HKIMR is a subsidiary of the Hong Kong Academy of Finance.

- A virtual workshop co-organised with the Asian Development Bank and the Bank for International Settlements on *Monetary Policy Spillovers* was held on 25 August. More than 200 participants from global central banks, international financial institutions and academia attended the workshop online.

- As a side event of the *Global Financial Leaders' Investment Summit*, a webinar, titled *Inflation in the Aftermath of COVID-19: Was It Inevitable or Avoidable?*, featuring Dr John Greenwood, Founder and Chief Economist of International Monetary Monitor Ltd and former Chief Economist of Invesco, was co-hosted with the AoF on 2 November. Almost 200 economists attended the webinar online.

- The 12th Annual International Conference on the Chinese Economy, titled *The Next Phase of China's Economic Development*, was held on 23 November, featuring a keynote speech on the short-term outlook and long-term prospect of the Chinese economy by Dr Wang Yiming, Vice Chairman of China Center for International Economic Exchanges and Chairman of its Academic Committee, and a panel discussion by four leading chief China economists on China's COVID policy, property market development, supply chain reshuffle and longer-term growth prospects. It attracted more than 1.18 million real-time online views.

Banking Stability

The banking sector in Hong Kong continued to be resilient in 2022, despite the uncertain and challenging macro-environment, and heightened volatilities in the financial markets. During the year, the HKMA stepped up the supervision of authorized institutions' credit and market risk management. The HKMA also worked closely with authorized institutions to enhance their operational and cyber resilience in light of escalating cyber threats and accelerating digital transformation in the banking sector.

On conduct supervision, the HKMA stepped up consumer protection in respect of "Buy Now, Pay Later" products, and introduced an additional payment arrangement for property refinancing. The HKMA also worked with fellow regulators on a regulatory framework for sustainable development of virtual assets, streamlined the investment product selling process and introduced a new regulatory regime on trust business. The Credit Reference Platform under the Multiple Credit Reference Agencies Model for consumer credit data was launched, and a new mandatory reference checking scheme was introduced to tackle the "rolling bad apples" phenomenon. Meanwhile, the HKMA helped facilitate the reactivation of bank accounts amid travel restrictions under the pandemic.

Following the updated Hong Kong money laundering and terrorist financing risk assessment, the HKMA worked with banks to strengthen Hong Kong's anti-money laundering and counter-financing of terrorism (AML/CFT) ecosystem through public-private partnerships, including the Fraud and Money Laundering Intelligence Taskforce, and enhance the response to scams. In addition, the HKMA worked with strategic partners to better understand and manage risks and vulnerabilities amid an increasingly complex geopolitical environment. Further efforts were made to promote the use of data and technology through the AML Regtech Lab series while accelerating the adoption of supervisory technology in the HKMA's AML work. Internationally, the HKMA participates actively in the work of the Financial Action Task Force.

In 2022, good progress was made on implementing international supervisory standards locally, including those on capital adequacy and disclosure. In addition, notable efforts were also made in the area of soft infrastructure, including working with the banking industry to build a sustainable pipeline of future talents and to upskill existing practitioners. Throughout the year, the HKMA worked closely with the banking industry in refining and streamlining supervisory policies and processes.

The HKMA also continued to advance its local and international work to ensure a credible resolution regime. In particular, a new resolution standard was developed, a regional crisis simulation exercise was conducted, and a new layer of loss-absorbing capacity resources was built up at all domestic systemically important banks, representing a milestone in enhancing resolvability.

Objectives

The HKMA has a general objective to promote the safety and stability of the banking system. Achieving this objective is contingent upon a highly resilient financial system that is capable of providing the critical financial services that the Hong Kong economy needs.

Banks can affect the stability of the system through the way they carry out their business and, in extreme cases, by failing in a disorderly manner. The Monetary Authority, as a supervisory authority, plays a key role in safeguarding financial stability by ensuring that banks are resilient to shocks and able to recover their positions in response to crises, ultimately helping to prevent failures. The Monetary Authority is responsible for the prudential supervision of banks and is tasked with the authorization of licensed banks, restricted licence banks and deposit-taking companies in Hong Kong, which are collectively known as authorized institutions (AIs).

The Hong Kong prudential regulatory framework is not designed to ensure a zero-risk financial system. Instead, the Monetary Authority, as a resolution authority, seeks to ensure that, in the event of an AI becoming non-viable, its failure can be managed in an orderly manner. To this end, a resolution regime for financial institutions in Hong Kong has been established, under which the Monetary Authority is the resolution authority for AIs, among other types of institutions. To operationalise the resolution regime in Hong Kong, it is important to lay down resolution rules and policy standards, undertake resolution planning to remove impediments to AIs' resolvability and develop the HKMA's operational capability to resolve a failing AI. In order to carry out these tasks effectively, the HKMA adopts an internationally harmonised and co-ordinated approach.

The Monetary Authority is also responsible for the designation and oversight of certain financial market infrastructures (FMIs). In overseeing FMIs, the HKMA aims to promote their general safety and efficiency, limit systemic risk and foster transparency. Making FMIs more resilient protects the monetary and financial systems in Hong Kong from possible destabilising effects arising from disruption to the FMIs.

Review of 2022

Licensing

At the end of 2022, Hong Kong had:

155
licensed banks

15
restricted licence banks

12
deposit-taking companies

37
approved money brokers

During the year, the HKMA granted money broker approval to six foreign trading platform operators. The authorizations of five licensed banks and one restricted licence bank were revoked during the year.

More information about the AIs and local representative offices in Hong Kong can be found in the Annex and Tables D to F on pages 283 to 286 and 292 to 295 respectively.

Banking Stability

Overview of supervisory activities

In 2022, 183 off-site reviews were conducted covering a broad range of issues, including CAMEL rating assessment[1], corporate governance, risk management and financial technology (fintech) adoption. As part of the HKMA's continued efforts to promote stronger risk governance, 36 meetings were held with the boards of directors, independent non-executive directors or board-level committees of AIs. Furthermore, 38 tripartite meetings were held among the HKMA, AIs and their external auditors.

Apart from off-site activities, the HKMA conducted regular on-site examinations on a wide range of AIs' activities. Credit risk management was a key focus from a prudential supervision perspective, while the management of operational risk and technology risk was another major focus amid the growing adoption of technology by banks. Meanwhile, a round of thematic examinations focused on climate risk management was also conducted amid the rapid development of green and sustainable banking in Hong Kong. On conduct supervision, on-site examinations in securities, investment products, insurance and Mandatory Provident Fund (MPF)-related businesses were carried out, supplemented with thematic reviews on areas assessed to be of higher risk.

Table 1 contains a summary of the HKMA's supervisory activities in 2022.

Table 1 Summary of supervisory activities

		2022	2021
1	**Off-site reviews and prudential interviews**	**183**	189
2	**Meetings with boards of directors, independent non-executive directors or board-level committees of AIs**	**36**	40
3	**Tripartite meetings**	**38**	38
4	**Culture dialogues**	**7**	7
5	**On-site examinations**	**112**	135
	Operational risk and technology risk management	32	45
	AML/CFT controls	13	20
	Liquidity risk management	8	11
	Implementation of Basel capital adequacy framework	3	9
	Capital planning	6	4
	Market risk, counterparty credit risk and treasury activities	19	19
	Securities, investment products, insurance and MPF-related businesses	17	12
	Consumer protection	2	3
	Deposit Protection Scheme-related representation	12	12
	Overseas examinations	0	0
6	**Thematic reviews**	**579**	733
	Credit risk management and controls	43	42
	Operational risk and technology risk management	69	85
	AML/CFT controls	82	71
	Model Risk Management	7	7
	Sale of investment, insurance and MPF products	115	266
	Consumer protection[a]	225	236
	Liquidity risk	21	16
	Market risk	8	10
	Green and sustainable banking	9	0
Total		**955**	1,142

a. Including self-assessments by AIs of compliance with the Code of Banking Practice.

1 Comprising the **C**apital adequacy, **A**sset quality, **M**anagement, **E**arnings and **L**iquidity components.

Credit risk

Credit growth and asset quality

Total loans decreased by 3.0% in 2022, compared with a growth of 3.8% in 2021. Table 2 shows the breakdown of growth in loans and advances. Mainland-related lending also decreased by 4.4% to HK$4,522 billion in 2022 (Table 3).

During the year, the banking sector was buffeted by challenges from various fronts, including the fifth wave of COVID-19 infections, rising geopolitical tensions, aggressive rate hikes by major central banks and worsening financial conditions of certain Mainland property developers. Despite these challenges, the banking sector remained stable and resilient.

The asset quality of the banking sector deteriorated during the year but remained at a healthy level. The classified loan ratio of the industry was 1.38% at the end of 2022, up from 0.89% at the end of 2021. The classified loan ratio for Mainland-related lending increased to 2.21% from 0.89% a year ago.

Over the year, the HKMA enhanced the breadth and depth of its risk surveillance, and maintained close communication with AIs to facilitate up-to-date assessment of the impact of economic and market developments as well as the adequacy of AIs' risk management measures. The overall credit risk facing the banking sector remained manageable. The results of the HKMA's solvency stress tests indicated that the banking sector continued to maintain sufficient capital buffers to withstand extreme stress.

Targeted and thematic examinations were conducted during the year to evaluate AIs' credit risk management focusing on asset quality, exposures to vulnerable sectors, oversight of credit risks at branches outside Hong Kong, and collateralised lending to private banking and wealth management customers.

Meanwhile, as more corporates ran into financial difficulty against the challenging macroeconomic backdrop, the HKMA encouraged AIs to follow the principles under the "Hong Kong Approach to Corporate Difficulties" in dealing with corporates encountering repayment problems, so that individual AIs acted collaboratively in the common interest of the lenders involved.

Table 2 Growth in loans and advances

% change	2022	2021
Total loans and advances	**-3.0**	3.8
Of which:		
– for use in Hong Kong	**0.9**	4.3
– trade finance	**-13.5**	14.2
– for use outside Hong Kong	**-10.2**	1.4

Table 3 Growth in Mainland-related lending

% change	2022	2021
Total Mainland-related lending	**-4.4**	3.7
Of which:		
– Mainland-related lending (excluding trade finance)	**-3.6**	2.6
– trade finance	**-14.8**	20.7

Alleviating cash flow pressure faced by customers

The HKMA and the Banking Sector Small and Medium-sized Enterprise (SME) Lending Coordination Mechanism extended the Pre-approved Principal Payment Holiday Scheme until the end of July 2023, given the difficult operating environment for corporates in the wake of the fifth wave of COVID-19 infections and continued uncertainties surrounding the external and domestic economy. To help customers prepare for an eventual resumption of normal repayment, a partial principal repayment option under the Scheme was introduced and subsequently enhanced.

By the end of 2022, banks had approved loan tenor extensions and other forms of relief in over 108,000 cases, involving an aggregate amount of over HK$1.1 trillion. For personal customers, banks had approved more than 81,000 cases of principal payment holidays for residential mortgages and other personal relief loans, amounting to over HK$65 billion.

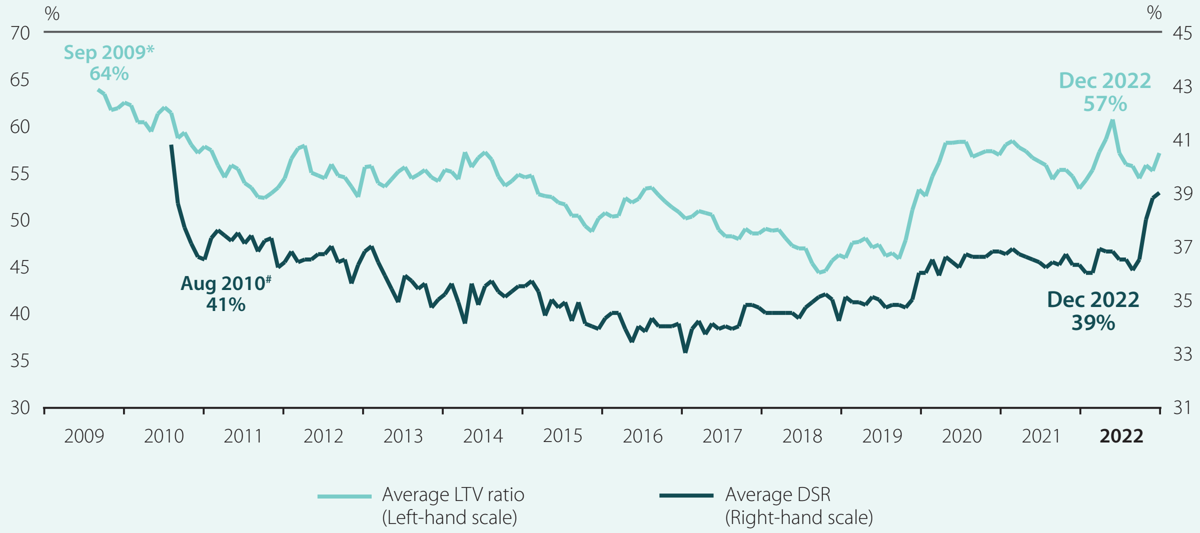
Banking Stability

Property mortgage lending

The successive rounds of countercyclical macroprudential measures introduced by the HKMA since 2009 have strengthened banks' risk management and the banking sector's resilience to a possible abrupt downturn in the local property market. The average loan-to-value (LTV) ratio of new residential mortgage loans (RMLs) approved in December 2022 was 57%, compared with 64% in September 2009 before the countercyclical measures were first introduced. The average debt servicing ratio (DSR) of new mortgages remained low at 39% in December 2022, compared with 41% in August 2010, when a cap on DSR was first applied (Chart 1).

In September, the HKMA lowered the stress testing requirement for property mortgage lending from a 300-basis point increase in interest rate to a 200-basis point increase. The decision was made taking into account factors including the prevailing interest rate environment, the trend of mortgage rates and their long-term historical average. This level was considered to be sufficiently prudent from the perspective of effective risk management of banks' property lending business.

Chart 1 Average LTV ratio and DSR of new RMLs approved



* Before the first round of the HKMA's countercyclical measures was introduced

\# When the tighter requirement on DSR was introduced by the HKMA

Operational and technology risk

A number of initiatives were taken to strengthen the operational resilience of the banking sector over the year. A new Supervisory Policy Manual (SPM) module on "*Operational Resilience*" was issued in May to set out the HKMA's supervisory expectations with respect to the governance and control framework that AIs should maintain to become operationally resilient. Two industry dialogues were organised to promote understanding of the new standards and to facilitate experience sharing within the industry (Figure 1).

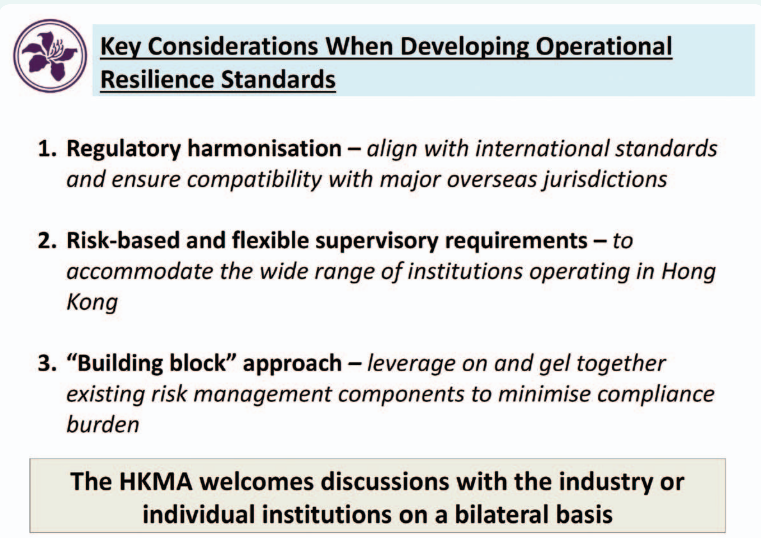
The HKMA also provided detailed supervisory guidance on specific areas of banking operations, including customer data protection, payment system operations, cloud computing, payment card security and anti-distributed denial of service (anti-DDoS) protection.

In light of the evolving cyber threat landscape, the HKMA sought to enhance the cyber resilience of the banking sector by promoting the adoption of a secure tertiary data backup arrangement, monitoring AIs' implementation of the Cyber Resilience Assessment Framework 2.0 and evaluating the effectiveness of banks' management of cyber risks arising from supply chain attacks.

In response to heightened risks of phishing scams and other online fraud, in September the HKMA and the Hong Kong Association of Banks (HKAB) jointly launched a new public awareness campaign with the slogan "Protect your Personal Digital Keys; Beware of Fraudulent Links!". In July, a workshop was also organised together with the Hong Kong Police Force to update banks on the latest modus operandi of fraudsters.

Poster for the public awareness campaign themed "Protect your Personal Digital Keys; Beware of Fraudulent Links!"

Figure 1 **Industry dialogue "Journey to Operational Resilience"**



Mr Raymond Chan (top right), Executive Director (Banking Supervision) of HKMA, discusses with the industry in one of the industry dialogues

Banking Stability

Liquidity and market risk

The HKMA stepped up its surveillance of banks' market and liquidity risk exposures amid the heightened market volatilities brought about by the aggressive tightening of monetary policies amongst the major economies. The HKMA conducted reviews to assess the adequacy of AIs' liquidity risk management, focusing on systems and controls for funding diversification and intragroup liquidity risk management. Examinations were also carried out to evaluate the effectiveness of AIs' market risk management frameworks and operational controls over treasury activities.

Anti-money laundering and counter-financing of terrorism

In 2022, the HKMA's priority was to respond swiftly to increases in online fraud, mule account networks and other financial crimes. Through active participation in the Fraud and Money Laundering Intelligence Taskforce (FMLIT)[2], the HKMA strengthened collaboration with the 23 member banks, enhancing their capacity to detect and prevent illicit activity. This helped increase the number of intelligence-led suspicious transaction reports by 319% compared with 2021, leading to the identification of 6,819 new suspicious accounts associated with crimes under investigation by law enforcement agencies, and more than HK$120 million of criminal proceeds restrained or confiscated. In parallel, the number of banks collaborating with the Anti-Deception Coordination Centre (ADCC)[3] increased from 15 to 23, resulting in the interception of HK$1.2 billion in suspected fraudulent payments. The HKMA also worked closely with the banking and stored value facility (SVF) sectors to support the launch of "Scameter", an anti-fraud search engine operated by the Hong Kong Police Force, which prevented an estimated HK$1.3 billion in fraud losses to the public since its launch in late September. To raise public awareness of fraud and mule accounts, the HKMA has encouraged banks to double down on publicity efforts, issued social media posts and posted five videos on the HKMA's "Don't Lend/Sell Your Account" web page to share good practices by bank staff to help customers avoid losses from fraud (Figure 2).

Figure 2 Raising public awareness of fraud and mule accounts

Educational messages on social media reminding the public "Don't be tempted by quick money. Don't sell your account" and outlining good practices by bank staff to help customers avoid losses from fraud

The HKMA engaged the banking industry on the amendments to the Anti-Money Laundering and Counter-Terrorist Financing Ordinance, which will come into effect in June 2023. Changes relevant to banks include introducing a licensing and regulatory regime for virtual asset service providers; adopting an amended definition of "politically exposed person" (PEP) to align with the Financial Action Task Force (FATF) requirement; facilitating a risk-based approach to determining the degree of customer due diligence (CDD) for PEPs; and supporting the use of technology by clarifying that a recognised digital identification system can be used for CDD and to satisfy the additional requirements where a customer is not physically present.

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[2] The FMLIT is a public-private partnership for information sharing among the HKMA, the Hong Kong Police Force and banks. Established in May 2017, the FMLIT expanded membership from 10 banks initially to 23 banks.

[3] The ADCC was established in July 2017 by the Hong Kong Police Force to combat deception and enhance public awareness of various kinds of scams.

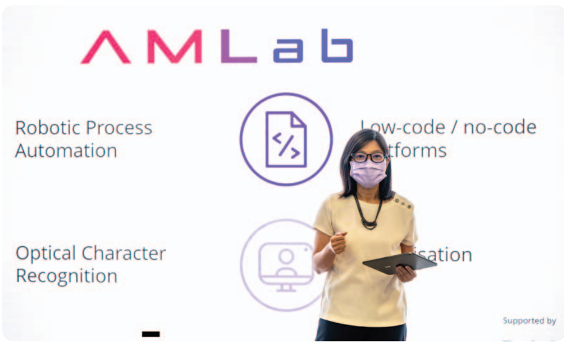
Under the "Fintech 2025" Strategy, the HKMA supported the adoption of AML/CFT regulatory technology (Regtech). Two further sessions in the AML Regtech Lab (AMLab) series[4] were held in July and November, in collaboration with Cyberport, focusing on low-barrier and easy-to-implement technologies and network analytics.

The adoption of network analytics is progressing well, with more than twice as many retail banks deploying the capability as there were three years ago, including banks that participated in the first AMLab and have partnered with technology companies housed at Cyberport (Figure 3).

Figure 3 Collaboration with Cyberport to deliver a digital response to fraud

To remain responsive to changes in money laundering and terrorist financing (ML/TF) risks globally and domestically, the HKMA continued to improve its data and technology capabilities. Deployment of an Intelligent Risk and Incident Scanning horizon-scanning tool, automation of regulatory reporting of financial crime risk information from banks and investment in data science (including analytics and visualisation tools) have enhanced the way the HKMA delivers its mandate, focusing supervisory resources on higher-value activities to provide greater insights into ML/TF risks.

During the year, the HKMA completed 13 risk-focused on-site examinations, including thematic work on transaction monitoring, proliferation financing and terrorist-financing screening systems. The HKMA also undertook 82 desk-based reviews and assessments, including thematic reviews on the network analytics capabilities of six FMLIT banks and the effectiveness of AIs' and SVF licensees' controls. To support a collaborative approach, the HKMA provided training and shared knowledge of its AML/CFT role and capabilities during 18 engagements with local and international partners, including financial crime seminars in Hong Kong and Singapore on data analytics, sharing sessions with overseas regulators on the HKMA's deployment of Suptech and contributions to financial investigation training courses for the Hong Kong Police Force and the Independent Commission Against Corruption.



Ms Carmen Chu (left photo), Executive Director (Enforcement and AML) of HKMA, provides opening remarks at the second AMLab. A new feature, Regtech Connect, is also launched, in which technology companies housed at Cyberport demonstrate and discuss relevant Regtech capabilities with participating banks

4 The AMLab was launched in 2021.

Banking Stability

In July, the Government published the second *Hong Kong Money Laundering and Terrorist Financing Risk Assessment Report* (Figure 4). The HKMA collaborated closely with the banking and SVF sectors to support this important exercise, contributing to improved understanding of extant and emerging risks and helping to support more effective risk-based decision-making in both sectors.

In December, the HKMA hosted an AML seminar for the banking and SVF sectors covering subjects including regulatory updates and source of wealth requirements, and providing feedback on suspicious transaction reporting and updates on counter-proliferation financing (Figure 5).

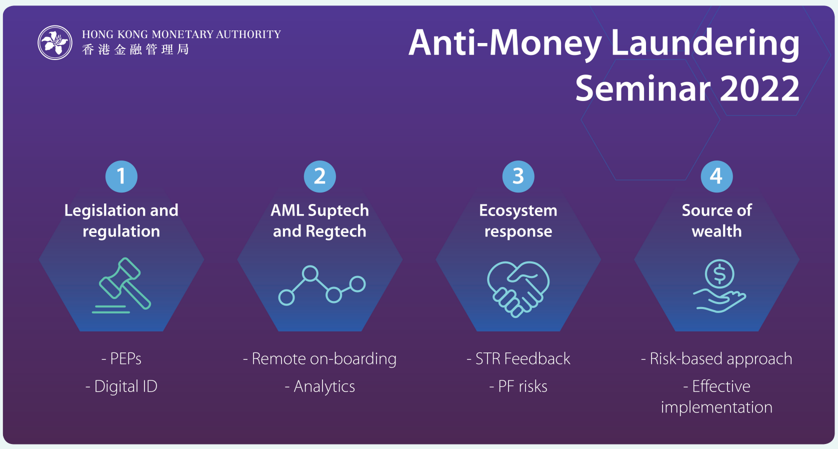
Wealth management and MPF-related businesses

The HKMA co-operates closely with other financial regulators in Hong Kong to provide guidance on and supervise AIs' practices in the sale of securities, investment products, insurance products and MPF schemes. The HKMA maintains regular dialogue with other regulators through bilateral and multilateral meetings, as well as under the auspices of the Council of Financial Regulators, to ensure co-ordinated and effective supervisory actions.

Figure 4 The HKMA works with the banking sector in response to the updated ML/TF risk assessment

The updated ML/TF risk assessment provides even greater insights into ML/TF risks and will better support effective application of the risk-based approach

Figure 5 The AML Seminar shares the HKMA's in-year review and 2023 outlook



The HKMA conducted 17 on-site examinations, 115 thematic reviews and 26 analyses of surveys and returns of AIs, covering the sale of investment, insurance and MPF products. These focused in particular on investment products related to corporates of high indebtedness, virtual assets (VAs), non-investment-linked long term insurance products and Cross-boundary Wealth Management Connect (Cross-boundary WMC) business. The HKMA and the Securities and Futures Commission (SFC) completed a concurrent thematic review on intermediaries' distribution of non-exchange traded investment products. In addition, the HKMA and the SFC announced the findings of the second annual joint survey on the sale of non-exchange traded investment products, which provided useful information on the industry landscape and market trends.

The VA landscape evolved massively during the year. The HKMA adopted the "same activity, same risks, same regulation" principle, and aimed to put in place timely and necessary guardrails, so that VA activities can develop in Hong Kong in a sustainable manner, while the associated risks can be mitigated and managed in line with international standards. For that, the HKMA actively participated in the work of international fora regarding the possible regulation of VA activities. In January 2022, the HKMA issued a joint circular with the SFC to provide updated guidance to intermediaries concerning a range of VA-related activities to accord protection to customers. The HKMA also stepped up supervision on AIs' VA-related intermediary activities, and enhanced investor education through social media and in collaboration with the Investor and Financial Education Council.

To bring growth opportunities to the banking and wealth management industries in Hong Kong, the HKMA maintained close dialogues with Mainland authorities and other stakeholders to explore enhancements to the Cross-boundary WMC scheme. The HKMA announced in January that five additional banks in Hong Kong were eligible to offer Cross-boundary WMC services, and handled a number of banks' applications for additional partnerships and/or expansion of the service scope during the year. The HKMA has been monitoring the participating banks to ensure smooth implementation of the scheme. Furthermore, to enhance regulation and supervision of the trust business in Hong Kong with a view to enhancing confidence in Hong Kong's private wealth management business, the HKMA issued in May the Code of Practice for Trust Business and a new SPM module for implementing the Code.

The HKMA continued engagement with the industry on the selling process of investment products. In light of market developments and industry feedback, in October the HKMA updated the requirements on the sale and distribution of loss-absorption products and issued guidance to facilitate registered institutions' (RIs) suitability assessments in respect of customers' investment horizon and concentration risk. The HKMA also conducted a special thematic review of some RIs' selling processes of investment products with a view to sharing observations to encourage banks to streamline the selling process and enhance customer experience.

Following the publication in 2021 of the key observations of a joint inspection of the HKMA and the Insurance Authority (IA) on premium financing, the HKMA, in close collaboration with the IA, issued in April 2022 guidance on supervisory standards and requirements applicable to AIs when they act as licensed insurance intermediaries or premium financing facility providers, so as to enhance the protection to customers involved in premium financing. In July, the HKMA issued a circular to provide guidance to AIs on the selling of protection linked plans, a new subset of investment-linked assurance scheme products introduced in late 2021. Moreover, the IA, the Mandatory Provident Fund Schemes Authority and the HKMA completed their first-ever joint mystery shopping programme and issued a joint circular in December to outline the key findings and good practices of intermediaries in the sale of Qualifying Deferred Annuity Policies and MPF Tax-deductible Voluntary Contributions. The HKMA also continued to work closely with the IA to extend the temporary facilitative measures under the pandemic and provide further facilitative measures for non-face-to-face distribution of insurance products.

During 2022, the HKMA processed two applications from virtual banks for registration as an RI and one application for addition of a regulated activity under the Securities and Futures Ordinance (SFO), as well as four applications (two of which from virtual banks) to become licensed insurance intermediaries and for varying their lines of businesses under the Insurance Ordinance. The HKMA also granted consent to 211 executive officers responsible for supervising the securities activities of RIs and conducted background checks on 7,238 individuals whose information was submitted by RIs for inclusion in the Register of Securities Staff of AIs maintained by the HKMA.

Banking Stability

Other supervisory activities

The Banking Supervision Review Committee[5] considered seven cases in 2022. Five concerned the approval of money brokers. The remaining two were related to the three-tier banking system and virtual banks (Table 4).

During the year, the HKMA commissioned eight reports under section 59(2) of the Banking Ordinance (BO), requiring AIs to appoint external professional firms to report on the effectiveness of their controls in specified areas of operation. These reports covered risk management, the institutions' overall risk governance frameworks, and other areas such as compliance with the BO, AML/CFT controls and system stability.

In 2022, there were no incidents reported by AIs involving breaches of the requirements in the BO relating to capital adequacy or liquidity ratio. There were 57 breaches of other provisions of the BO, mostly related to AIs' reporting obligations. These breaches did not affect the interests of depositors and were promptly rectified by the AIs.

The CAMEL Approval Committee[6] completed a review of the CAMEL ratings of all the 182 AIs. No AIs appealed against the Committee's decisions.

Table 4 Summary of other supervisory activities

		2022	2021
1	Cases considered by the Banking Supervision Review Committee	**7**	6
2	Reports commissioned under section 59(2) of the BO	**8**	10
3	Approval of applications to become controllers, directors, chief executives or alternate chief executives of AIs	**175**	195

Promoting Regtech adoption

In 2022, the HKMA continued to promote Regtech adoption by the banking sector. The resources available in the HKMA's Regtech Knowledge Hub were enriched to encourage greater sharing of Regtech adoption experience and expertise within the Regtech ecosystem in Hong Kong. A set *of Regtech Adoption Practice Guides* and a series of Regtech use case videos were published via the Hub to provide practical guidance on the implementation of Regtech solutions. Thanks in part to these efforts, Regtech adoption in the banking sector gathered further momentum during the year, with use cases spanning a wide range of banking operations, from credit, liquidity, operational to compliance risk management.

Adoption of supervisory technology

The HKMA is building an end-to-end digital supervisory platform to enhance the efficiency and effectiveness of its supervisory processes. During the year, the HKMA identified suitable solutions for the various supervisory technology (Suptech) initiatives that made up the platform, and commenced system design and development work. In addition, the HKMA completed additional proof-of-concept (PoC) exercises on advanced analytics projects to enhance the forward-looking capabilities of the HKMA's supervisory processes. These PoC exercises explored the use of network analytics solutions to visualise the interconnections and risks between counterparties and natural language processing techniques to monitor market sentiment.

5 A senior management committee set up within the HKMA to consider, advise and make recommendations to the Monetary Authority on major authorization matters under the Banking Ordinance, with a view to ensuring that decisions on authorization matters are taken in a fair and reasonable manner.

6 The CAMEL Approval Committee was established to review the CAMEL assessments conducted on individual AIs. The Committee is chaired by an Executive Director, and includes at least two senior staff members within the banking departments of the HKMA who have not been involved in conducting the CAMEL assessments in question.

International co-operation

Co-operation with overseas authorities

During the year, the HKMA participated in 32 college-of-supervisors meetings organised by the home supervisors of 23 banking groups with significant operations in Hong Kong. A broad range of issues were discussed, covering areas such as financial soundness, risk management controls and operational resilience.

The HKMA participated in the cross-border resolution planning of 14 global systemically important banks (G-SIBs) through Crisis Management Groups (CMGs) and Resolution Colleges to enhance the resolvability of these banks and the crisis preparedness of the relevant home and host authorities. The HKMA also led the regional resolution planning work and organised the Asia CMG discussions for a G-SIB where progress of enhancing resolvability was reviewed and forward priorities were set.

Bilateral meetings were held during the year with overseas banking supervisors and resolution authorities. There were also regular exchanges with overseas authorities on institution-specific issues and developments in financial markets.

Participation in international and regional forums

The HKMA participates as a member in a range of international forums for banking supervisors:

- The Group of Central Bank Governors and Heads of Supervision;
- The Basel Committee on Banking Supervision (Basel Committee);
- The Basel Committee's Risks and Vulnerabilities Assessment Group;
- The Basel Committee's Supervisory Cooperation Group; and
- The Basel Committee's Policy and Standards Group.

Under the structure of the Basel Committee, the HKMA serves as a co-chair of the Policy and Standards Group and the chair of the Pillar 2[7] Expert Group. It is also represented in the Task Force on Climate-related Financial Risks, the Basel Core Principles Task Force, and the following Expert Groups:

- Accounting and Audit;
- Anti-money Laundering and Counter-financing of Terrorism;
- Capital and Leverage Ratio;
- Credit Risk and Large Exposures;
- Disclosure;
- Financial Technology;
- Liquidity;
- Margin Requirements;
- Market Risk;
- Operational Resilience;
- Pillar 2; and
- Stress Testing.

The HKMA is a member of the Central Banks and Supervisors Network for Greening the Financial System and, jointly with the SFC, represents Hong Kong in the International Platform on Sustainable Finance. During the year, the HKMA also led the Financial Stability Board (FSB) London Interbank Offered Rate (LIBOR) Drafting Team, which focused on supervisory issues associated with LIBOR transition.

At the regional level, the HKMA is a member of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)[8] ; the South East Asia, New Zealand and Australia (SEANZA) Forum of Banking Supervisors; and the South East Asian Central Banks (SEACEN) Research and Training Centre.

As part of its work in the EMEAP Working Group on Banking Supervision, the HKMA is the champion of the Interest Group on Liquidity. During the year, the Interest Group on Liquidity exchanged views and shared experiences regarding the implementation of Basel III liquidity standards in the EMEAP jurisdictions. The HKMA is also the champion of the Interest Group on Sustainable Finance, which aims to promote information sharing on the management of climate-related risks faced by banks in the region.

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7 Pillar 2 is a framework for determining any additional capital that a bank should hold principally to cover risks either not captured, or not adequately captured, under the minimum capital requirement (i.e. Pillar 1) of the Basel capital standard.

8 The EMEAP is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region.

The HKMA participates actively in the work of the G20/OECD[9] Task Force on Financial Consumer Protection, which supports the implementation of the G20/OECD High-level Principles on Financial Consumer Protection and develops the Effective Approaches for the application of these principles, taking into account operations in an increasingly digital environment. This includes providing inputs to the comprehensive review and updating of these principles undertaken by the Task Force. The updated High-level Principles were endorsed by the G20 Leaders in November.

The HKMA joined the International Financial Consumer Protection Organisation (FinCoNet) as a member institution in July, with a view to deepening engagement with fellow regulators, as well as sharing Hong Kong's experience in the area of financial consumer protection. The HKMA is also a member of the Supervisors Roundtable on Governance Effectiveness[10] which aims to advance innovation in influencing culture reform in the financial sector.

Ms Maria Lúcia Leitão (left), Chair of FinCoNet 2019-2022, welcomes Mr Alan Au (right), Executive Director (Banking Conduct) of HKMA, to the Annual General Meeting 2022 in Lisbon, Portugal. This is the first meeting that the HKMA participates in as a member institution

The HKMA began a second two-year term as co-chair of the FATF Evaluations and Compliance Working Group, leading preparatory work for the fifth round of mutual evaluations that will commence in 2024, participating in a leadership retreat to set FATF priorities for 2022 to 2024, providing a reviewer for the FATF mutual evaluation of Indonesia, as well as participating in the working group on Cross-border Payments Data and Identifiers established under the FSB.

Mr Stewart McGlynn (middle), Head (AML and Financial Crime Risk) of HKMA, chairs a FATF Evaluations and Compliance Working Group meeting in Paris, France

In the area of implementing resolution reforms, the HKMA is a member of the FSB Resolution Steering Group (ReSG), its Expanded Group on alternative financial resources for the resolution of central counterparties (CCP Expanded Group), as well as the Cross-Border Crisis Management Group for banks (bankCBCM). During the year, the HKMA was re-appointed as chair, for another two-year term, of the EMEAP's Study Group on Resolution (SGR). See *International and cross-border co-operation* on page 97 for more details.

Basel Committee Regulatory Consistency Assessment Programme

Through its Regulatory Consistency Assessment Programme, the Basel Committee monitors, assesses and evaluates its members' implementation of the Basel standards. The HKMA participated in the assessment of Japan's large exposures standards; the related report was published in September.

9 Organisation for Economic Co-operation and Development.

10 Chaired by the Federal Reserve Bank of New York.

Implementation of Basel Standards in Hong Kong

Capital standards

The Banking (Capital) (Amendment) Rules 2022 came into operation on 1 July to implement the *Capital requirements for banks' equity investments in funds*.

During the year, the HKMA consulted the industry on proposed amendments to the Banking (Capital) Rules (BCR) for implementing the Basel III final reform package. Industry consultation was also conducted on two new SPM modules, MR-1 on "*Market Risk Capital Charge*" and MR-2 on "*CVA Risk Capital Charge*", as well as on the updated templates of banking returns associated with some of the revised capital standards in the package.

In light of competing priorities and resource constraints amid challenges associated with the COVID-19 pandemic, as well as the need to harmonise with the implementation schedules of major jurisdictions, the local implementation of the revised capital standards in the Basel III final reform package has been adjusted as follows:

(i) For those on credit risk, operational risk, the output floor and the leverage ratio, to a date no earlier than 1 January 2024; and

(ii) For those on market risk and credit valuation adjustment (CVA) risk, to a date no earlier than 1 January 2024 (which may not be the same as the date referred to in (i) above), even though AIs will be required to implement them for reporting purposes by 1 January 2024.

The HKMA is preparing necessary amendments to the BCR to implement the revised capital standards, supported by supplementary guidance as appropriate.

In March, the HKMA consulted the industry on a proposed amendment related to the condition for raising the jurisdictional Countercyclical Capital Buffer (CCyB) for Hong Kong above zero under the BCR. In November, the HKMA consulted the industry on the draft revised SPM module CA-B-1 "*Countercyclical Capital Buffer – Approach to its Implementation*", including the introduction of a Positive Neutral CCyB for Hong Kong, and provided more details about the proposed amendment to the BCR in relation to this.

In line with the Basel Committee's framework for dealing with domestic systemically important banks (D-SIBs), the HKMA announced in December an updated list of D-SIBs for 2023 and their corresponding higher loss-absorbency capital requirements.

Given that Part 10 (Calculation of Sovereign Concentration Risk) of the BCR largely leverages on the measurement methodologies specified in Part 7 of the Banking (Exposure Limits) Rules (BELR), the proposed amendments to the BELR mentioned below in turn engender consequential amendments to the former. The HKMA has developed proposed amendments to the relevant provisions in the BCR where parallel updates are required.

Exposure limits

The HKMA has continued its work on the proposed amendments to the BELR, mostly as a consequence of the proposed amendments to the credit risk and market risk capital frameworks under the BCR.

Disclosure standards

The HKMA consulted the industry on the proposed amendments to the Banking (Disclosure) Rules for implementing the new and revised disclosure requirements published by the Basel Committee, namely *Pillar 3*[11] *Disclosure Requirements – Updated Framework* (December 2018), *Revisions to Leverage Ratio Disclosure Requirements* (June 2019) and *Revisions to Market Risk Disclosure Requirements* (November 2021). These new and revised disclosure requirements mainly reflect the revised capital standards under the Basel III final reform package, and set out some optional disclosure requirements for specific exposures to be implemented where considered necessary by the supervisor of a jurisdiction.

Liquidity standards

The HKMA is preparing amendments to the Banking (Liquidity) Rules, as a consequence of the proposed amendments to the BCR.

11 Pillar 3 refers to a set of disclosure requirements prescribed by the Basel Committee to promote consistency and comparability of regulatory disclosures through more standardised formats among banks and across jurisdictions.

Banking Stability

Regulatory regime for over-the-counter derivatives market

The HKMA oversees compliance of AIs and approved money brokers (AMBs) with the mandatory reporting, clearing and related record-keeping requirements on over-the-counter (OTC) derivatives transactions under the SFO. Close dialogue is maintained with AIs, AMBs and other industry participants on various reporting issues arising from OTC derivatives market developments and evolving international standards to ensure compliance with the relevant requirements by AIs and AMBs.

Enhancing the supervisory policy framework

Regulation of over-the-counter derivatives transactions

Since 1 March 2017, the HKMA has implemented the global margin and risk mitigation standards for AIs involved in non-centrally cleared OTC derivatives transactions. The final implementation phase of the initial margin requirements commenced on 1 September 2022. The HKMA has engaged the industry to assess the implications of market developments on the exchange of margin and has continued to co-ordinate with other member jurisdictions of the Basel Committee and International Organization of Securities Commissions (IOSCO) Working Group on Margin Requirements on implementation-related matters.

Other supervisory policies and risk management guidelines

In 2022, the HKMA progressed with its work on various policies and guidelines, including the following:

- **Jul** issued the revised SPM module OR-1 on "*Operational Risk Management*", primarily to implement the *Revisions to the Principles for the Sound Management of Operational Risk* issued by the Basel Committee in March 2021.
- **Dec** issued and gazetted the revised SPM module CG-3 on "*Code of Conduct*" to strengthen the conflicts of interest policy requirements.

Balanced and responsive supervision

In view of the growing importance of private banks in the Hong Kong banking sector, the HKMA extended the balanced and responsive supervision (BRS) initiative to cover private banks, and hosted the first roundtable meeting with them to understand and discuss their key pain points in business development. In this connection, the HKMA updated the requirements on the sale and distribution of loss-absorption products and provided further guidance on suitability assessment, and clarified its supervisory expectations on CDD requirements. Separately, recognising the potential challenges faced by the banking industry in promoting green and sustainable banking and capacity building, the HKMA held a new round of discussions with major retail banks to clarify its supervisory expectations and provide further guidance to assist banks in addressing challenges around data and tools for climate risk management and disclosure, as well as to discuss initiatives to facilitate talent development in the banking sector. The BRS initiative has provided a useful platform for the HKMA and the industry to exchange views and have constructive dialogues on how to support the further development of the banking industry.

Accounting standards

Regular dialogues were held between the HKMA and the Banking Regulatory Advisory Panel of the Hong Kong Institute of Certified Public Accountants on topics of common interest. These included updates on accounting, auditing and financial reporting standards and their implications for banks, as well as major international and domestic banking regulatory developments. The HKMA has continued to work with other authorities on issues related to banks' provisioning practices.

Green and sustainable banking

The HKMA is working to incorporate climate-related considerations into the supervisory framework, taking into account the Basel Committee's principles for the effective management and supervision of climate-related financial risks, and its responses to frequently asked questions on such risks. To support the industry in identifying, measuring and monitoring their exposures to climate risks, the HKMA is exploring measures and developing technological solutions. The HKMA has been working with other local financial regulators to develop a green classification framework, with a view to increasing transparency across the financial markets and enabling consistent policy-making on green finance. More details about the HKMA's policy work on green and sustainable banking are given in the *Building a Sustainable Financial System* chapter of the *Sustainability Report 2022*.

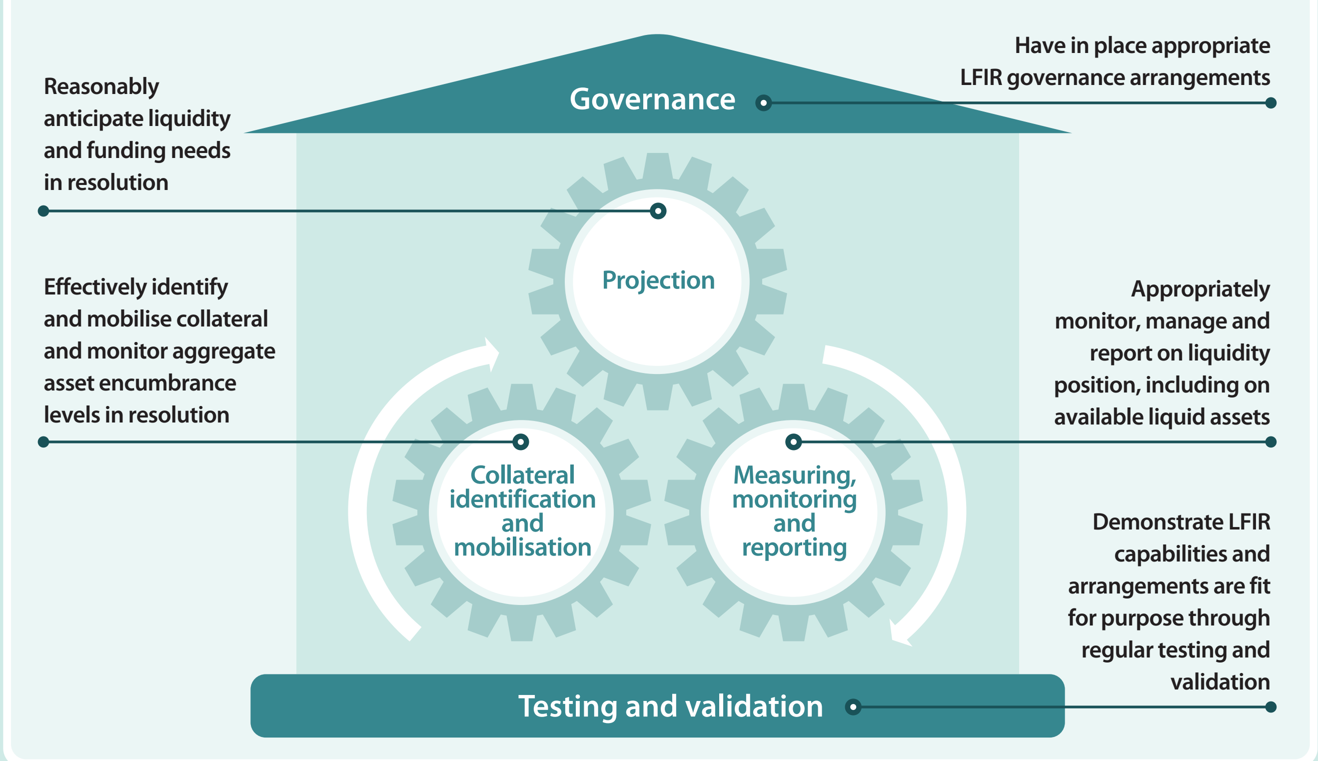
Resolution

In 2022, the HKMA advanced its work to operationalise the Hong Kong resolution regime for banks. Progress has been made in establishing resolution standards, undertaking resolution planning and developing resolution execution capability. In addition, the HKMA actively participated in cross-border co-operation on resolution through institution-specific engagements such as the CMGs for G-SIBs, as well as through international and regional fora, including the FSB ReSG and the EMEAP SGR.

Resolution standards

The HKMA continued to formulate policy standards, with which AIs need to comply in order to enhance their resilience and resolvability. In July, the HKMA issued the Financial Institutions (Resolution) Ordinance (FIRO) Code of Practice chapter LFIR-1 *Resolution Planning – Liquidity and Funding in Resolution*, which sets out the Monetary Authority's expectations, in line with relevant FSB guidance[12], in relation to the capabilities and arrangements that an AI should have in place, in business as usual period, in order to support an AI's ability to meet liquidity and funding needs in resolution. The key expectations are summarised in Figure 6. Work to be done by the AIs towards satisfying the expectations outlined in the chapter will be an integral part of the HKMA's bilateral resolution planning programmes with the AIs.

Figure 6 Key expectations on an AI's liquidity and funding in resolution (LFIR) capabilities and arrangements



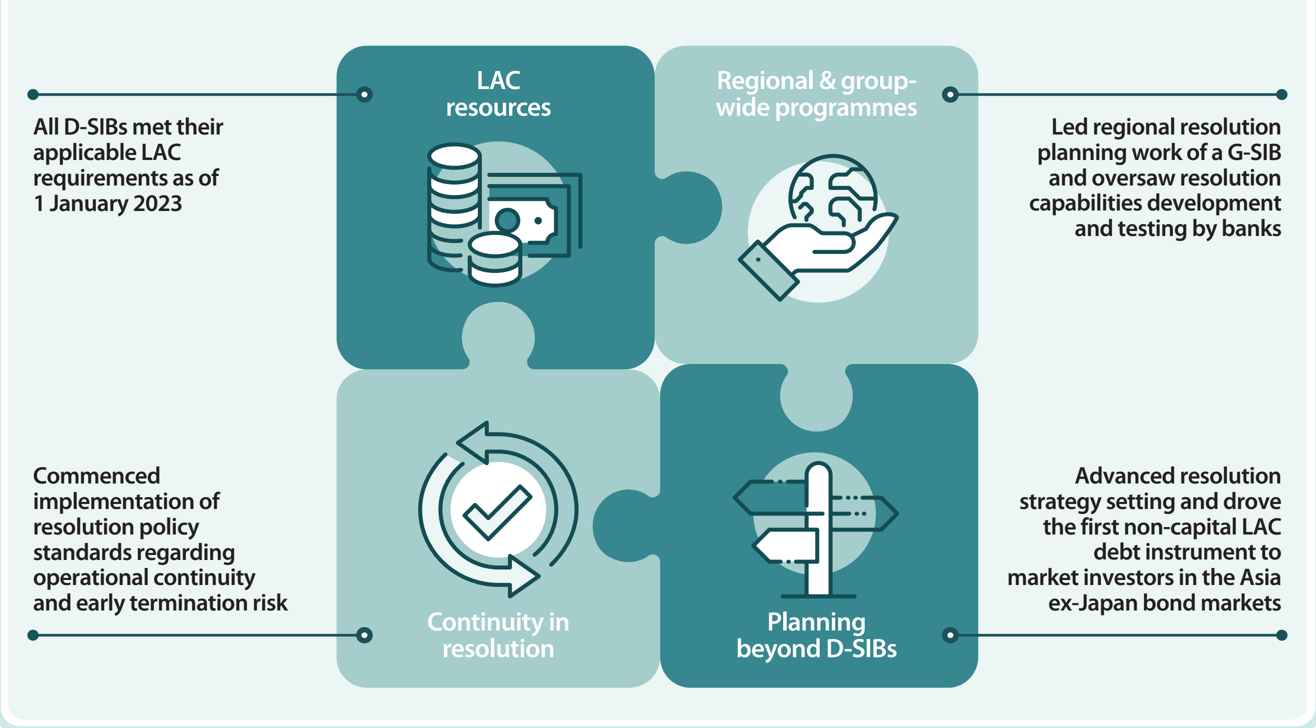
[12] The FSB has identified liquidity and funding as important topics to be addressed in resolution planning and has published guidance on the *Funding Strategy Elements of an Implementable Resolution Plan*, complementing the *Guiding Principles on the temporary funding needed to support the orderly resolution of a Global Systemically Important Bank*.

Banking Stability

Resolution planning

The HKMA continued to advance resolution planning for each of the D-SIBs and other locally incorporated AIs with total consolidated assets above HK$300 billion in co-ordination with the home and host authorities to enhance the resilience and resolvability of these banks (Figure 7).

Figure 7 Highlights of 2022 progress made in resolution planning programmes



Through resolution planning programmes, the HKMA works with AIs to implement the changes needed to address identified impediments to their orderly resolution. In particular, the D-SIBs have built up a new layer of loss-absorbing capacity (LAC) resources by further issuing capital and non-capital LAC debt instruments in the year to facilitate loss absorption and recapitalisation in case of failure. As of 1 January 2023, all D-SIBs met their applicable LAC requirements, representing a milestone in enhancing the resolvability of these banks and resilience of the banking system. The LAC resources[13] of D-SIBs stood at 25.4% of risk-weighted amount at the end of 2022. Relevant periodic public disclosures of LAC positions and instruments are being made by banks, which facilitate and promote transparency and market discipline.

In addition, the HKMA has commenced the implementation of policy standards on operational continuity in resolution. Self-assessments of existing capabilities by banks against the expectations set out by the HKMA were conducted and work plans to address any gaps identified were developed. Banks' preparatory work for meeting the HKMA requirements as per the Financial Institutions (Resolution) (Contractual Recognition of Suspension of Termination Rights – Banking Sector) Rules and for identifying and mitigating early termination risks in resolution, including the review of financial contracts and outreach to relevant counterparties, has also commenced.

[13] Including capital and non-capital LAC resources.

Beyond D-SIBs, the HKMA continued to advance the resolution planning for other locally incorporated AIs with total consolidated assets above HK$300 billion by advancing the determination of preferred resolution strategies for these AIs and imposing LAC requirements to facilitate removal of impediments to resolvability. In 2022, one of these AIs issued its inaugural non-capital LAC debt instrument to market investors, the first such offering in the Asia ex-Japan bond markets.

In terms of home-host co-ordination, the HKMA led the regional resolution planning work for the Asia resolution group of a G-SIB and organised the Asia CMG discussions where progress of enhancing resolvability was reviewed and forward priorities were set. In addition, banks continued to build up and test resolution capabilities as part of their group-wide programmes. This has involved a wide spectrum of actions, such as development of processes for valuations in resolution, demonstration of capabilities for estimating and reporting liquidity needs in resolution, as well as cross-border drills of contingency arrangements for access to payment clearing. The HKMA also engaged in discussions among authorities on the management and deployment of unallocated total loss-absorbing capacity (uTLAC) resources within resolution groups, and the enhancement of home-host co-ordination arrangements, including authorities' playbooks on resolution execution.

Resolution execution capability

The HKMA continued to strengthen its capability to execute resolution. The governance arrangements for decision-making in relation to initiation of resolution were updated in line with the institutional arrangements and insights gained from simulation exercises conducted. The work to develop capabilities for executing the transfer stabilization options in resolving an AI under the FIRO by drawing upon the Resolution Advisory Framework was advanced. The HKMA also progressed the development of a crisis management framework to support co-ordination between resolution authorities in Hong Kong.

International and cross-border co-operation

The HKMA is actively involved in the implementation of resolution reforms through its membership in the FSB. In the FSB's 2022 Resolution Report, *Completing the agenda and sustaining progress*, the FSB states that as the 15-year anniversary of the global financial crisis is on the horizon in 2023, it is critical to maintain momentum and avoid complacency. The report recognises that while significant progress has been made in resolvability in the banking sector, multiple challenges lie ahead and require continued commitment of authorities and banks to sustain progress. For example, the approaches to uTLAC and funding in resolution remain areas of focus, and testing of resolvability capabilities is a forward priority. Beyond G-SIBs, work has been conducted on issues relating to resolution planning for non-G-SIBs that could be systemic in failure.

At the regional level, the HKMA was re-appointed to continue to chair and serve as the secretariat of the EMEAP SGR for another two-year term. The SGR met virtually during 2022 and undertook a range of activities, including thematic studies, table top exercises as well as a resolution workshop in order to support knowledge sharing in relation to resolution. In addition, the HKMA took part in the design and execution of a three-day regional crisis simulation exercise organised by the Financial Stability Institute (FSI) of the Bank for International Settlements (BIS) involving 10 authorities including central banks, supervisory and resolution authorities as well as deposit insurers in Asia Pacific, with a view to enhancing cross-border co-operation. The HKMA also continued to engage with relevant stakeholders and contribute to resolution-related events, for example those organised by the FSB, the BIS's FSI as well as the SEACEN Research and Training Centre.

Cross-border co-operation is an important component of resolution planning for G-SIBs given the international nature of their businesses and operations. During the year, the HKMA participated in the cross-border resolution planning of 14 G-SIBs through CMGs and Resolution Colleges. As part of this work, the HKMA shared updates on resolution policy development, contributed to the FSB's eighth resolvability assessment process for these G-SIBs and worked with the relevant authorities to enhance cross-border crisis preparedness.

Banking Stability

International resolution policy work

Effective resolution requires internationally harmonised resolution policies setting and implementation, given the cross-border nature of many large financial institutions. This is pertinent to Hong Kong as a material host of the operations of all G-SIBs.

To reflect Hong Kong's unique role as a key host jurisdiction of G-SIBs and internationally active banking groups as well as a regional home for the resolution entities of some of these banking groups, the HKMA takes an active part in formulating and implementing international resolution policy standards, contributing through its membership in the FSB ReSG, its CCP Expanded Group, as well as the bankCBCM.

In particular, the HKMA contributed to a wide range of work in 2022 as a member of the following workstreams of the bankCBCM[14]:

- The TLAC Technical Expert Group, which clarified the technical guidelines on uTLAC resources measurement and developed considerations for CMGs regarding the approaches to management and deployment of uTLAC resources;
- The Bail-in Execution workstream, which organised a workshop for authorities and stakeholders to discuss technical cross-border issues of a bail-in execution, and which explored issues regarding cross-border recognition of resolution actions;
- The Funding in Resolution workstream, which organised deep-dive sessions for authorities to share practices and views pertaining to cross-border funding in resolution, including in regard to the firms' ability to mobilise collateral across borders;
- The cross-border co-operation and co-ordination workstream, which organised a workshop for authorities (including the HKMA) to share practices for testing firms' capabilities and experiences on developing cross-border co-ordination arrangements;
- The Continuity of Access (CoA) to FMIs workstream, which supported the FSB's work to promote cross-border co-operation in relation to CoA to FMI services for firms in resolution; and
- The Digital Innovation and Resolution workstream, which was newly set up in 2022 with a view to assessing the extent to which digital innovation could affect banks' resolvability, resolution planning and resolution execution.

[14] For more details on the FSB's latest progress in these workstreams, see Sections 3.2, 3.4, 3.6 and 3.8 of *2022 Resolution Report: Completing the agenda and sustaining progress* published by the FSB in December 2022.

Bank consumer protection

Code of Banking Practice

The Code of Banking Practice Committee, with the active participation of the HKMA, commenced the second phase of a comprehensive review of the Code. Industry consultation was launched in December on the proposed enhancements, which include measures to further strengthen the protection to banking consumers in the digital environment, support customers' assessment of their own repayment ability to promote responsible borrowing, enhance customers' ability in managing their credit and strengthen fair treatment of customers throughout the banking life cycle.

Overall compliance with the Code of Banking Practice remained satisfactory. According to self-assessment results, almost all AIs and their subsidiaries and affiliated companies reported full or nearly full compliance during the assessment period in 2021[15], while a few have taken prompt remedial action to rectify areas of non-compliance.

Additional payment arrangement for property transactions

As a result of the continuous effort between the HKMA, the banking industry and other stakeholders, HKAB announced in November the rollout of an additional payment arrangement for property transactions (PAPT) in respect of mortgage refinancing transactions. Under PAPT, bank customers may choose to adopt direct transfer via the interbank payment system for a residential mortgage refinancing transaction. PAPT can better facilitate the development of digital finance while strengthening protection of mortgage customers (Figure 8).

Figure 8 Raising public awareness of PAPT

Social media post to educate the public on PAPT

"Buy Now, Pay Later" products

In view of the rapid development of the "Buy Now, Pay Later" (BNPL) concept, one of the new breed of innovative personal credit products, and associated concerns over impulsive borrowing and even over-borrowing by customers, the HKMA issued a set of regulatory guidance in September to enhance consumer protection in respect of BNPL products launched by banks, following consultation with the banking industry. The HKMA also issued social media posts (Figure 9) and produced educational radio broadcasts to raise consumer awareness on the risks associated with such products.

Figure 9 Raising public awareness of BNPL products

Educational message on social media to highlight the risks associated with BNPL products, in particular that borrowing is involved

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15 With five or fewer instances of non-compliance.

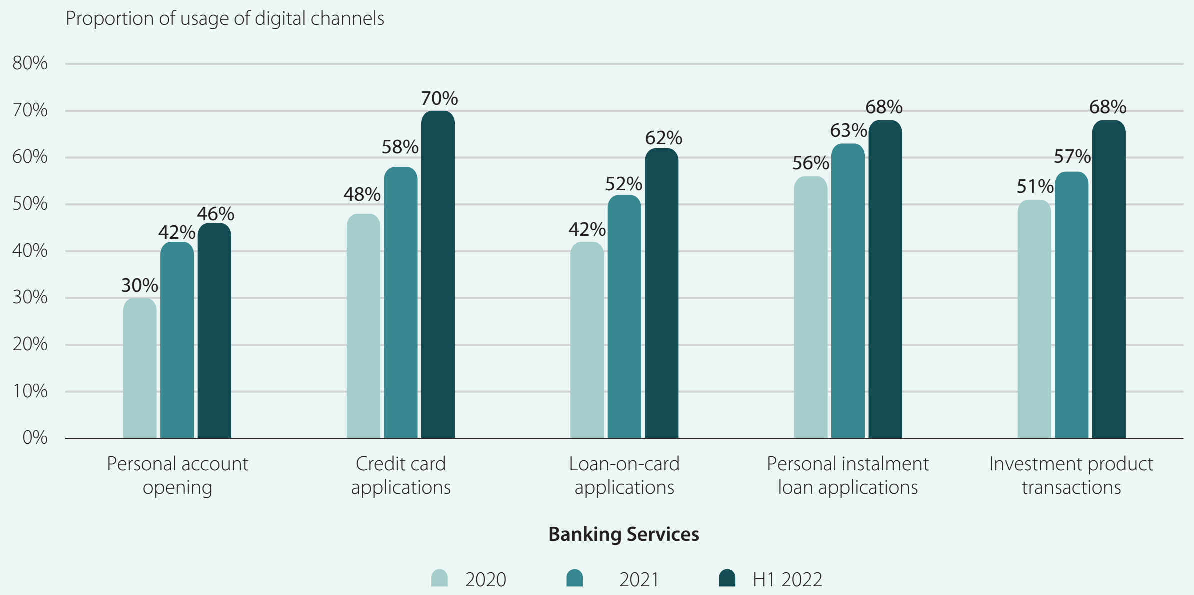
Banking Stability

Customer protection amid rapid digitalisation of banking services

Banks in Hong Kong have been at the forefront of fintech, enabling the public to access and use innovative digital banking services. In this connection, the HKMA published an *inSight*[16] article in April to share, among others, the digitalisation trend of the retail banking business, in particular the public's growing acceptance and usage of digital channels when accessing banking products and services in recent years. Recognising that banking consumer protection is an ongoing and important task, the article also highlighted the measures taken by the HKMA to protect consumers who use digital channels, as well as the priorities in the years to come, such as developing protection measures for some new service models.

Chart 2 below demonstrates an increasing trend in the usage of digital channels by the public in recent years, particularly in respect of applications for personal credit and personal account opening.

Chart 2 Latest landscape of digital retail banking services



Building on its ongoing efforts to enhance consumer protection amid increasing digitalisation, the HKMA completed a thematic review on disclosure measures in respect of applications for credit products through digital platforms, and issued a circular in December to share the observations and sound practices identified in the review with the banking industry. AIs are also reminded of the importance of ensuring proper customer protection in the digital environment, in light of the potentially higher risks of impulsive borrowing, and even over-borrowing. Meanwhile, the HKMA also maintains close dialogue with banks on consumer protection trends, such as increasing frauds and scams in card transactions, with a focus on customer communication and education to prevent losses.

16 *inSight* is the HKMA's official column, featuring articles written by senior executives on the major new policies and initiatives of the HKMA, or other topical issues of interest to the public.

Enhanced measures for real-time fund transfers

To enhance protection for bank customers who might inadvertently make mis-transfers of funds, the HKMA introduced requirements for AIs to adopt, among others, mandatory name matching by the end of 2022 for real-time fund transfers of HK$10,000 or more through the Faster Payment System (FPS) and similar intra-bank fund transfers, where a payer inputs the payee's bank account number as the identifier (Figure 10).

Figure 10 Raising public awareness of correct input of information when making fund transfers

Education programme to remind the public to ensure correct input of information when making fund transfers

Consumer protection in respect of dormant accounts and unclaimed deposits

The HKMA continues to follow up with banks on the handling of dormant accounts and unclaimed deposits, including the checking of the status of unclaimed deposit account holders and appropriate follow-up actions to support the reunification of assets with the rightful owners. An updated leaflet titled *Understanding Dormant Accounts and Deceased Accounts* was published by HKAB, in consultation with the HKMA, in August to educate the public on how to avoid having inactive and dormant accounts; how to search for and recover lost accounts; and how to handle accounts of those deceased, and the documents required.

Culture dialogues

Since its commencement in 2019, the culture dialogue initiative has enhanced the HKMA's engagement with the leadership of AIs to discuss the effectiveness of AIs' culture enhancement efforts and provide supervisory feedback, including observations from the HKMA's ongoing supervision. During 2022, the HKMA conducted seven culture dialogue meetings with senior management and/or board members of AIs.

Addressing the risks of hiring individuals with misconduct records

The HKMA issued a circular in May to endorse the Guidelines on the Mandatory Reference Checking (MRC) Scheme issued by the industry associations with the aim of tackling the "rolling bad apples"[17] phenomenon in the local banking sector.

The MRC Scheme is an important component of the HKMA's effort to enhance bank culture in Hong Kong. Under the Scheme, all AIs share and obtain conduct-specific reference information about prospective employees using a common protocol that covers seven years prior to the application for the position, so that the recruiting AIs can make a more informed employment decision. To allow sufficient time for AIs to put in place necessary internal controls, policies and procedures, there is a 12-month preparatory period for the implementation of the MRC Scheme, i.e. AIs are expected to implement Phase 1 of the MRC Scheme by May 2023.

[17] "Rolling bad apples" refers to the situation where individuals who have engaged in misconduct behaviour in one institution but can obtain employment elsewhere without disclosing their earlier misconduct to the new employer.

Bank culture

Over the years, the HKMA has promoted sound culture in the banking industry by launching various culture initiatives, including self-assessment on bank culture and culture dialogues with individual banks. In 2022, the HKMA, with the support of an external consultant, completed a focused review on incentive systems of front offices in 20 retail banks ("Focused Review"). The Focused Review was a very large scale industry-wide culture exercise conducted in the Hong Kong banking industry, drawing insights from information gathered from a wide range of activities, including the first-ever industry-wide employee survey inviting all frontline staff of the 20 retail banks to participate (Figure A).

Figure A A range of assessment activities

Industry-wide employee survey

25,112
All frontline retail bank staff

70%
response rate

Document reviews

20
Incentive systems of retail banks

Representing **ALL** major retail banks in Hong Kong

Individual interviews

300
One-on-one interviews conducted with

bank staff
supervisors
senior management

Focus group discussions

564
Frontline staff participated in

60
sessions

Following completion of the Focused Review, the HKMA published the Review Report in May to share the identified industry-wide observations. The Review Report highlights four major observations in relation to the way incentive systems of front offices drive frontline behaviour and customer outcomes. Based on these major observations, the HKMA devised six incentive system design principles (Figure B) and identified 17 sound incentive practices to reinforce good customer and conduct outcomes (Figure C).

Figure B Incentive system design principles

1 Clear prioritisation of customer outcomes

To avoid staff struggling with competing goals

2 Development of an aligned system

To ensure consistency with other mutually reinforcing components with the overall culture of the bank

3 Focusing on intrinsic motivators

To rely more on robust non-financial incentives, which are more effective and with less risk and cost to banks

4 Wise use of technology

To embrace fintech and adopt more advanced technologies (such as Artificial Intelligence and Machine Learning) to help detect undesirable behaviours and monitor misconduct more efficiently and effectively

5 Close connection between leaders and staff

To foster stronger alignment at various levels with a view to improving the impact of incentives by increasing opportunities for robust oversight, feedback and assessment, especially on non-financial performance

6 Minimising potential misconduct and mis-selling behaviours

To carefully design the incentive systems to induce sound behaviour of staff and minimise any potential misconduct and mis-selling activities

Banking Stability

Figure C Sound incentive practices

Sound Practices	Principle 1 Clear prioritisation of customer outcomes	Principle 2 Development of an aligned system	Principle 3 Focusing on intrinsic motivators	Principle 4 Wise use of technology	Principle 5 Close connection between leaders and staff	Principle 6 Minimising potential misconduct and mis-selling behaviours
1. Rewarding investment in long-term relationships	●	●	●			
2. Aligning internal policy with values	●	●	●			
3. Reinforcing customer outcomes over solely fulfilling customer requests	●	●	●			●
4. Increased focus on customer-oriented behaviour, not sales	●	●	●			●
5. Supporting staff to understand customer needs	●	●		●		●
6. Customer outcomes over process compliance	●		●	●		●
7. Integrating compliance requirements into system design	●	●		●		●
8. Fair and objective monitoring of conduct				●		●
9. Responding to staff feedback		●		●	●	
10. Aligning metrics with behaviour	●				●	
11. Rewarding non-financial performance	●	●	●			
12. Reducing incentive system complexity		●	●			
13. Setting dynamic targets		●				●
14. Managing behavioural risk from tactical incentive programs		●				●
15. Clear and appropriate consequences for undesired behaviour		●				●
16. Considering diverse perspectives		●	●		●	
17. Amplifying good conduct with social rewards			●		●	

For details, please refer to the full Report on the Focused Review:

In addition to the publication of the Review Report, the HKMA has also conducted the following as part of the entire Focused Review exercise:

- Published **Industry Report** covering industry-wide observations

- Issued **Individual Bank Reports** of the Review to all **20 participating banks**

- Conducted industry briefing with **over 100 participants** from the banking industry

Banking Stability

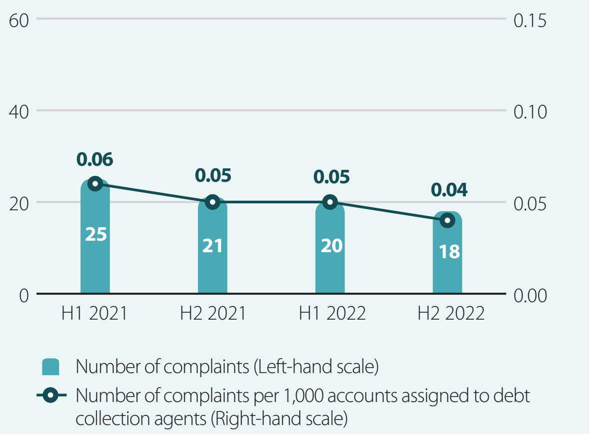
Engagement of intermediaries by authorized institutions

Measures were introduced to further protect bank customers and reduce potential risks to the reputation of the banking industry from possible malpractices by fraudulent lending intermediaries. In particular, the HKMA reminded the public to stay alert to bogus phone calls. Retail banks' hotlines have been widely and effectively used by the public to verify callers' identities, with a total of over 28,000 enquiries received during 2022.

Customer complaints relating to debt collection agents employed by authorized institutions

The number of complaints received by AIs on their debt collection agents decreased to 38 from 46 in 2021 (Chart 3). The HKMA will continue to monitor AIs' engagement with debt collection agents.

Chart 3 Complaints received by AIs about their debt collection agents



Credit data sharing

The HKMA continued to work closely with industry associations including HKAB, the Hong Kong Association of Restricted Licence Banks and Deposit-taking Companies and the Hong Kong S.A.R. Licensed Money Lenders Association Limited, to introduce more than one consumer credit reference agency (CRA) in Hong Kong through the Credit Reference Platform (CRP). This was done with a view to enhancing the service quality of consumer CRAs and reducing the operational risk of having only one commercially run service provider in the market.

The CRP was launched in November and the industry associations selected three CRAs to provide consumer credit reference services under the multiple CRAs model. Subsequent to the launch of the CRP, participating credit providers commenced loading of consumer credit data onto the CRP, which will then be downloaded by the selected CRAs in preparation for their provision of consumer credit reference services.

Financial inclusion

As part of its continued efforts to promote financial inclusion, the HKMA actively encourages banks to further enhance the coverage of the banking network through conventional and innovative channels. Banks have responded positively to the HKMA's call for the provision of basic banking services. During the year, some banks set up a new branch and self-service facilities at large-scale public housing estates in new development areas of Hong Kong where they are expecting a growing population and demand for banking services. These represent banks' efforts to enhance access to banking services and manifest their commitment to financial inclusion.

Mr Eddie Yue, Chief Executive of HKMA (third from right) and Mr Alan Au, Executive Director (Banking Conduct) of HKMA (first from right), attend the opening ceremony of a bank branch at Queen's Hill Estate in Fanling

The HKMA monitored banks' implementation of the *Practical Guideline on Barrier-free Banking Services*, the *Guideline on Banking Services for Persons with Intellectual Disabilities*, and the *Guideline on Banking Services for Persons with Dementia* issued by HKAB[18]. AIs providing retail banking services have completed implementation of the three published industry guidelines. The HKMA also collaborated with the Consumer Council to deliver a consumer education talk targeted at parents and caregivers to promote better understanding of banking services for persons with intellectual impairment.

During the pandemic, many members of the public faced difficulties in reactivating their dormant or suspended Mainland bank accounts because of their inability to visit the banks' branches on the Mainland in person due to the travel restrictions. The HKMA co-ordinated with the relevant banks and the Mainland authorities, and issued guidance to banks to facilitate reactivation of Mainland bank accounts without the need for customers to cross the boundary in person. About half a million Mainland bank accounts of Hong Kong customers have been reactivated through such facilitative measures. Similar facilitative measures were introduced to customers of Hong Kong bank accounts who are currently residing outside Hong Kong.

More details of the progress made in enhancing accessibility to basic banking services can be found in the *Sustainable HKMA* chapter of *Sustainability Report 2022*.

[18] The Guidelines were issued in 2018, 2020 and 2021 respectively.

Banking Stability

Opening and maintaining bank accounts

The HKMA maintains close communication with the banking industry and business sectors to promote exchanges on issues associated with opening and maintaining bank accounts in Hong Kong. The HKMA's dedicated Account Opening and Maintenance Team handles and follows up on enquiries and feedback received from the public as well as the local and overseas business communities through a dedicated email account and a hotline.

The HKMA, in collaboration with the Customs and Excise Department, organised a roundtable session in July to facilitate direct dialogue among the banking industry and money service operators (MSOs), for exchanging views and sharing practical experiences regarding account opening and maintenance. About 50 representatives from banks, HKAB, the Hong Kong Money Service Operators Association and MSOs attended the session.

The HKMA and the Customs and Excise Department jointly organise a roundtable session

The HKMA's priority has been to ensure banks implement appropriate and effective CDD and do not undermine access to banking services by legitimate businesses and ordinary residents. At the encouragement of the HKMA, several banks are offering the Simple Bank Account service, which provides basic banking services with less extensive CDD measures. In 2022, about 3,600 such accounts were opened by banks, with the cumulative total number of such accounts increasing to over 12,700 since the service was first launched in 2019.

With the concerted efforts made to enhance customer experience in the CDD process, as well as ongoing communication with relevant stakeholders, the average unsuccessful rate of account opening applications is now around 4%, representing a significant improvement from around 10% in early 2016.

Deposit protection

Currently, the protection limit under the Deposit Protection Scheme (DPS)[19] is HK$500,000 per depositor per bank, which has been in place since 2011. To ensure the DPS remains effective in serving its public policy objectives, the Hong Kong Deposit Protection Board (HKDPB) has initiated a comprehensive review of the DPS to examine whether its features remain in line with international practices and the latest developments in Hong Kong. Based on the findings of the comprehensive review, the HKDPB has been formulating a package of policy recommendations on enhancements to the DPS and aims to solicit views and comments from the public and other stakeholders in 2023.

The HKDPB conducts drills regularly to ensure the payout readiness of the DPS. In 2022, the drill involved the participant banks of the FPS to test out the new electronic payment channels in processing the DPS compensation payment in co-ordination with the payout agent bank and Hong Kong Interbank Clearing Limited. The drill was successfully completed and no major issue was noted. Apart from payout drills, the HKDPB continued with its programme to monitor and ensure DPS member banks' readiness in submitting information in compliance with the Information System Guideline.

To promote the HKDPB's role as the "Guardian of Deposits", a multimedia publicity campaign with a new TV commercial themed "Keep Calm and Deposit Safely On" was launched with the aim of giving peace of mind to depositors. Reflecting increased focus on the younger generation, the Board launched the "Protecting Ah Chuen" social media campaign, which featured animated videos and interactive games to increase young people's interest in money-saving and their awareness of deposit protection.

Banking complaints

The HKMA received 3,459 banking complaints against AIs or their staff in 2022, representing an increase of 17% or 498 cases from the previous year. In response to the rise, the HKMA made extra efforts and handled 3,202 complaint cases, up 11% year on year (Table 5). The HKMA's performance pledges on the response time to enquiries and complaints were generally met (Table 6).

Table 5 Banking complaints received by the HKMA

	2022			2021
	Conduct-related issues	General banking services	Total	Total
Received during the year	353	3,106	3,459	2,961
Completed during the year	270	2,932	3,202	2,892

Table 6 Performance pledges of the HKMA in handling banking complaints

Items	Performance Pledge	Achievement Rate
Acknowledge receipt of complaint-related enquiries or duly completed complaint forms	7 working days	100%
Preliminary response to complaints	10 working days	100%
Reply to complaint-related enquiries	15 working days	100%

19 The DPS in Hong Kong was established in 2006 with the primary objective of protecting depositors and hence contributing to banking stability.

Banking Stability

Complaints related to credit cards increased by 25% to 667 cases in 2022 and continued to be the most common type of complaints received. Over 70% of these complaints concerned disputes over card transactions or unauthorised card transactions, and a majority of the cases were fraud related (e.g. phishing SMS messages or emails, online shopping scams). The HKMA has reminded AIs to adopt appropriate measures to identify and report suspicious card transactions, and to take proper follow-up actions, including promptly notifying customers for card-not-present transactions with or without a one-time password, and collaborating with law enforcement agencies on information sharing and assisting in stop payments and criminal investigations. Insights from the handling of complaints also informed the HKMA's appropriate supervisory follow-up on technology risk management and consumer protection measures of AIs concerned.

Another common category of complaints concerned the provision of banking services, namely the opening and maintenance of bank accounts. This category of complaints accounted for 19% of the total number of complaints received in 2022. The AIs concerned have been reminded to put in place appropriate arrangements to review relevant procedures and to ensure sufficient resources for handling related enquiries/complaints in a fair and timely manner (Chart 4).

The HKMA also handled 232 informant reports, which mainly concerned banks' work arrangements or branch operations under the COVID-19 situation. For complaints or informant reports where supervisory concerns and/or staff conduct issues were identified, follow-up actions were taken as appropriate.

Chart 4 Types of services or products concerned in banking complaints received by the HKMA

Enhancement of HKMA's complaints handling process and updated supervisory guidance

In light of the continual rising trend of banking complaints received in recent years, during September to December, the HKMA engaged an external consultant to conduct a review of its complaints handling practices, procedures and resources allocation to further enhance effectiveness and efficiency. The HKMA fully implemented the consultant's recommendations in January 2023, including introducing ways to promote early resolution between complainants and banks concerned; modifying operational workflows to expedite the complaint handling process; and enhancing the consumer education impact of *Complaints Watch*[20].

The HKMA has also issued an updated statutory guideline to AIs on complaints handling and redress mechanisms to implement the latest international standards on financial consumer protection. Under the enhanced complaints handling framework, AIs are expected to, among others, follow up and monitor any issues of concerns or control deficiencies as identified from the handling of customer complaints, to achieve improved financial consumer protection on an ongoing basis; and proactively make use of alternative dispute resolution channels (such as mediation and arbitration services) when complaints involving monetary disputes referred by the HKMA cannot be resolved through AIs' internal mechanisms.

Enforcement

The HKMA continued to enforce CDD and record keeping requirements under the Anti-Money Laundering and Counter-Terrorist Financing Ordinance (AMLO), taking proportionate disciplinary action to safeguard the stability and integrity of the banking system. This was done in respect of deficiencies in conducting on-boarding CDD and implementing name screening mechanism of customers' beneficial owners in one case, and for control lapses in relation to on-going CDD and enhanced customer due diligence (EDD) in high-risk situations in another one. In 2022, the HKMA also exercised the power under the Payment Systems and Stored Value Facilities Ordinance (PSSVFO) on a SVF licensee for control deficiencies in transaction monitoring (Table 7).

Table 7 Enforcement actions taken by the HKMA under different ordinances

Ordinance	Actions
AMLO	• Imposed HK$17 million pecuniary penalties against two banks for failures in CDD and EDD in high-risk situations.
PSSVFO	• Imposed public reprimand and HK$875,000 pecuniary penalties against a SVF licensee for failures in transaction monitoring.
SFO	• Referred 21 cases to the SFC after HKMA assessment/investigation. • The SFC, based on enforcement collaboration with the HKMA, banned four former relevant individuals from re-entering the industry, ranging from six months to life[a].
Insurance Ordinance	• Received 182 insurance-related cases of AIs, of which 46 cases were referred by the IA under the delegation arrangement. Completed the handling of 122 insurance-related cases of AIs.
BO and other relevant ordinances	• Issued 36 compliance advice letters to AIs and their staff members to remind them of the importance of regulatory compliance.

a. Concerns about the fitness and properness of the former relevant individuals were related to the following misconduct: forging a customer's signature on a direct debit authorisation form, operating clients' accounts discretionarily without obtaining the clients' written authorisations under the guise of pre-signed client instruction forms, and having a record of criminal convictions under the Crimes Ordinance and the Prevention of Bribery Ordinance.

20 *Complaints Watch* is a periodic newsletter issued by the HKMA to share with the banking industry information on complaints received by the HKMA. It highlights the latest complaint trends and emerging topical issues, and shares good practices that AIs may find helpful.

Banking Stability

To enhance the efficiency and effectiveness of enforcement work, and as part of its digitalisation programme, the HKMA adopted technology tools such as robotic process automation in its investigative processes as well as speech-to-text technology to support automatic transcription and analysis of audio recordings. Benefits were gained in freeing staff from repetitive duties and enabling them to focus on higher value-added tasks. In addition, visualisation tools have been deployed to help understand emerging trends and facilitate formation of data-driven views.

Sharing feedback and good practices with the banking industry

To promote proper standards of conduct and prudent business practices among AIs, two issues of *Complaints Watch* were published in 2022 to highlight issues identified from complaints that AIs should take note of and to share good practices to guide AIs' appropriate actions, including (i) protection of vulnerable customers in digital banking; (ii) selling of qualifying deferred annuity policies; (iii) business partnership with online personal financial service platforms; and (iv) fraud prevention in loan application processes.

The HKMA also encouraged the industry to collaborate in educational efforts using social media and other means to caution customers about different types of scams brought to light by the HKMA's handling of complaints (Figure 11).

Figure 11 Raising public awareness of different types of scams

Educational messages on social media to highlight the importance of checking the content displayed in one-time password messages and not to rely on the "AutoFill" function of mobile phones

Dual awards to HKMA staff for handling of banking complaints

Two HKMA staff members, Mr Hung Pui-chuen, Manager of the Enforcement Division, and Ms Olivia Lam, Assistant Manager of the Complaint Processing Centre of the Enforcement Division, received Ombudsman's Awards 2022 for Officers of Public Organisations in recognition of their efforts in fostering a positive culture of service and promoting professionalism in complaints handling.

> **"Pui-chuen handles banking complaints with empathy and in a professional manner, gaining public recognition of the HKMA's guidance to banks on treating customers fairly."**

> **"Olivia demonstrated her passion and professionalism in handling public enquiries and complaints, helping enhance public trust in banking services."**

Dual awards for public service: Ms Carmen Chu (first from left), Executive Director (Enforcement and AML); Ms Alice Lee (first from right), Head (Enforcement); Mr Hung Pui-chuen (second from left), Manager (Enforcement); and Ms Olivia Lam (second from right), Assistant Manager (Enforcement); all from the HKMA, at the awards ceremony with Ms Winnie Chiu, The Ombudsman (middle)

The HKMA will continue to devote its best endeavours to handle customer complaints against banks, with a view to enhancing consumer protection and providing an exemplary model for the industry to treat customers fairly.

Capacity building in the banking sector

The banking sector continued to have strong demand for talented professionals to cater for business expansion in the areas of fintech, green and sustainable finance and Guangdong–Hong Kong–Macao Greater Bay Area (GBA) business. While it is important to attract top professionals from around the world, it is also crucial to develop local talent to enlarge the overall talent pool. The HKMA therefore focuses on two areas in terms of talent development: (i) grooming the younger generation to build a sustainable pipeline of future talent, and (ii) upskilling and reskilling existing practitioners to ensure they remain relevant amid the fast-evolving industry developments.

Specifically, building on its talent development strategy, "Connecting Talent to the Future", the HKMA implemented a number of initiatives during the year to help attract, develop and retain talent for the banking sector.

Connecting Talent to the Future

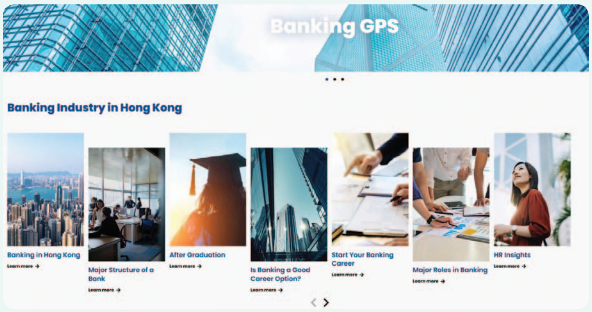
Grooming Future Talent

Banking Graduate Trainee Programme

The Banking Graduate Trainee Programme is a new initiative with an aim of nurturing more new entrants and enlarging the talent pool for fast-growing areas of the banking sector. Under the Programme, the banking sector provided nearly 100 entry-level job opportunities in fintech, green and sustainable finance, and GBA business for recent university graduates. In addition to work experience, the recruited trainees are able to participate in relevant professional trainings and centralised training seminars organised by the HKMA to help lay a solid foundation for their long-term career development in the banking industry.

Banking GPS

During the year, the HKMA launched a new online resource platform – Banking GPS – as a one-stop industry directory to further deepen understanding among young people of banking career prospects and opportunities. This is a resource-rich platform that introduces the structure, job responsibilities and career paths of major functions in a bank across the front, middle and back offices. The platform also provides job-hunting tips and experience sharing from industry practitioners, which are particularly useful for young people who are eyeing a role in the industry, now or in the future. Most importantly, it puts together job openings at different banks, making it a handy additional channel for interested individuals to find out about career opportunities.



For details, please refer to the Banking GPS web page:

Future Banking Bridging Programme

The Future Banking Bridging Programme, a joint effort by the HKMA, the Hong Kong Institute of Bankers (HKIB) and the banking sector, is designed to better equip university students who aspire to build a career in banking. Building on the popularity of the inaugural Programme in 2021, the second round of the Programme was held in October and November 2022, providing a valuable opportunity for more than 200 university students to gain practical knowledge in the hottest areas of banking. The participants also had the chance to interact directly with bankers to get first-hand tips on landing a banking job and to experience the daily life of a banker outside the classroom through job shadowing.

Banking Career Talk Series

The HKMA, in collaboration with the banking industry and the HKIB, held career talks at local universities during 2022 to showcase career opportunities and prospects in the new era of the banking industry. The talks attracted a total of around 500 undergraduates from different universities and disciplines. During the talks, the speakers shared their banking knowledge, work experience and interview skills to help the participants better prepare for their career planning and development.

The Future Banking Bridging Programme's 2022 cohort comprises over 200 students from different universities

Banking Stability

Apprenticeship Programme for Private Wealth Management

The Apprenticeship Programme for Private Wealth Management is organised by the HKMA in partnership with the Private Wealth Management Association, enabling university students to build an early foundation for a career in the private wealth management industry through apprenticeships with a private wealth management institution and tailored training for two summers. From its inception in 2017 to the end of 2022, the Programme offered about 350 apprenticeship opportunities to university students. A new round of recruitment was conducted in November 2022 for a new batch of apprentices for 2023-2024.

Promotion to secondary school students

To allow future generations to better understand and develop interest in the banking industry at an early stage, the HKMA proactively reached out to secondary school students as well as their teachers and parents during the year. In November, the HKMA hosted a banking career session at the Life Planning Education Conference organised by the Education Bureau (EDB) for about 80 career guidance teachers in Hong Kong and the Mainland to support their career planning guidance for high school students through the "Train the Trainer" approach. The HKMA also partnered with the Chinese Banking Association of Hong Kong (HKCBA) and the EDB to provide talks on the banking system for high school students participating in a summer programme. Further, the HKMA took part in a series of workshops organised by the Qualifications Framework Secretariat during 2022 to provide an overview of career prospects in the banking industry to around 400 high school students.

The HKMA participates in the Young Banker Summer Programme co-organised by HKCBA and EDB

The HKMA hosts a banking career session in the Life Planning Education Conference organised by the EDB

Upskilling the industry's workforce

Enhanced Competency Framework

The Enhanced Competency Framework (ECF) for Banking Practitioners is developed in collaboration with the banking industry and relevant professional bodies, providing a set of common and transparent competency standards required of the relevant professional areas in the banking sector. The ECF also provides a qualification framework for recognition of those practitioners who have completed the necessary training and assessment, and who have acquired relevant working experience. During 2022, a new ECF module on Compliance was launched to enhance the professional competencies of existing practitioners performing the compliance function. Another new module on Green and Sustainable Finance is also being developed to meet the rapidly growing demand for green and sustainable finance professionals in the banking industry. Up to the end of 2022, more than 17,000 banking practitioners had obtained certifications in various professional areas under the ECF.

Pilot Scheme on Training Subsidy for Fintech Practitioners

In the 2022-23 Budget, the Financial Secretary announced the Pilot Scheme on Training Subsidy for Fintech Practitioners to promote the professional development of fintech talents and expand the fintech talent pool in Hong Kong. Under the Scheme, practitioners who have attained eligible fintech professional qualifications can receive reimbursement of up to 80% of the training costs. As the ECF on Fintech became the first set of fintech professional qualifications recognised under the Government's Qualifications Framework, the HKMA was commissioned by the Financial Services and the Treasury Bureau to launch the Scheme for the banking sector in September to increase incentives for banking practitioners to pursue professional development in fintech.

Skills Transformation and Empowerment Programme

The HKMA launched the Skills Transformation and Empowerment Programme to provide support to the banking industry in driving the upskilling and reskilling of banking practitioners. Under the Programme, the HKMA conducted a thematic review of major banks' talent development practices to better understand their strategies and action plans to address future talent needs. The HKMA will share key observations and good practices with the industry for reference.

Banking Stability

Financial market infrastructures oversight

The PSSVFO empowers the Monetary Authority to designate and oversee clearing and settlement systems (CSSs) that are material to the monetary and financial stability of Hong Kong, and to the functioning of Hong Kong as an international financial centre.

The purposes of the PSSVFO include promoting the general safety and efficiency of the designated CSSs:

- the Central Moneymarkets Unit;
- the Hong Kong dollar Clearing House Automated Transfer System (CHATS), including the Hong Kong dollar FPS;
- the US dollar CHATS;
- the euro CHATS;
- the renminbi CHATS, including the renminbi FPS; and
- the Continuous Linked Settlement (CLS) System.

The PSSVFO also provides statutory backing to the finality of settlement for transactions made through the designated CSSs by protecting the settlement finality from insolvency laws and any other laws.

The HKMA is also responsible for overseeing the Hong Kong Trade Repository (HKTR), the OTC derivatives trade repository in Hong Kong. While the HKTR is not a clearing or settlement system and is thus not designated as such under the PSSVFO, the Monetary Authority will ensure that the HKTR is operated in a safe and efficient manner, which is in line with one of the HKMA's functions to maintain the stability and integrity of the monetary and financial systems of Hong Kong.

Monitoring and assessment

The HKMA oversees local FMIs under its purview through off-site reviews, continuous monitoring, on-site examinations and meetings with FMIs' management. In doing so, the HKMA adopts international standards in its oversight framework. In particular, the requirements under the Principles for Financial Market Infrastructures (PFMI)[21] are incorporated in the HKMA's guidelines for designated CSSs and the HKTR.

The HKMA completed the PFMI assessments on the FMIs under its oversight. All the FMIs have published Disclosure Frameworks, which is a key requirement under the PFMI to improve transparency by disclosing system arrangements principle by principle. The PFMI assessment results and Disclosure Frameworks are available on the HKMA website.

The HKMA has been closely monitoring the operations of the FMIs under split team arrangements and the sufficiency and appropriateness of their contingency arrangements amid the evolving pandemic situation. The FMIs have also continued to strengthen their endpoint security and cyber resilience under the close monitoring of the HKMA.

[21] In April 2012, the Committee on Payments and Market Infrastructures and IOSCO published the PFMI, which constitute the international standards for the oversight of FMIs, including systemically important payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories.

International participation

The HKMA is a member of the Committee on Payments and Market Infrastructures (CPMI) and participates in meetings, working groups and forums on FMI oversight matters. Throughout the year, the HKMA participated in CPMI meetings which, among other things, discussed issues related to enhancing cross-border payments as well as the application of oversight standards to stablecoin arrangements. It also participates in the CPMI-IOSCO Implementation Monitoring Standing Group, which is responsible for monitoring and assessing the implementation of the PFMI by different jurisdictions.

The HKMA is also a member of the Oversight Forum of the financial messaging services provider SWIFT. This forum discusses relevant oversight matters and shares SWIFT-related information. Hong Kong's AIs and FMIs, which commonly use SWIFT's services, may be exposed to risks in the event of any disruption to SWIFT's operations. During 2022, the HKMA attended meetings and teleconferences to discuss matters of interest, in particular SWIFT's customer security framework and cybersecurity issues.

The HKMA participates in the international co-operative oversight of the CLS System[22] through the CLS Oversight Committee. During 2022, the HKMA attended various meetings of the CLS Oversight Committee to discuss operational, developmental and oversight matters.

In addition, the HKMA has established co-operative oversight arrangements with other relevant authorities, both at the domestic and international levels, to foster efficient and effective communication and consultation. This enables the HKMA and these other authorities to support one another in fulfilling their respective mandates with respect to FMIs.

Independent tribunal and committee

An independent Process Review Committee, whose members are appointed by the Chief Executive of the Hong Kong Special Administrative Region, reviews processes and procedures adopted by the HKMA in applying standards under the PSSVFO to systems in which the HKMA has a legal or beneficial interest. The Committee assesses whether the HKMA has applied the same procedures to all designated CSSs. The Committee held two meetings and reviewed four regular reports and 36 accompanying oversight activities management reports in 2022. The Committee concluded that it was not aware of any case where the HKMA had not duly followed internal operational procedures, or where the HKMA had not been procedurally fair in carrying out its oversight activities. Under its terms of reference, the Committee submitted its annual report to the Financial Secretary, and the report is available on the HKMA website.

An independent Payment Systems and Stored Value Facilities Appeals Tribunal hears appeals against decisions of the Monetary Authority on licensing and designation matters under the PSSVFO. There have been no appeals since the establishment of the Tribunal.

22 The CLS System is a global clearing and settlement system operated by the CLS Bank to handle cross-border foreign exchange transactions. It enables foreign exchange transactions involving CLS-eligible currencies, including the Hong Kong dollar, to be settled on a payment-versus-payment basis.

International Financial Centre

During 2022, the HKMA achieved notable progress in strengthening Hong Kong's status as a globally competitive international financial centre through a multi-pronged approach.

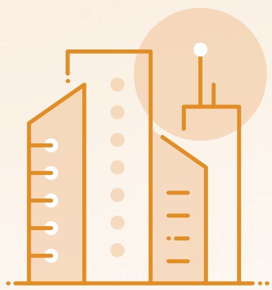
The success of the Global Financial Leaders' Investment Summit, which welcomed over 200 international and regional leaders from around 120 global financial institutions, had reinforced Hong Kong's status as an international financial centre and created positive ripple effects.

On reinforcing Hong Kong's position as a global hub for offshore renminbi business, significant progress was made in a number of areas. These included enhancements to the existing currency swap agreement between the HKMA and the People's Bank of China and subsequent refinements to the HKMA's Renminbi Liquidity Facility, thereby ensuring sufficient renminbi liquidity which is conducive to further offshore renminbi products and market developments; joint announcement with the People's Bank of China and the Securities and Futures Commission on the implementation of Swap Connect, joint efforts with the Securities and Futures Commission and Hong Kong Exchanges and Clearing Limited for the introduction of a Dual Counter Market Making regime to facilitate the trading of renminbi-denominated stocks in Hong Kong, and the HKMA's multi-year programme to further enhance our financial market infrastructure and develop the Central Moneymarkets Unit into a major international central securities depository in Asia. Thanks to ample renminbi liquidity, world-class market infrastructure and the Mainland-Hong Kong Connect schemes, Hong Kong is the favoured platform for Mainland funds to tap into global markets and for international investors to access the fast-growing Mainland markets.

The HKMA also made good progress towards strengthening the competitiveness of Hong Kong's financial platform, in areas including bond issuance, asset and wealth management, corporate treasury centres, and green and sustainable finance. To promote Hong Kong's financial services, the HKMA stepped up market outreach to overseas and Mainland stakeholders to keep them informed about the resilience of Hong Kong's financial system and the prospects it presents.

Meanwhile, the HKMA continued to implement the "Fintech 2025" strategy to promote the wide adoption of fintech by the financial sector and bolster Hong Kong's position as a fintech hub more broadly. The Faster Payment System continued to see steady growth, with the number of registrations exceeding ten million in March and the average daily turnover exceeding one million transactions in September.

As an active member in international and regional central banking and regulatory forums, the HKMA continued to contribute to global efforts in maintaining financial stability and promoting financial market developments.



International Financial Centre

Overview

The HKMA continued its proactive efforts in strengthening Hong Kong's competitiveness as an international financial centre. In November, the HKMA organised the Global Financial Leaders' Investment Summit, which was an initiative announced by the Financial Secretary in his 2022–23 Budget. The three-day event featured prominent financial leaders sharing unique perspectives on navigating through uncertainties while capturing opportunities. The overwhelming responses with over 200 participants from around 120 international financial institutions demonstrated the global financial sector's commitment to Hong Kong.

Hong Kong's position as an offshore renminbi business hub further consolidated, with offshore renminbi businesses registering robust growth during the year. Hong Kong plays an indispensable role in facilitating capital flows between the Mainland and international financial markets, with the Mainland–Hong Kong Connect schemes being widely accepted as the channels of choice for international investors to access onshore capital markets and for Mainland investors to allocate to offshore assets. In 2022, trading under Northbound Bond Connect accounted for 61% of foreign turnover in the China Interbank Bond Market. Southbound Bond Connect and the Cross-boundary Wealth Management Connect (Cross-boundary WMC) have been operating smoothly since launch in 2021. The announcement of Swap Connect further broadened financial co-operation between Hong Kong and the Mainland into the derivatives market and strengthened Hong Kong's status as a key offshore renminbi business hub and risk management centre. The enhancement of the existing currency swap arrangement between the HKMA and the People's Bank of China (PBoC) in July was another important milestone in strengthening Hong Kong's role as an offshore renminbi business hub.

To develop a more diverse range of renminbi-denominated products in Hong Kong, a working group comprising the HKMA, the Securities and Futures Commission (SFC) and Hong Kong Exchanges and Clearing Limited (HKEX) completed a feasibility study on expanding the use of the renminbi in equity trading in Hong Kong. The working group has been taking forward the preparation work, including introducing a Dual Counter Market Making (DCMM) regime to enhance the trading mechanism of Hong Kong dollar and renminbi dual-counter stocks.

The HKMA continued to work on strengthening the competitiveness of Hong Kong's financial platform. In particular, to increase Hong Kong's appeal as a preferred fund management centre, the HKMA worked closely with the Government and the financial industry to provide a more facilitating tax and regulatory environment. Significant progress was also made in promoting innovation in Hong Kong's bond market, and consolidating Hong Kong's position as a regional green and sustainable finance hub. At the same time, the HKMA stepped up market outreach to promote Hong Kong's financial services to overseas and Mainland stakeholders.

The HKMA Fintech Facilitation Office (FFO), together with the banking departments, continued to implement the "Fintech 2025" strategy[1] to promote wide adoption of financial technology (fintech) and strengthen Hong Kong's position as a fintech hub in Asia. The key initiatives implemented during the year included:

- promoting regulatory technology (Regtech) adoption and conducting the Tech Baseline Assessment;
- advancing the work on wholesale Central Bank Digital Currency (CBDC) for improving cross-border payments;
- progressing further in the study on introducing retail CBDC in Hong Kong, i.e. e-HKD;
- launching Commercial Data Interchange (CDI);
- enhancing talent development;
- nurturing the fintech ecosystem with funding and policies;
- strengthening cross-border collaboration in fintech; and
- expanding the adoption of the Faster Payment System (FPS).

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1 Unveiled in June 2021, the strategy aims to encourage the financial sector to adopt technology comprehensively by 2025, as well as to promote the provision of fair and efficient financial services for the benefit of Hong Kong citizens and the economy. The five focus areas of the strategy are: (1) all banks go fintech, (2) future-proofing Hong Kong for Central Bank Digital Currencies, (3) creating the next-generation data infrastructure, (4) expanding the fintech-savvy workforce, and (5) nurturing the ecosystem with funding and policies.

International Financial Centre

Safe and efficient operation of financial infrastructure is fundamental for reinforcing Hong Kong's position as a leading international financial centre. In 2022, the four interbank Real Time Gross Settlement (RTGS) systems, the Central Moneymarkets Unit (CMU) and the Hong Kong Trade Repository (HKTR) achieved 100%[2] system availability, outperforming the target of 99.95%. The settlement services on Northbound and Southbound Bond Connect remained smooth. Among the debt securities lodged with the CMU at the end of the year, the outstanding amount of Exchange Fund Bills and Notes reached HK$1,207.5 billion, and the outstanding amount of other debt securities rose to HK$1,573.3 billion equivalent, the highest recorded level since 2013.

Adoption of the FPS continued to increase in 2022. The number of registrations grew to 11.48 million at the end of 2022 and the average daily turnover for the year rose by 40% from 2021. The increased use of the FPS for settling Government bills, making merchant payments, and topping up Stored Value Facility (SVF) e-wallets or bank accounts, were the key drivers for the continued rise in the transaction volume on top of the steady growth in person-to-person and business payments.

To promote the safety and efficiency of the local retail payment industry, the HKMA oversees six designated retail payment systems (RPSs) and supervises 17 licensed SVFs (four of which are SVFs issued by licensed banks) under the Payment Systems and Stored Value Facilities Ordinance (PSSVFO). During the year, the HKMA continued to facilitate the smooth implementation of the Government's Consumption Voucher Scheme by co-ordinating and promoting dialogues and co-operation between the relevant Government parties and the SVF licensees appointed for the scheme.

In January 2023, the HKMA issued the conclusion to the discussion paper on crypto-assets and stablecoins, summarising the feedback received in relation to the discussion paper and the HKMA's relevant response. The conclusion paper confirmed that the HKMA would take a risk-based and agile approach in regulating stablecoins, and set out the expected regulatory scope and key regulatory requirements as well as next steps.

Internationally, the HKMA is an active member of the central banking community and plays a leadership role in a number of regional and international committees. Since 2018, the HKMA has been serving consecutive terms as the chair of the Working Group on Financial Markets (WGFM) established under the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)[3]. In addition, the HKMA co-chairs the Policy and Standards Group of the Basel Committee on Banking Supervision (Basel Committee), as well as the Non-Bank Monitoring Experts Group and the Financial Innovation Network of the Financial Stability Board (FSB). Within the FSB, the HKMA also leads a team that monitors progress and follows up on supervisory issues associated with financial benchmark transition.

[2] About 99.99% if including downtime caused by external factors.

[3] The EMEAP is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region.

Review of 2022

Global Financial Leaders' Investment Summit

The Global Financial Leaders' Investment Summit takes place on 1–3 November

Following the Financial Secretary's announcement in the 2022–23 Budget, the HKMA organised the Global Financial Leaders' Investment Summit in November. The three-day event was a resounding success that featured 26 prominent financial leaders sharing their unique perspectives and ideas on navigating through economic, financial, technological and geopolitical uncertainties in search of opportunities. It was attended by over 200 participants from about 120 international financial institutions, including some of the world's largest banks, securities firms, asset owners and managers, private equity and venture capital firms, hedge funds and insurers. More than 40 of these institutions were represented by their group chairmen or chief executive officers.

The Summit has sent a powerful message to the world that Hong Kong is back, and enabled global financial leaders to see for themselves the resilience and vibrancy that define Hong Kong, and the opportunities that the city offers to pivot their businesses to the burgeoning Asian markets.

Hong Kong as the dominant gateway to the Mainland and the global offshore renminbi business hub

Hong Kong reinforced its position as a global hub for offshore renminbi business by enhancing offshore liquidity, further strengthening connectivity with the Mainland financial markets and upgrading financial market infrastructure. Renminbi businesses, including bank deposits, trade settlement, payments and offshore bond issuances, continued to witness robust growth during the year.

Encouraging progress and achievements were seen in respect of liquidity enhancement, product development and expansion of the Connect schemes. The results of the 2022 Triennial Survey of Foreign Exchange and Derivatives Market Turnover by the BIS reaffirmed Hong Kong's leading position as a renminbi foreign exchange centre.

- **RMB981.7 billion**
  RMB deposits, including outstanding certificates of deposit, **+4%**
- **RMB1.654 trillion**
  average daily turnover of RMB RTGS system, **+9%**
- **RMB9.3 trillion**
  RMB trade settlement handled by banks in Hong Kong, **+32%**
- **RMB143.4 billion**
  offshore RMB bond issuance, **+31%**
- **70%+**
  of global RMB SWIFT payments
- **US$191.2 billion**
  average daily turnover of RMB foreign exchange transactions in April 2022, **+78%** from April 2019
- **RMB800 billion/HK$940 billion**
  size of currency swap agreement with the PBoC, with the arrangement not subject to renewal and also having the largest size

Northbound Bond Connect continued to serve as a major channel for international investors to invest in the Mainland bond market using market infrastructures and financial services in Hong Kong. Daily turnover under Northbound Bond Connect averaged RMB32.2 billion in 2022 (a 25% increase from 2021) and accounted for 61% of overall trading turnover by foreign investors in the China Interbank Bond Market.

Northbound Bond Connect trading was further facilitated by the introduction of technical enhancements in July, including digitalisation of investors' participation in onshore primary issuance and a reduction in service fees. These market-oriented enhancements improved operational efficiency and lowered trading costs for investors under Northbound Bond Connect.

International Financial Centre

To complement Northbound Bond Connect and facilitate global investors' management of interest rate risks for their bond investments on the Mainland, a new initiative for mutual access between interest rate swap markets in Hong Kong and the Mainland (Swap Connect) was announced in July. With Northbound Trading commencing first in the initial phase, Swap Connect will allow global investors to trade interest rate swap products in the Mainland via an infrastructure link between Hong Kong and the Mainland, thereby strengthening Hong Kong's status as a risk management centre. Preparation for Swap Connect is under way, with a view to launching Northbound Trading as soon as practicable. The HKMA will continue to, in collaboration with relevant authorities and agencies, explore the provision of more diversified risk management tools, including offshore treasury bond futures, to further support global investors' investment in the Mainland bond market.

Southbound Bond Connect has received a positive response and operations have been smooth since its launch in 2021, with transactions covering major bond products tradeable in the Hong Kong market and denominated in multiple currencies. The scheme has contributed to the growth of the offshore renminbi market, including the pickup in renminbi-denominated debt securities issuance. The HKMA is working closely with relevant Mainland authorities to explore possible enhancements under Southbound Bond Connect, with a view to enriching Hong Kong's bond market.

The Cross-boundary WMC has been operating smoothly since its launch in 2021. Up to end-2022, 24 eligible Hong Kong banks had launched Cross-boundary WMC services together with their Mainland partner banks. As of the end of 2022, more than 40,000 individual investors (including Guangdong, Hong Kong and Macao) had participated in the scheme and more than 16,000 cross-boundary remittances (including Guangdong, Hong Kong and Macao) totalling more than RMB2.2 billion had been completed. Taking into account banks' operational experience and market feedback, the HKMA has been liaising closely with Mainland authorities on enhancements to the regulatory framework and service scope, such as expanding the scope of eligible products and improving sales arrangements, among others.

In July, the PBoC and the HKMA announced enhancements to the existing currency swap agreement, upgrading it to a long-standing arrangement with no further need for renewal, and expanding the swap size from RMB500 billion/HK$590 billion to RMB800 billion/HK$940 billion. These enhancements differentiate Hong Kong from other jurisdictions in terms of being the first and only among currency swap counterparties of the PBoC to have a long-standing agreement and also the largest swap size. The enhanced swap arrangement further strengthens Hong Kong's development as a leading offshore renminbi hub and its unique role in the internationalisation of the renminbi. On the back of the aforesaid arrangement, the HKMA has enhanced its Renminbi Liquidity Facility, including increasing the size and streamlining the operation. This will further support market liquidity, paving the way for market players to capitalise on renminbi opportunities, including enhancements and innovations of offshore renminbi products and services. In October, the HKMA extended the designation of nine authorized institutions as Primary Liquidity Providers for the offshore renminbi market in Hong Kong.

During 2022, the offshore renminbi bond market continued to flourish, with issuance size reaching an eight-year high of RMB143.4 billion and wider issuance diversity. In November, the People's Government of Hainan Province and the Shenzhen Municipal People's Government completed their issuance of offshore renminbi local government bonds in Hong Kong. These issuances included blue bonds, green bonds and sustainability bonds, enriching the range of renminbi financial products available in the Hong Kong market.

To further expand the channels for the two-way flow of cross-boundary renminbi funds and develop offshore renminbi products in Hong Kong, a working group comprising the HKMA, the SFC and HKEX completed a feasibility study on promoting the trading of renminbi-denominated equity securities in Hong Kong, and made recommendations for implementation, including introducing a DCMM regime to enhance the trading mechanism of Hong Kong dollar and renminbi dual-counter stocks in Hong Kong, and broadening the scope of Southbound Trading of Stock Connect to include renminbi counters. The working group has been taking forward the necessary preparation work, with a view to launching the DCMM regime within the first half of 2023. Around 20 major listed issuers have indicated their interest in setting up renminbi trading counters after the introduction of the DCMM scheme.

Enhancing financial platform competitiveness

Hong Kong's bond market development

Hong Kong as an international bond issuance hub

According to the International Capital Market Association, Hong Kong was, for seven consecutive years, the largest centre for arranging international bond issuance by Asian issuers. In 2022, issuance volume amounted to over US$100 billion, equivalent to around one-third of the market. Hong Kong was also by far the most important location for arranging debut issuance in the region, with a 82% market share.

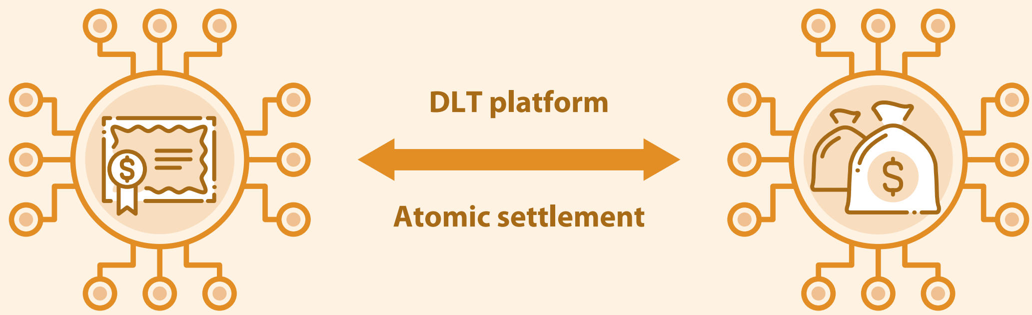
In August, the Steering Committee on Bond Market Development in Hong Kong chaired by the Financial Secretary published a report, which laid out recommendations along three strategic directions: (i) leveraging the opportunities presented by the Mainland market and new global trends; (ii) upgrading infrastructure to attract business and resources; and (iii) promoting social and financial inclusion and facilitating participation of retail investors. The HKMA is working with the Government and other financial regulators in implementing the recommendations.

Tokenised government green bond

In February 2023, the HKMA assisted the Government to issue the world's first tokenised government green bond under the Government Green Bond Programme (the Tokenised Green Bond). The use of distributed ledger technology (DLT) was successfully applied to the primary issuance and settlement processes, and will be tested out in secondary trading, asset servicing and redemption during the one-year bond tenor.

The pilot issuance has proved the compatibility of Hong Kong's legal and regulatory environment with tokenised bonds, and achieved certain major breakthroughs vis-à-vis the traditional bond issuance process (Figure A).

Figure A **Pilot Tokenised Green Bond**



Tokenised Green Bond

HKD cash token (akin to wholesale central bank digital currency (CBDC))

- **Atomic delivery-versus-payment (DvP) settlement** enabled by on-chain tokens representing the bond leg (Tokenised Green Bond) and the cash leg (HKD cash token)
- **Streamlined end-to-end issuance process** and shortened settlement cycle from T+7 to T+1
- **First test case of wholesale HKD CBDC in bond settlement,** paving the way for cross-border securities settlement as the mBridge initiative continues to develop

International Financial Centre

Government Bond Programme

During the year, the HKMA arranged 14 tenders of institutional government bonds with a total nominal value of HK$21.8 billion, including the inaugural issuance of HK$0.5 billion of 20-year Hong Kong Dollar Government Bonds to further facilitate the formation of a local yield curve. As at the end of 2022, the total nominal amount of outstanding institutional bonds was HK$95.3 billion.

On the retail front, the HKMA arranged the issuance of Silver Bond[4] in September with an issuance size of HK$45 billion to Hong Kong senior residents, with a tenor of three years. The Silver Bond issuance attracted more than 289,600 applications, with subscription amounts exceeding HK$62.4 billion. The total nominal amount of retail bonds outstanding as at the end of 2022 was HK$123.3 billion.

Government Green Bond Programme

Since the launch of the Government Green Bond Programme in 2018, a total of close to US$16 billion equivalent of green bonds, comprising institutional and retail bonds, have been issued. The HKMA assisted the Government to issue its inaugural retail green bond as well as around US$5.85 billion equivalent of institutional green bonds in the 2022–23 financial year. More details can be found in the *Green and Sustainable Finance* chapter of the *Sustainability Report 2022*.

Hong Kong as a green and sustainable finance hub

In recent years, the HKMA has continued to take forward various initiatives to further enhance Hong Kong's position as a regional green and sustainable finance hub. See the *Green and Sustainable Finance* chapter of the *Sustainability Report 2022* for more details.

Asset and wealth management

Hong Kong is Asia's largest private equity hub outside the Mainland, with around US$208 billion in capital under management and around 630 private equity firms as of December. The HKMA continued to work with stakeholders to enhance Hong Kong's private equity platform. By the end of December 2022, 577 Limited Partnership Funds[5] had been established.

With its unique advantage as the dominant gateway to the Mainland and its unparalleled access to investment opportunities, Hong Kong is also well positioned as a family office hub in the region. The HKMA works with other Government agencies and the financial industry to develop a facilitating environment for family offices to set up and operate in Hong Kong. Recent initiatives include the introduction of legislative amendment to provide more facilitative tax arrangement for family offices operating in Hong Kong.

Hong Kong as a hub for corporate treasury centres

Hong Kong's role as a gateway to the Mainland and its wide-ranging strengths as an international financial centre provide corporates with unparalleled access to talent as well as financial and professional services. Since the introduction of the Corporate Treasury Centre tax regime in June 2016, the HKMA has been actively promoting and engaging with the industry to raise awareness of Hong Kong's value proposition as a Corporate Treasury Centre hub, resulting in a growing number of multinational and Mainland corporates setting up Corporate Treasury Centres in Hong Kong.

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4 First introduced in 2016, Silver Bond aimed to provide steady returns to Hong Kong residents aged 65 or above. In 2021, the minimum eligible age for subscription of Silver Bond was lowered to 60. Silver Bond is a three-year bond whose semi-annual interest payments will be either the Fixed Rate i.e. the interest rate floor set by the Government, or the Floating Rate, i.e. an interest rate linked to the average annual inflation rate, whichever is higher.

5 The Limited Partnership Fund regime and the associated re-domiciliation mechanism were introduced in August 2020 and November 2021 respectively.

International Financial Centre

Hong Kong as a financing hub for infrastructure investments

The HKMA Infrastructure Financing Facilitation Office serves as an important platform to facilitate infrastructure investments by leveraging Hong Kong's status as an international financial centre. The office has around 100 international partners[6], including key industry stakeholders such as multilateral financial agencies and development banks, project developers and operators, public sector entities and professional service firms.

Outreach initiatives

Throughout the year, the HKMA proactively engages with industry stakeholders to reach out to the broader financial community locally and overseas, so that decision makers are better informed about the resilience of Hong Kong's financial system and the growth opportunities it presents.

In 2022, through 32 webinars, speaking engagements and individual engagements, the HKMA reached out to local and international audiences, including nearly 5,000 senior executives and professionals from central banks, institutional investors, pension funds, insurance companies, corporates, ultra-high-net-worth individuals and family offices.

Market outreach event participant analysis

Events Hosted

32

Including:
- Summit and dialogues
- Conferences and forums
- Roundtables and meetings
- Webinars

Audience Reached

nearly 5,000

Channelled through:
- Institutional banks
- Industry associations
- Chambers of commerce
- Individual engagements

Sectors Covered

15

Including:
- Banks
- Asset managers/Hedge funds/ Private equity funds
- Asset owners
- Professional service providers
- Corporates

6 Full list of Infrastructure Financing Facilitation Office partners is available at the HKMA website (https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/hkma-infrastructure-financing-facilitation-office/iffo-partners/)

International Financial Centre

Hong Kong's treasury markets

The HKMA participates actively in international discussions and closely works with the Treasury Markets Association (TMA) to enhance the professionalism of Hong Kong's treasury market participants and prepare industry stakeholders for international developments.

Through participation in the Global Foreign Exchange Committee, the HKMA and the TMA contributed to the continuing review of the Foreign Exchange Global Code. Having regard to the publication of the updated Code in 2021, the HKMA issued the renewed Statement of Commitment to the Foreign Exchange Global Code in July 2022, demonstrating its commitment to adhering to the Code when acting as a market participant in the foreign exchange market. The HKMA, the TMA and other industry associations joined hands to raise market awareness of the discontinuation of the London Interbank Offered Rate (LIBOR) and helped the banking and corporate sectors continue to transition away from LIBOR into the respective alternative reference rates.

The HKMA also worked with the TMA in engaging local market participants to support the development of the Hong Kong Dollar Overnight Index Average (HONIA)-linked market. These efforts included the continuing issuance of the HONIA-indexed floating rate note under the Government Bond Programme.

Over-the-counter derivatives market

The HKMA closely works with the SFC to develop detailed rules for implementing the regulatory regime for the over-the-counter (OTC) derivatives market in Hong Kong to monitor systemic risk and enhance transparency in the OTC derivatives market. Different aspects of the regulatory regime have been introduced in phases[7]. Following public consultations in 2022 on further enhancements to the regime, updated lists of financial service providers and new calculation periods under the mandatory clearing regime came into effect in January and March 2023 respectively.

The HKMA participated in several international forums and the OTC derivatives working groups established under the FSB, contributing to the relevant international initiatives and monitoring international regulatory developments closely.

Hong Kong's credit ratings

The HKMA maintains close dialogue with international credit rating agencies to help support a balanced and objective assessment of Hong Kong's credit strength and discuss these agencies' concerns about the rating outlook. During the year, S&P Global Ratings, Moody's Investors Service, and Fitch Ratings maintained Hong Kong's rating at AA+, Aa3 and AA- respectively.

Hong Kong as a fintech hub in Asia

Fintech adoption in the banking sector

As part of the "All banks go fintech" focus area of the HKMA's "Fintech 2025" strategy, the HKMA completed the Tech Baseline Assessment in 2022, which took stock of banks' current and planned adoption of fintech over the coming years, and assessed whether there are any areas that would benefit from the HKMA's support. The results indicated extensive and growing adoption of fintech by the Hong Kong banking sector.

During the year, the HKMA continued to roll out initiatives under its two-year roadmap to promote Regtech adoption by banks in Hong Kong, and made good progress in building an end-to-end digital supervisory platform to improve the efficiency and effectiveness of its supervisory processes. See page 90 of the *Banking Stability* chapter for more details.

Wholesale Central Bank Digital Currency

As a collaborative effort between the HKMA, the Bank of Thailand, the Digital Currency Institute of the PBoC, the Central Bank of the United Arab Emirates, and the Bank for International Settlements (BIS) Innovation Hub Centre in Hong Kong, the Multiple Central Bank Digital Currency Bridge (mBridge) project went beyond experimentation and entered the pilot phase in the third quarter of 2022. During the six-week pilot, 20 banks in four jurisdictions used the mBridge platform to conduct over 160 payment and foreign exchange transactions totalling more than HK$171 million. This was among the first multi-CBDC projects to settle real-value, cross-border transactions on behalf of corporates. A report titled *Project mBridge: Connecting economies through CBDC* was published in October to deliver the results of the pilot and the key lessons learnt (Figure 1).

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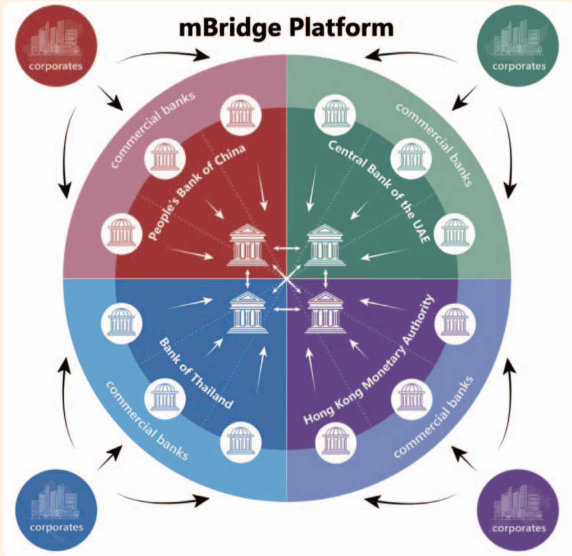
7 The first phase of mandatory clearing and the second phase of mandatory reporting took effect in September 2016 and July 2017 respectively.

Figure 1 Joint report, *Project mBridge: Connecting economies through CBDC*

Published by the HKMA, together with the participating authorities and the BIS Innovation Hub Centre in Hong Kong



The six-week pilot represents the largest cross-border CBDC pilot to date, in which 20 banks in four jurisdictions use the mBridge platform to conduct payment and foreign exchange transactions

The panel session on mBridge at Hong Kong FinTech Week 2022

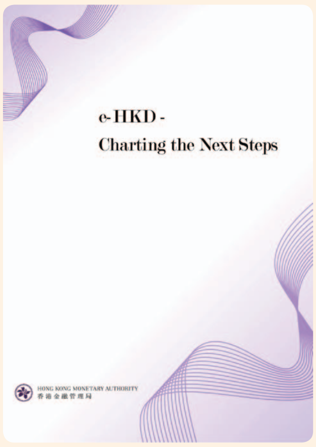
Retail Central Bank Digital Currency

To strengthen its research work on CBDC, the HKMA continued its study on the prospect of issuing retail CBDC in Hong Kong, i.e. e-HKD, covering both technical and policy considerations. Following the release of a technical whitepaper in 2021, the HKMA published a discussion paper in April 2022 to discuss the potential benefits and challenges brought by retail CBDC, various design considerations as well as use cases of e-HKD. After two rounds of market consultation, the HKMA published a position paper in September to set out its policy stance on e-HKD and outline its next steps (Figure 2). It also announced that it would start paving the way for any possible e-HKD implementation in a prudent manner by adopting a three-rail approach. Separately, in June, the HKMA announced Project Sela, a joint research effort with the Bank of Israel and the BIS Innovation Hub Centre in Hong Kong, to take a deep dive into cybersecurity issues in the context of retail CBDC.

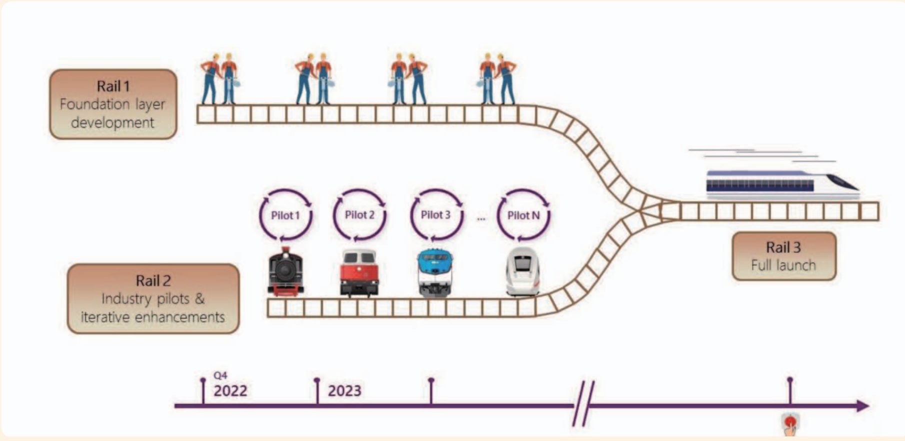
Discussion paper titled e-HKD: A Policy and Design Perspective

International Financial Centre

Figure 2 **Position paper, *e-HKD: Charting the Next Steps***



The HKMA sets out its policy stance on e-HKD in the paper



The HKMA adopts a three-rail approach to start paving the way for possible implementation of e-HKD in the future

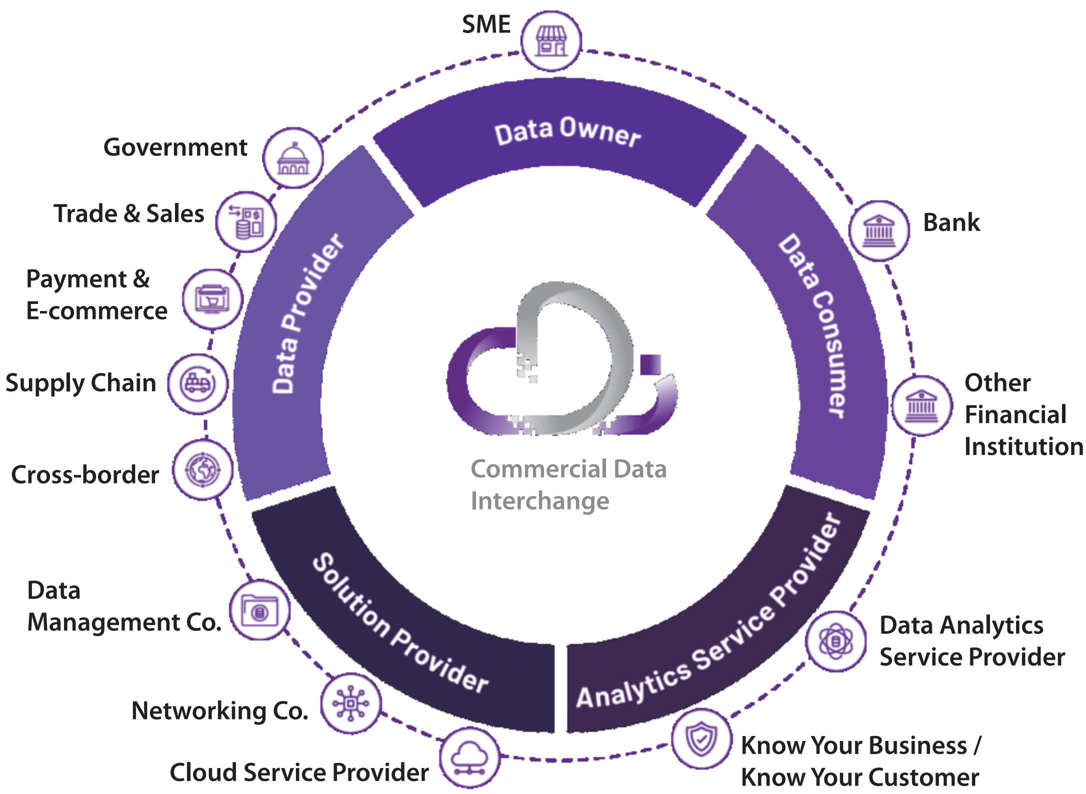
The panel session on retail CBDC at Hong Kong FinTech Week 2022

Meanwhile, the HKMA continued to work with the Digital Currency Institute of the PBoC on the technical pilot testing of using digital renminbi (e-CNY) for making cross-boundary payments in Hong Kong. The test included the use of the FPS to top up e-CNY wallets and involved the participation of more Hong Kong banks. This will help promote interconnection in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA) and bring greater convenience to Hong Kong and Mainland tourists by further improving the efficiency and user experience of cross-boundary payments.

Commercial Data Interchange

In October, the HKMA announced the official launch of CDI. As a consent-based financial data infrastructure, CDI aims to enhance data sharing by facilitating financial institutions' retrieval of enterprises' commercial data, in particular the data of small and medium-sized enterprises (SMEs), from both public and private data providers. As at end-December, more than 1,000 SME loans, amounting to over HK$1.9 billion, had been approved by the participating banks under the facilitation of CDI. The proven usefulness of alternative data attracted the participation of 23 banks with SME business and 10 data providers. In particular, six key data providers with substantial SME data were ready to provide consented access for banks in the production environment, covering e-trade declaration, e-commerce, supply chain, payment and credit reference data. To ensure that all CDI participants follow a common set of rules for proper, fair and secure exchange of commercial data, the CDI Framework detailing the governance model and structure was also launched.

SME owners discuss how they have benefitted from the use of alternative data shared via CDI



With the official launch of CDI, all stakeholders work together to create a coherent landscape for data sharing

International Financial Centre

Talent development

To expand the fintech talent pool, the HKMA continued to run the Fintech Career Accelerator Scheme (FCAS) in collaboration with its strategic partners to nurture young talent at various stages of their career development. A total of 125 students benefitted from the scheme in 2022. In October, through partnering with the Insurance Authority, the scheme was further enhanced to FCAS 3.0 and extended to the insurance sector. Separately, the Industry Project Masters Network (IPMN) scheme was officially launched in September. Under the "Fintech 2025" strategy, the IPMN scheme aims to groom fintech talent by providing opportunities for postgraduate students to work on real-life fintech projects and gain hands-on experience and skills. As at March 2023, more than 130 students, 30 industry mentors, and over 30 banks and SVF operators had taken part in the IPMN scheme.

Participating interns of the FCAS at Hong Kong FinTech Week 2022

Fintech Sandbox

The Fintech Supervisory Sandbox (FSS) continued to be extensively used by authorized institutions during the year. As of end-December 2022, a total of 274 pilot trials of fintech initiatives had been allowed in the FSS since its launch in 2016, compared with 234 as of end-2021. As of end-December 2022, the HKMA had also received a total of 755 requests to access the FSS Chatroom, with more than 61% of requests made by technology firms (tech firms). Since its introduction in 2017, the Chatroom has provided useful supervisory feedback at an early stage of fintech projects.

In collaboration with Cyberport, the HKMA launched the FSS 3.1 Pilot in October to provide development-stage funding support, with a view to promoting commercialisation and wider adoption of the successful projects under the Government's FinTech Proof-of-Concept Subsidy Scheme.

Greater Bay Area fintech pilot trial facility

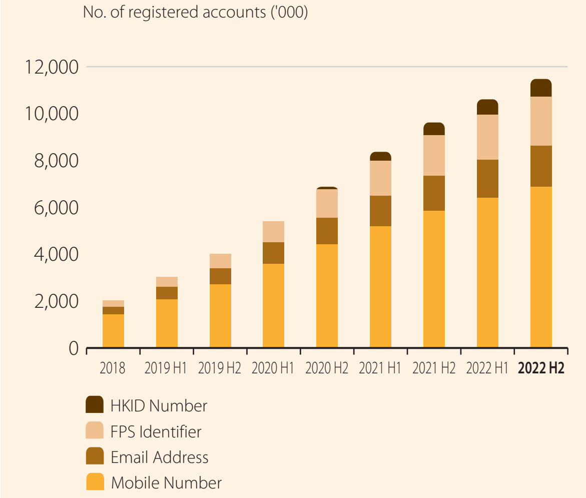
The HKMA and the PBoC jointly rolled out in February a "one-stop platform" for financial institutions and tech firms to conduct pilot trials of cross-boundary fintech initiatives in GBA cities. During the year, two banks successfully completed trials of their cross-boundary fintech products through the one-stop platform and began preparing for the launch of their products.

International Financial Centre

Faster Payment System

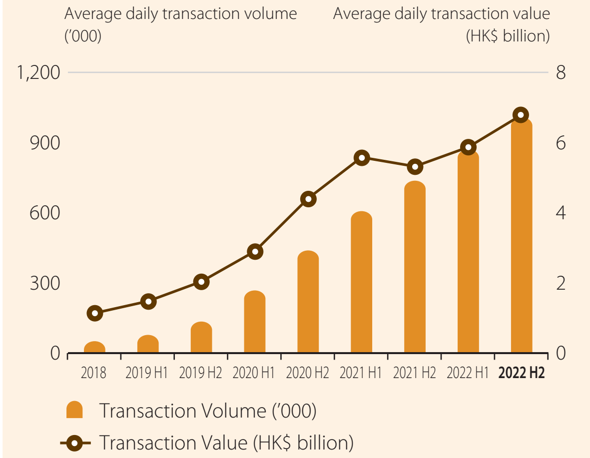
Since the launch of the FPS in September 2018, the number of registrations has grown steadily. As of 31 December 2022, the FPS had 11.48 million registrations (Chart 1), up 19% year on year.

Chart 1 Registration of FPS proxy identifiers



The adoption and turnover of the FPS continued to grow alongside an increasing use of electronic payment instruments (Chart 2). The average daily turnover exceeded 940,000 real-time transactions (worth HK$6.3 billion and RMB205 million) in 2022, 40% higher than that in 2021. The increased use of the FPS has also been spurred by a steady growth of adoption and a gradual extension in the scope of usage, from primarily person-to-person payments to bill, retail and business payments.

Chart 2 Average daily turnover of Hong Kong dollar real-time payments



The HKMA has been working together with various Government departments and the banking industry to expand the usage of the FPS. The general public can now pay taxes, rates and Government rent, and water charges through the FPS, and scan an FPS QR code to make payments at designated counters and self-help kiosks of Government departments. In addition, FPS services have been extended to online payment of Government services since 19 December 2022. The public can easily scan FPS QR codes displayed on concerned web pages, or use the FPS Web-to-App payment function on mobile devices. Four Government departments were first to provide the FPS online payment service, and more Government bureaux are expected to adopt the service in 2023. Some public bodies have also adopted the FPS App-to-App payment function to allow the general public to use the FPS to make payments for rental of public housing and shop, public hospital fees and parking meter fees, etc. The HKMA will continue to assist the Government to adopt the FPS in other use cases.

International Financial Centre

In another positive development, more merchants have adopted the FPS to support their business operations. Merchant payments surged to an average of 147,000 transactions[8] per day in 2022, representing a 28% increase over 2021. The FPS is commonly used to pay bills, make in-app direct debits, and complete App-to-App or Web-to-App and other online purchases. The increasing popularity of SVF e-wallets also contributed to more account top-up transactions via the FPS. The average daily number of top-up transactions rose in 2022 by 87% over 2021.

To drive this momentum further, the HKMA encouraged the banking industry to offer simple, easy-to-use and affordable FPS payment solutions to microbusinesses to help small merchants embrace the era of e-payment, which is also consistent with one of the HKMA's goals of promoting financial inclusion.

To provide a better customer experience, the system functionality of the FPS was improved to introduce a feedback mechanism on name checking results to mitigate the risk of mis-transfer of funds while at the same time enhancing customer protection. This also allows customers to receive notifications on the credit transfer status, including completion of fund transfer or the reason for transfer failure.

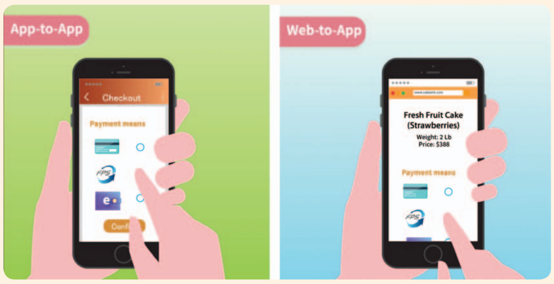
The HKMA continued to promote the use of the FPS throughout 2022. An online video was launched to further raise public awareness on the FPS and suggested smart tips for using the FPS through various social media channels. Alongside the Government's adoption of the Web-to-App FPS payment function and support for this function by more than 20 banks, the HKMA produced an animated video to explain the features and benefits of the App-to-App and Web-to-App FPS payment functions to the general public and merchants (Figure 3). Together with the banking industry, efforts were also made to promote giving electronic "lai-sees" (e-laisees) via the FPS in order to go green. Banks and SVFs also developed innovative user interfaces to facilitate the giving of e-laisees and offered incentives to encourage their customers to do so.

Figure 3 Raising public awareness on the FPS

Early 2022

An online video explaining the benefits and features of the FPS

December 2022

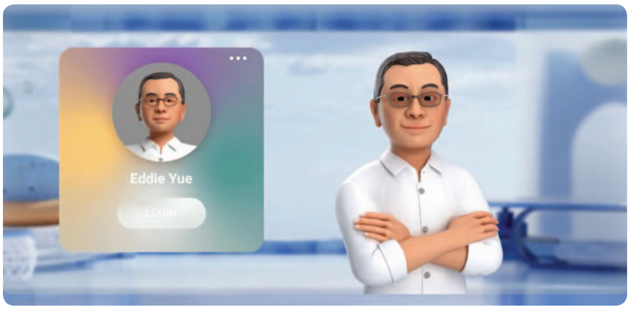


An animated video explaining the App-to-App and Web-to-App FPS payment functions to the general public and merchants

8 The figure includes payments to the Government via the FPS.

Open Application Programming Interface

The HKMA successfully launched all four phases of implementation as set out in the Open Application Programming Interface (Open API) Framework for the Hong Kong Banking Sector published in 2018, with a view to facilitating collaboration between the banking sector and third-party service providers (TSPs) in a secure and controllable environment, thereby promoting the development of innovative banking products and enhancing customer experience. Throughout the year, the HKMA continued to facilitate the development and adoption of Open API. A total of 28 participating retail banks progressively offered various Open API functions, covering product information, customer acquisition, account information and transactions. The number of registered TSPs using banks' Open API demonstrated steady growth. As at December, more than 1,300 registrations from these TSPs had been recorded, representing year-on-year growth of about 15%. Over the same period, the number of monthly banking product applications and payment transactions that leveraged banks' Open API witnessed a 33-fold increase to 689,000.



Mr Eddie Yue, Chief Executive of HKMA, delivers the opening keynote at Hong Kong FinTech Week 2022, appearing as an avatar before meeting the audience on stage at the event

Outreach and collaboration

Since its establishment in March 2016, the FFO has played a crucial role in reaching out to and liaising with fintech market players to facilitate the exchange of ideas among stakeholders. During the year, the FFO organised four events, including panel discussions during Hong Kong FinTech Week 2022. The events and FinTech Week attracted over 30,000 attendees and more than five million online views. FFO representatives also spoke at 36 fintech-related events and held 1,020 meetings with other regulatory authorities, industry organisations, financial institutions, technology firms and startups, and handled 106 enquiries from market participants.

Mr Howard Lee, Deputy Chief Executive of HKMA, conducts a fireside chat on central banks and innovation at the event

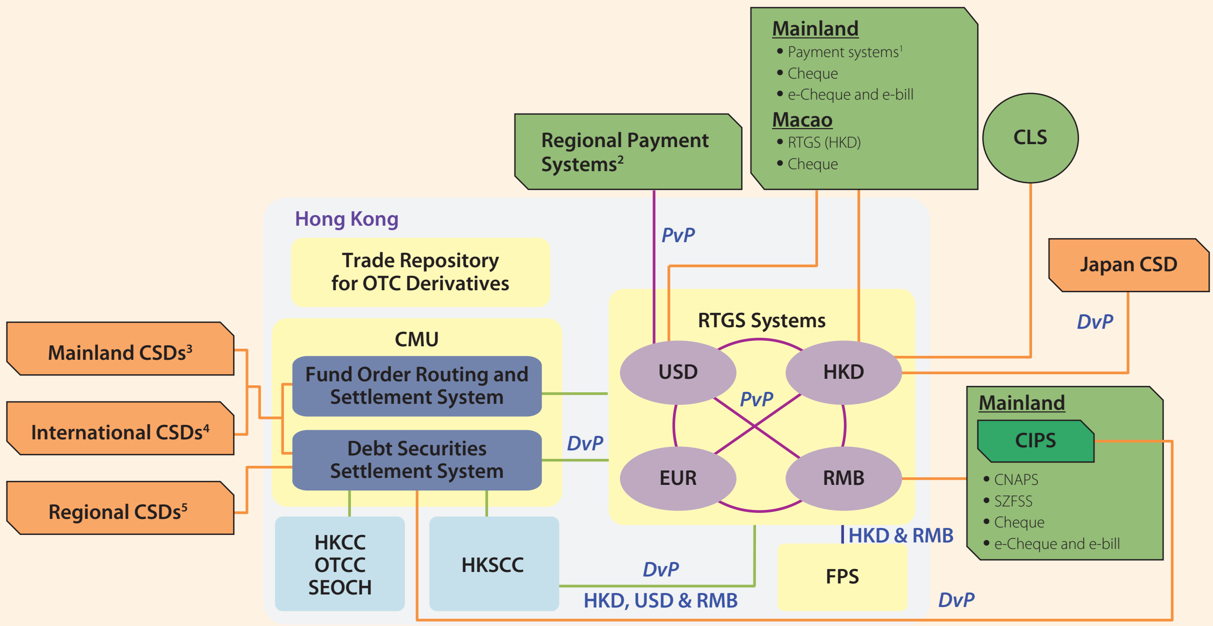
Throughout the year, the HKMA also made considerable efforts to further strengthen cross-border fintech collaboration, including by regularly attending summits and conferences hosted by other jurisdictions.

International Financial Centre

Hong Kong's financial infrastructure

The multi-currency, multi-dimensional payment and settlement platform of the HKMA, with extensive domestic and overseas system linkages, continued to operate smoothly and efficiently during the year, and has helped maintain Hong Kong as a regional hub for payment and settlement of funds and securities (Chart 3).

Chart 3 Hong Kong's multi-currency financial infrastructure



Note 1: CDFCPS, RTGS links with Shenzhen and Guangdong
Note 2: PvP links with Malaysia, Thailand and Indonesia
Note 3: Cross-boundary links with CCDC and SHCH (Bond Connect) and CSDC (Mutual Recognition of Funds)
Note 4: Cross-border links with Clearstream and Euroclear
Note 5: Cross-border links with Austraclear (Australia), KSD (South Korea) and TDCC (Taiwan)

CCDC – China Central Depository & Clearing Co., Ltd. (settlement system for fixed income securities in Mainland)
CDFCPS – China's Domestic Foreign Currency Payment System (RTGS system for foreign currency payment in Mainland)
CIPS – Cross-Border Interbank Payment System
CLS – Continuous Linked Settlement (global multicurrency cash settlement system)
CMU – Central Moneymarkets Unit (settlement system for debt securities)
CNAPS – China National Advanced Payment System (RMB RTGS system in Mainland)
CSDC – China Securities Depository and Clearing Corporation Limited
FPS – Faster Payment System
HKCC – HKFE Clearing Corp Ltd (central counterparty providing clearing and settlement for futures)
HKSCC – HK Securities Clearing Co Ltd (central counterparty providing clearing and settlement for securities)
Japan CSD (BOJ-NET) – Bank of Japan Financial Network System for Japanese Government Bond Services
KSD – Korean Securities Depository (Korea's central securities depository)
OTCC – OTC Clearing Hong Kong Limited (central counterparty providing clearing and settlement for OTC derivatives)
RTGS – Real Time Gross Settlement
SEOCH – SEHK Options Clearing House Ltd (central counterparty providing clearing and settlement for options)
SHCH – Shanghai Clearing House (settlement system for fixed income securities in Mainland)
SZFSS – Shenzhen Financial Settlement System
TDCC – Taiwan Depository and Clearing Corporation (Taiwan's securities settlement system)

DvP – Delivery-versus-payment
PvP – Payment-versus-payment

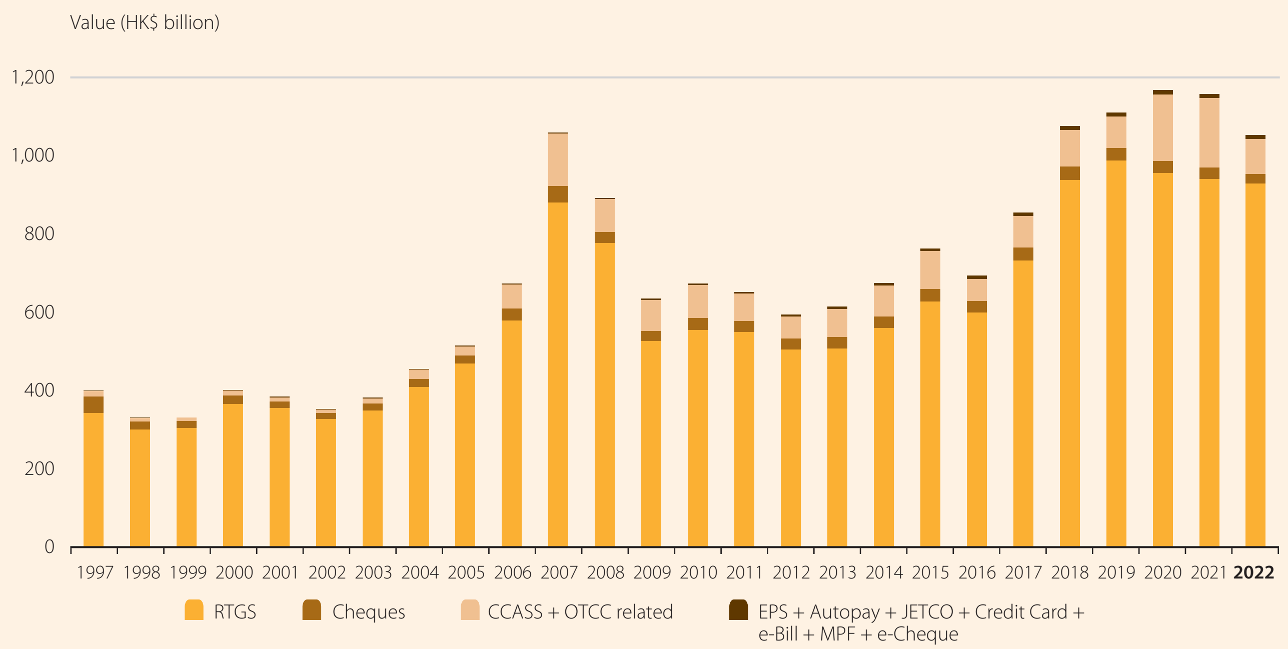
Hong Kong dollar RTGS system

The Hong Kong dollar Clearing House Automated Transfer System (CHATS), which operates on an RTGS basis, is responsible for clearing Hong Kong dollar interbank payments. It continued to run smoothly and efficiently in 2022, with a daily average transaction value of HK$928.1 billion (28,529 items), compared with HK$939.7 billion (30,593 items) in 2021.

In addition to settling large-value payments, CHATS handles daily bulk clearings and settlement of stock market transactions, Mandatory Provident Fund (MPF) schemes' switching transactions, credit card transactions, cheques, small-value bulk electronic payment items (EPS, auto-credit and auto-debit transactions) and automated teller machine transfers (Chart 4).

The FPS serves as an extension of Hong Kong dollar CHATS to enable the public to make instant retail fund transfers and payments across different banks and SVFs on a round-the-clock basis. It has been operating smoothly since its inception in September 2018, with a daily average real-time payment transaction value of HK$6.3 billion (940,253 items) in 2022.

Chart 4 **Hong Kong dollar RTGS system average daily turnover**



International Financial Centre

RTGS systems for other currencies in Hong Kong

The renminbi, US dollar and euro RTGS systems all operated smoothly during 2022. The cut-off time of the renminbi RTGS system was extended in phases since June 2012 from 6:30 p.m. to 5:00 a.m. the next day (Hong Kong time), providing a total of 20.5 hours for same-day value payments. The extension gives financial institutions around the world a much longer operating window to settle offshore and cross-boundary renminbi payments through Hong Kong's infrastructure. The average daily value of Mainland-Hong Kong cross-boundary renminbi payments amounted to around RMB349 billion in 2022, accounting for 21% of the total turnover.

The average daily turnover and other details of the RTGS systems for other currencies are set out in Charts 5–7 and Table 1.

Chart 5 Renminbi RTGS system average daily turnover

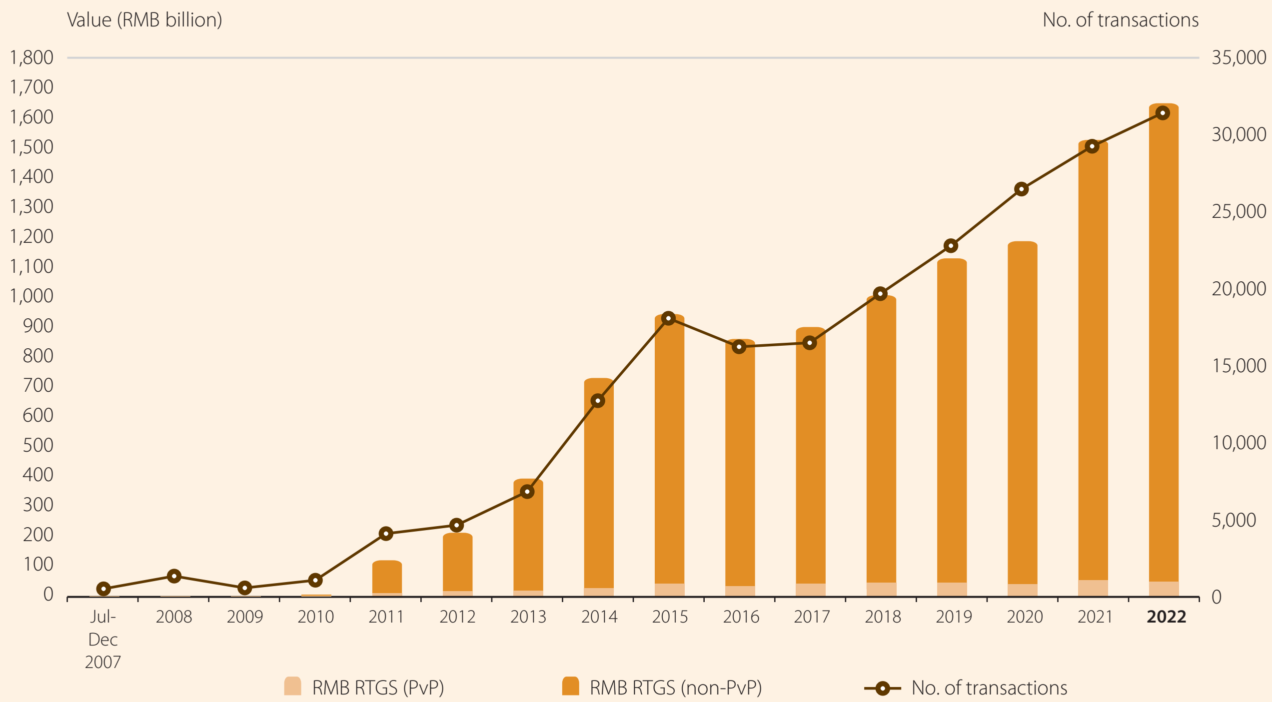


Chart 6 US dollar RTGS system average daily turnover

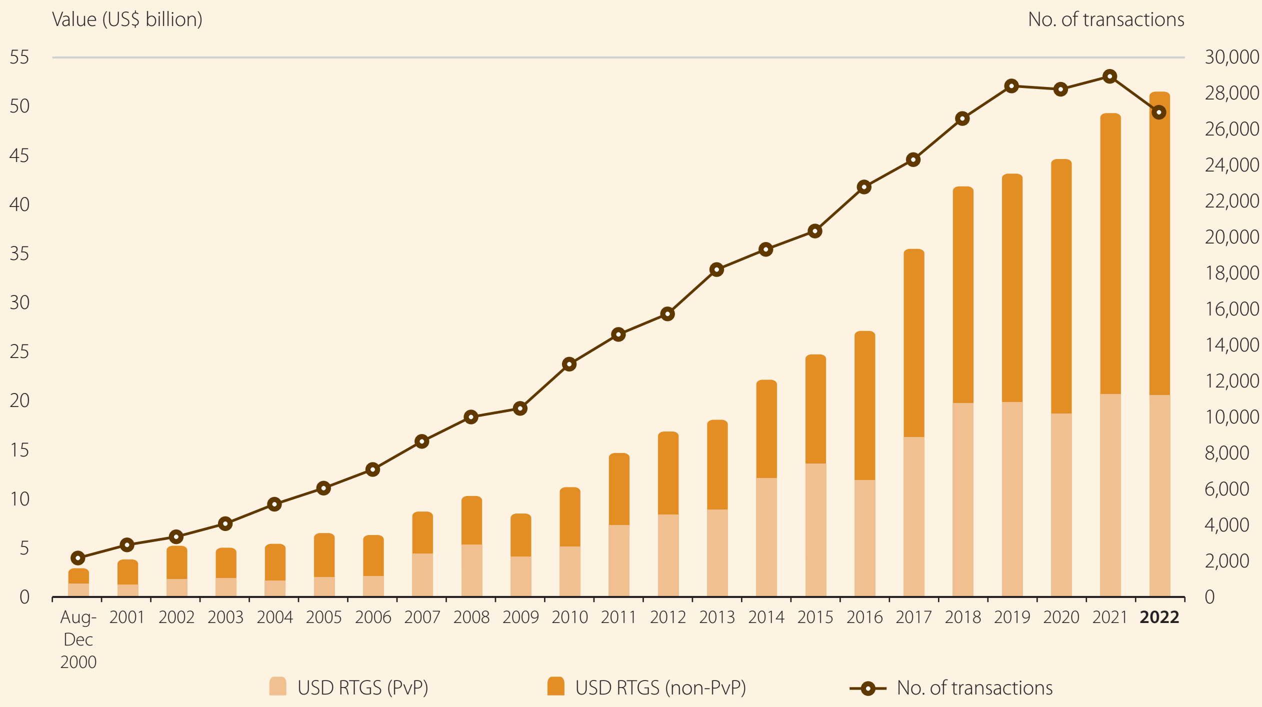
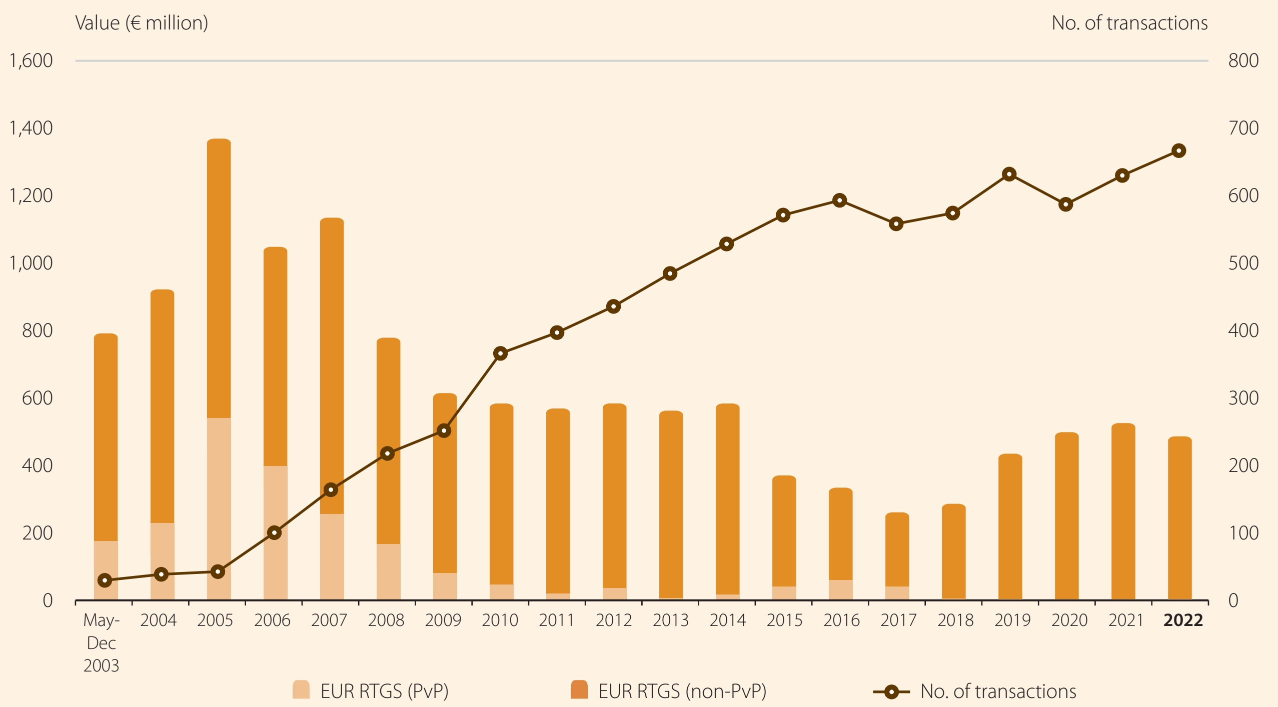


Chart 7 Euro RTGS system average daily turnover



International Financial Centre

Table 1 RTGS systems for other currencies

RTGS systems	Launch date	Settlement institution or Clearing Bank	Number of participants at the end of 2022	Average daily turnover in 2022	Average daily transactions in 2022
Renminbi RTGS system	June 2007	Bank of China (Hong Kong) Limited	Direct: 211	RMB1,654.0 billion	31,481
US dollar RTGS system	August 2000	The Hongkong and Shanghai Banking Corporation Limited	Direct: 113 Indirect: 97	US$51.7 billion	27,004
Euro RTGS system	April 2003	Standard Chartered Bank (Hong Kong) Limited	Direct: 37 Indirect: 18	€487 million	668

Like the Hong Kong dollar FPS, the renminbi FPS (as an extension of renminbi CHATS) has been operating smoothly since inception in September 2018, with a daily average real-time payment transaction value of RMB205 million (938 items) in 2022.

Payment-versus-payment

Payment-versus-payment (PvP) is a settlement mechanism for foreign exchange transactions, ensuring payments involving two currencies are settled simultaneously. In Hong Kong, six cross-currency PvP links have been established among the Hong Kong dollar, renminbi, US dollar and euro RTGS systems.

Hong Kong's US dollar RTGS system has also established three cross-border PvP links, with Malaysia's ringgit RTGS system in 2006, Indonesia's rupiah RTGS system in 2010 and Thailand's baht RTGS system in 2014. PvP greatly improves settlement efficiency and eliminates settlement risk arising from time lags in settlements and time zone differences, known as Herstatt risk. In 2022, the transaction values of Hong Kong dollar, renminbi, US dollar and euro-related PvP transactions amounted to approximately HK$12,714 billion, RMB11,392 billion, US$4,820 billion and €6.5 million respectively.

To further promote PvP adoption, the PvP settlement mechanism will be enhanced to enable US dollar-renminbi foreign exchange transactions to be settled on a multilateral netting basis as scheduled on CHATS, apart from the current gross mode. This enhancement to be launched in 2023 will provide CHATS members with a means to net their funding obligation for the aforementioned PvP transactions, enabling them to manage their liquidity and foreign exchange settlement risk with greater ease.

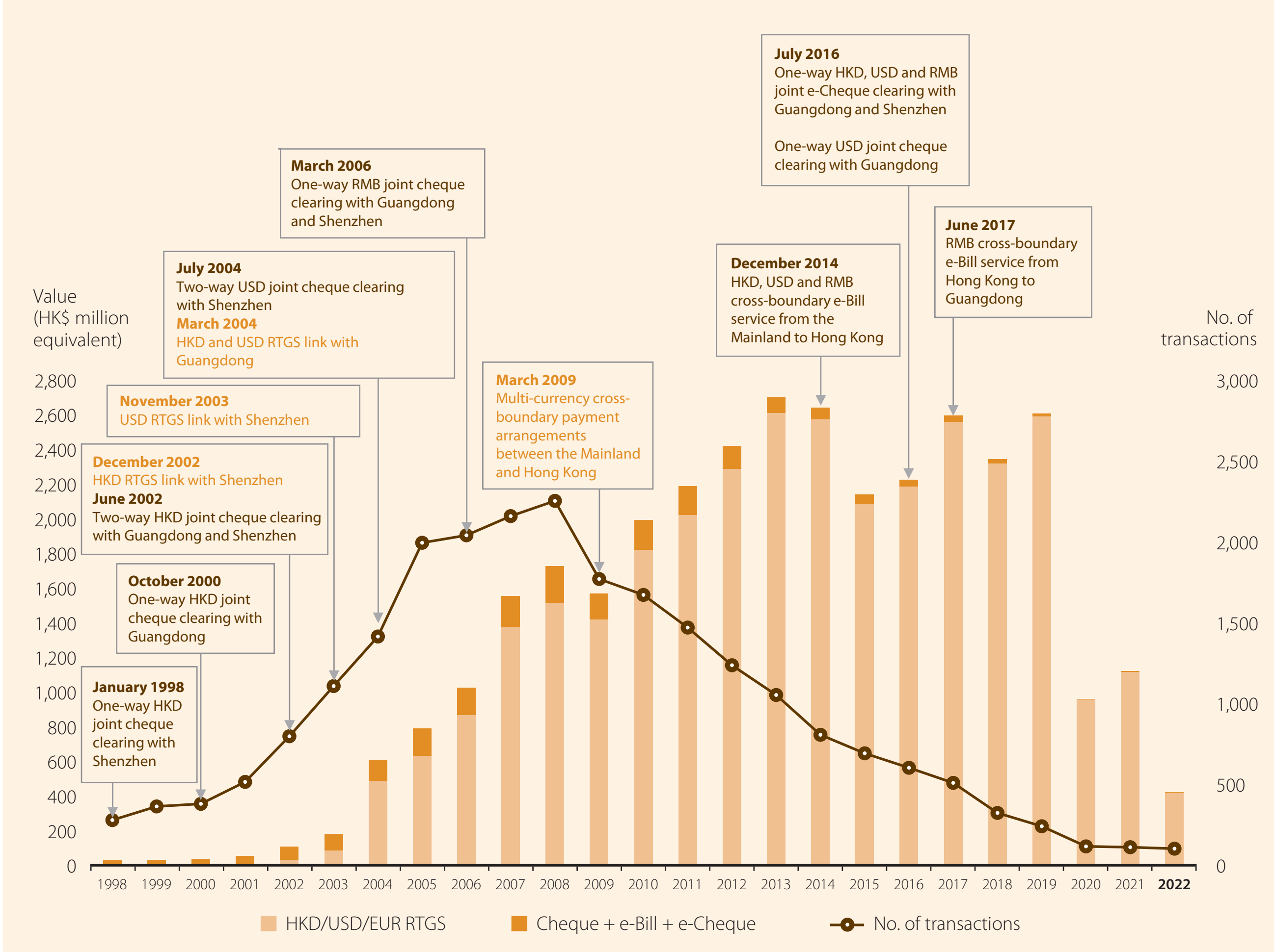
Payment links with the Mainland

The HKMA works closely with Mainland authorities to provide efficient cross-boundary payment links (Chart 8). In 2022, the average daily turnover of various system links, including RTGS cross-boundary links with Mainland's Domestic Foreign Currency Payment Systems, recorded a total value equivalent to around HK$0.4 billion. The Hong Kong dollar and US dollar RTGS system links with Shenzhen and Guangdong handled more than 7,000 transactions, with a total value equivalent to HK$63.8 billion.

The joint cheque-clearing facilities provided a clearing service for cheques drawn on banks in Hong Kong and presented in Shenzhen and Guangdong. In 2022, such facilities processed about 8,800 Hong Kong dollar, renminbi and US dollar cheques, with a total value equivalent to around HK$0.7 billion.

International Financial Centre

Chart 8 Average daily turnover in cross-boundary arrangements with the Mainland



Payment links with Macao

The one-way joint clearing facility between Hong Kong and Macao was launched in 2007 for Hong Kong dollar cheques, and in 2008 for US dollar cheques. In 2022, Hong Kong dollar cheques and US dollar cheques amounting to about HK$6 billion and about US$24 million respectively were cleared. To foster financial co-operation between Hong Kong and Macao and facilitate Hong Kong dollar payment flow, a new service called the "HKD RTGS linkage between Hong Kong and Macao", which links the Hong Kong dollar CHATS in Hong Kong and the Hong Kong dollar RTGS system in Macao, was launched on 31 October.

International Financial Centre

Debt securities settlement system

The CMU provides an efficient, multi-currency clearing, settlement and depository service. Through the CMU's linkages with international and regional central securities depositories (CSDs), investors outside Hong Kong can hold and settle securities lodged with the CMU, while Hong Kong investors can hold and settle foreign securities held with CSDs outside Hong Kong. In 2022, the CMU processed an average daily value of HK$23.9 billion in 213 secondary market transactions (Chart 9). The outstanding amount of the debt securities lodged with the CMU at the end of the year reached a 10-year record high, with the outstanding amount of Exchange Fund Bills and Notes, Government bonds and debt securities issued by the public and private sectors standing at HK$1,207.5 billion, HK$266.6 billion and HK$1,306.8 billion equivalent respectively (Chart 10).

During 2022, the CMU introduced the Collateralised Lending Service to facilitate the primary issuance of bonds lodged with the CMU. The service is free of charge for intraday lending and covers the renminbi, HK dollar, US dollar and euro in the form of a repurchase (repo) arrangement, with a borrowing limit equivalent to the size of the primary bond issuance. This service has successfully assisted member institutions to obtain intraday liquidity support and to mitigate funding costs during primary bond issuance.

In addition, a new CMU website (https://www.cmu.org.hk) was launched in 2022 to provide the industry and public with a quick and convenient means of searching for useful bond market information as well as CMU service updates. The website also introduced the Securities Search and Member Search functions to further facilitate daily operation of CMU participants.

Chart 9 CMU average daily turnover

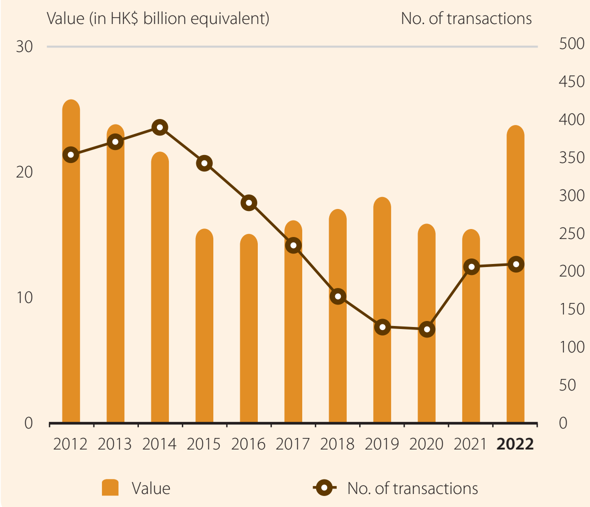
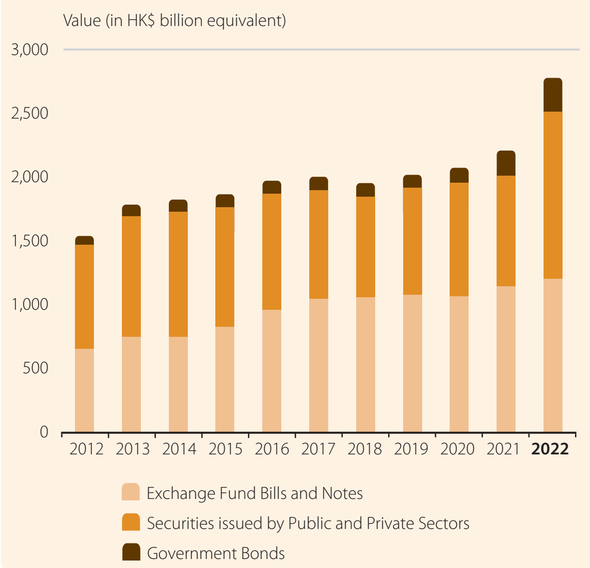


Chart 10 Outstanding amount of CMU issues



To help Hong Kong capitalise on the further opening up of the Mainland debt market and to support new business initiatives, the HKMA started to upgrade the CMU system by introducing the CMU New Platform in phases. In 2022, CMU Open API was implemented successfully as the first major deliverable of the CMU New Platform, enabling a more straight-through processing between the CMU and the Mainland CSDs. With a view to better serve the market participants, further deliverables and enhancements from the CMU New Platform are being planned for launch in 2023. To raise the profile and recognition of the CMU in the financial community so as to promote the CMU's further development as an international CSD with a focus on renminbi securities, various marketing activities have been carried out, including participation in conferences and seminars organised by international and local organisations, publication of CMU newsletters and organisation of briefings for market participants.

Panel session on "Unprecedented Challenges and Creative Responses" at the 24th General Meeting of the Asia-Pacific CSD Group (ACG) in Busan, South Korea

Over-the-counter derivatives trade repository

By the end of 2022, the HKTR system had recorded 3,956,374 outstanding transactions, compared with 3,251,179 in 2021. The HKMA participated in a number of international discussions and working groups on reporting standards for trade repositories to keep abreast of relevant developments and ensure the HKTR continued to meet international standards and best practices.

Hong Kong's retail payment industry

The HKMA promotes the safety and efficiency of the retail payment industry by implementing the regulatory regime for SVFs and RPSs in accordance with the PSSVFO. Under the PSSVFO, the HKMA is empowered to license SVF issuers, designate important RPSs and discharge supervisory and enforcement functions.

Stored value facilities (including e-wallets, prepaid cards)

The HKMA regulates the SVF licensees (Table 2) under a risk-based approach, taking into account the supervisory experience accumulated since the inception of the SVF licensing regime and relevant market developments.

Table 2 Register of SVF licensees
(in alphabetical order) (as at 31 December 2022)

SVF Licensees
33 Financial Services Limited
Alipay Financial Services (HK) Limited
Autotoll Limited
ePaylinks Technology Co., Limited
HKT Payment Limited
Octopus Cards Limited
PayPal Hong Kong Limited
RD Wallet Technologies Limited
TNG (Asia) Limited
Transforex (Hong Kong) Investment Consulting Co., Limited
UniCard Solution Limited
WeChat Pay Hong Kong Limited
Yintran Group Holdings Limited
Licensed Banks *(currently issuing or facilitating the issue of, or with no objection from the HKMA for issuing or facilitating the issue of, SVFs)*[a]
Bank of China (Hong Kong) Limited
Bank of Communications (Hong Kong) Limited
Dah Sing Bank, Limited
Hongkong and Shanghai Banking Corporation Limited (The)

a. Pursuant to Section 8G of the PSSVFO (with reference to Section 2 of the PSSVFO and also Section 2(1) of the Banking Ordinance), a licensed bank is regarded as being granted a licence.

International Financial Centre

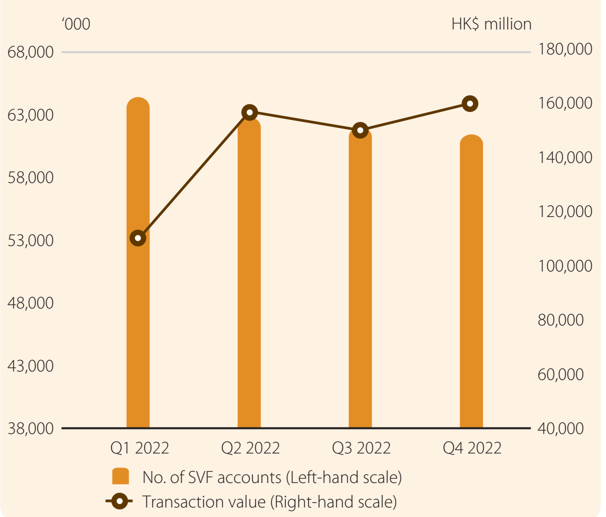
During the year, the HKMA continued to follow up with SVF licensees on their progress in implementing enhancements to account structure and opening requirements, and provided supervisory guidance to the industry on various key issues such as the rolling out of new functions and services. In addition, the HKMA promoted public awareness of issues related to usage and regulation of the SVFs.

The HKMA also provided necessary supervisory guidance to the SVF industry to, among other things, help SVF licensees improve the efficiency and effectiveness of their control systems, including in the areas of corporate governance, float protection, payment security, and anti-money laundering and counter-financing of terrorism controls.

In support of the new round of the Consumption Voucher Scheme announced in the Financial Secretary's 2022–23 Budget in which two additional SVF licensees were appointed by the Government to participate, the HKMA actively co-ordinated and promoted dialogues and co-operation between the relevant Government parties and the SVF licensees appointed for the scheme.

The number of SVF accounts stood at 61.5 million as at the end of 2022. In the fourth quarter, 1.9 billion transactions totalling HK$161.4 billion were recorded (Chart 11).

Chart 11 Growth trend of the SVF industry in 2022



Retail payment systems

In accordance with the PSSVFO, the Monetary Authority has designated six RPSs, which process payment transactions involving participants in Hong Kong, on the grounds that proper functioning of these systems is of significant public interest (Table 3). The HKMA adopts a risk-based approach in the oversight of the designated RPSs, which are required under the PSSVFO to operate in a safe and efficient manner. During the year, the HKMA also issued additional guidance to the designated RPSs to promote better management of risks arising from data breaches that occurred at TSPs of the participants of the designated RPSs.

Table 3 System operators of designated RPSs
(in alphabetical order) (as at 31 December 2022)

American Express
EPS Company (Hong Kong) Limited
Joint Electronic Teller Services Limited
Mastercard
UnionPay International
Visa

Crypto-assets, particularly stablecoins

In October, the Government and financial regulators issued the Policy Statement on Development of Virtual Assets in Hong Kong, setting out its policy stance and approach towards developing a vibrant sector and ecosystem for crypto-assets in the city, as well as its plan to put in place timely and necessary guardrails based on the principle of "same activity, same risks, same regulation". In support of the Government's work towards providing a facilitating environment for sustainable and responsible development of the crypto-asset sector in Hong Kong, the new Digital Finance Division was formed under the Monetary Management Department in October to better co-ordinate the HKMA's work in this regard.

In January 2022, the HKMA issued a discussion paper on crypto-assets and stablecoins, setting out the HKMA's thinking on the relevant regulatory approach and inviting views from stakeholders. The feedback received indicated broad support for the HKMA's proposal of regulating stablecoins by taking an agile and risk-based approach. In January 2023, the HKMA issued the conclusion to the discussion paper, summarising the feedback received in relation to the paper as well as the HKMA's relevant responses, and setting out the expected regulatory scope, key regulatory requirements and next steps.

During 2022, the HKMA also actively contributed to the international work on developing appropriate regulatory standards and recommendations on stablecoins, especially those of the FSB and major standard-setting bodies.

Electronic cheques

The use of electronic cheques (e-Cheques) was steady in the past year. The Government adopted e-Cheques to disburse subsidies to eligible employers under the Employment Support Scheme from June to November. To further promote wider adoption of e-Cheques, the HKMA has been working closely with TSPs to explore the use of an e-Cheque Open API service to facilitate presentment of cross-boundary e-Cheques on the Mainland.

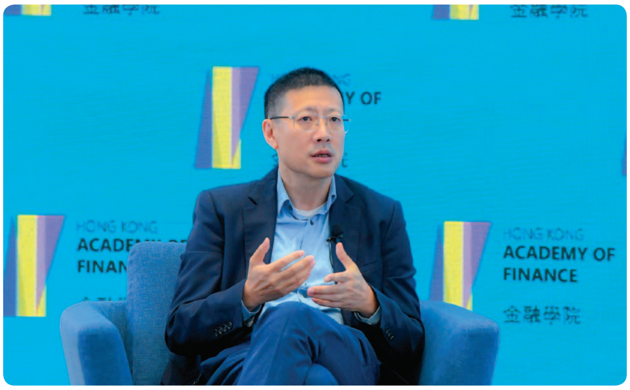
International Financial Centre

Hong Kong Academy of Finance

The Hong Kong Academy of Finance (AoF)[9] was set up in June 2019 to serve as a centre of excellence for developing financial leadership and a repository of knowledge in monetary and financial research, including applied research. In 2022, the AoF's leadership development and research efforts focused on key contemporary developments in the financial sector, including fintech and digitalisation; green finance and environmental, social and governance (ESG) issues; and the GBA and the Mainland.

A diverse range of activities was organised under the AoF's Leadership Development Programme. Seminars and discussion panels in virtual and hybrid format were held, including four sessions of the Distinguished Speakers Series featuring world-renowned speakers[10]. The discussions covered global economic and geopolitical developments and financial market issues, as well as the speakers' personal stories of success. The AoF also co-organised a number of events with different organisations, including the Government's Civil Service College, the Insurance Authority and CPA Australia. In particular, in collaboration with the HKMA, the AoF co-organised the high profile "Conversations with Global Investors" seminar on 3 November, as part of the Global Financial Leaders' Investment Summit.

The AoF launched the Financial Leaders Programme in 2022, which aims to inspire financial talents, equip them with a mindset to lead and look at issues from a macro perspective, and expand their networks. The inaugural (2022) cohort graduates comprise 19 promising future financial leaders from diverse backgrounds[11]. During the nine-month programme, the cohort participated in over 30 discussion sessions with top leaders in financial services and other sectors on various issues pertinent to the continuous development of Hong Kong's financial industry. Activities of the 2023 Programme will begin in April 2023.



During an AoF seminar, Mr Neil Shen, Founding and Managing Partner of Sequoia China, unveils his secrets of success in discovering hidden gems

Global financial leaders speak at the "Conversations with Global Investors" seminar at the Investment Summit

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9 The AoF is set up with full collaboration amongst the HKMA, the SFC, the Insurance Authority and the Mandatory Provident Fund Schemes Authority. It brings together the strengths of academia, the industry, professionals and the regulatory community to develop financial leadership and promote research collaboration.

10 Speakers of the Distinguished Speakers Series included Baroness Shriti Vadera (Prudential), Professor Michael Spence (Nobel Laureate), Lord Mervyn King (former Governor of the Bank of England) and Mr Neil Shen (Sequoia China).

11 The full list of 2022 graduates is available at the AoF website (https://www.aof.org.hk/flp/participants/2022-cohort).

The AoF held its second Fellowship Conferment Ceremony on 14 December, conferring Fellowships on three distinguished leaders in the field of finance who have made outstanding contributions to Hong Kong. They are Dr Norman T.L. Chan, Professor Edward K.Y. Chen and Dr David Y.K. Wong.

During the year, the AoF completed the first three-year periodic review of its Membership and took steps to expand its membership and recruit more up-and-coming talents to create a pipeline of future leaders.

To benefit a wider audience, most of the AoF's events were livestreamed online, and some of them were broadcast to online financial platforms in the Mainland. This not only attracted a much larger audience from within and outside Hong Kong (sometimes reaching more than one million views in the Mainland), but also improved the recognition of the AoF and enhanced the reputation of Hong Kong as an international financial centre. The AoF continued to publicise its activities digitally through its YouTube channel, website and quarterly newsletters, and social media channels to establish itself as a reputable platform for knowledge exchange and insights on economic and financial issues, particularly those related to Hong Kong and the Mainland.

On the research front, during 2022, the Hong Kong Institute for Monetary and Financial Research (HKIMR), the research arm of the AoF, published three applied research reports on (1) demographic changes and long-term asset markets in Hong Kong, (2) COVID-19's impact on the operational resilience of Hong Kong's financial services industry and (3) the existing landscape and developments of climate risk measurement in Hong Kong's financial services industry. In collaboration with the Alliance for Green Commercial Banks, the HKIMR released a thought leadership paper on the definitions, measurement, current practices and regulatory oversight of climate risk in the financial services industry. In addition, the HKIMR published four applied research papers covering topics including fintech, ESG and market microstructure. All research findings were widely disseminated to local and international market participants, regulators and academics through various channels. The response from the financial community on the research outputs was positive and favourable.

The AoF Board confers Fellowships on three distinguished financial leaders, namely Dr Norman T.L. Chan (fourth from left), Professor Edward K.Y. Chen (fourth from right) and Dr David Y.K. Wong (third from right)

An applied research report on the existing landscape and developments of climate risk measurement in Hong Kong's financial services industry

A press conference on releasing the thought leadership paper on the definitions, measurement, current practices and regulatory oversight of climate risk in the financial services industry

International Financial Centre

International and regional co-operation

Participation in the international financial community

The HKMA participates actively in central banking and regulatory forums to contribute to global financial stability.

The HKMA is a member of the FSB Plenary, the FSB Standing Committee on Assessment of Vulnerabilities and the FSB Standing Committee on Supervisory and Regulatory Cooperation. Under the FSB, the HKMA actively contributes to the work on non-bank financial intermediation (NBFI), financial innovation and benchmark transition, among other topics. It is a member of the FSB Steering Committee group on NBFI, which is charged with organising and providing strategic direction on NBFI-related initiatives within the FSB, as well as ensuring effective co-ordination with standard-setting bodies in this area. The HKMA also co-chairs the FSB's Non-bank Monitoring Experts Group, which publishes the annual Global Monitoring Report on NBFI. The report assesses global trends and risks from NBFI and is part of the FSB's policy work to enhance resilience of the NBFI sector. In other areas, the HKMA co-chairs the Financial Innovation Network under the FSB Standing Committee on Assessment of Vulnerabilities, which monitors and assesses financial innovations from a financial stability perspective. The HKMA also leads a drafting team under the FSB Standing Committee on Supervisory and Regulatory Cooperation to monitor progress and follow up on supervisory issues associated with benchmark transition.

The HKMA, as a member of the FSB Cross-border Payments Coordination Group and the Task Force on Cross-border Payments set up by the Committee on Payments and Market Infrastructures under the BIS, contributed to the development of building blocks and a G20 roadmap to address the challenges of the existing arrangement of cross-border payments.

The HKMA is also a member of the BIS, which aims to provide central banks with a forum for dialogue and broad international co-operation. The HKMA participates in BIS bimonthly meetings and various committees, including the Asian Consultative Council, the Markets Committee, the Committee on the Global Financial System, the Basel Committee and the Committee on Payments and Market Infrastructures.

The BIS opened its Representative Office for Asia and the Pacific, their first overseas office, in Hong Kong in 1998 to serve as a regional centre for the activities of the BIS in Asia. The HKMA maintains a close working relationship with the BIS regional office to promote international standards and best practices among the central banking community in Asia.

In 2019, the BIS Innovation Hub established one of the first BIS Innovation Hub Centres in Hong Kong. The Centre maintains close collaboration with the HKMA, and its current project focus areas are CBDC, open finance and green finance. As part of Innovation BIS 2025, the BIS' medium-term strategy, the re-orientation of the BIS Asian Office since 2019 has brought deeper engagement and closer collaboration with Asian central banks.

Separately, since 2021 the HKMA has been co-chairing the Policy and Standards Group which leads the Basel Committee's work on the development and implementation of common prudential standards. For details about the HKMA's participation in the Basel Committee, see the *Banking Stability* chapter on page 91.

Regional co-operation

The HKMA is committed to regional co-operative initiatives to promote financial stability in Asia and harness the region's collective voice in international financial affairs.

The HKMA continued to chair the EMEAP WGFM during 2022. The WGFM makes policy recommendations on central bank services as well as developments in the foreign exchange, money and bond markets, and promotes regional bond market development through the Asian Bond Fund (ABF) initiative.

As part of its WGFM chairmanship, the HKMA steered a study on bond market stress and policy responses in the EMEAP region during COVID-19, and co-ordinated a project to promote investment in green bonds through the ABF. The HKMA was also re-appointed chair of the EMEAP Study Group on Resolution, which supports knowledge sharing among regional authorities in relation to resolution in a cross-border context. In addition, the HKMA continued to prepare the Monetary and Financial Stability Committee's half-yearly Macro-Monitoring Report to assess the region's risks and vulnerabilities and the policy implications.

Supporting the Global Financial Safety Net

The pandemic and macroeconomic environment have highlighted the importance of the Global Financial Safety Net (GFSN) in safeguarding financial stability. As a member of the global financial community, Hong Kong maintains its commitment to strengthening the GFSN through participation in the International Monetary Fund (IMF) New Arrangements to Borrow (NAB)[12], ASEAN+3[13] Chiang Mai Initiative Multilateralisation (CMIM)[14] and the BIS Renminbi Liquidity Arrangement (RMBLA). The RMBLA is a new BIS liquidity facility announced in June that aims to provide additional liquidity access to participating central banks in times of market volatility. The HKMA was among the initial group of central banks in Asia and the Pacific that participated in the RMBLA.[15]

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12 The NAB is a stand-by loan facility set up in 1998 to provide supplementary resources to the IMF for lending purposes. Under the NAB, Hong Kong is prepared to extend loans to the IMF when additional resources are needed to deal with exceptional situations that pose a threat to the stability of international financial systems. Effective 1 January 2021, the IMF Executive Board approved doubling the NAB credit arrangement through to 2025.

13 ASEAN+3 comprises the 10 Association of Southeast Asian Nations (ASEAN) member countries (Brunei, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam), together with China, Japan and South Korea.

14 Effective March 2010, the CMIM became a regional financing mechanism that provides short-term US dollar support to member economies facing liquidity shortages. It has 27 participating parties, including the ministries of finance and central banks of the 13 ASEAN+3 countries plus the HKMA. The total access fund stands at US$240 billion. Further enhancements were made to optimize the operation of the CMIM. In March 2021, the CMIM agreement was amended to increase the IMF de-linked portion from 30% to 40% of each member's maximum arrangement amount, and to institutionalise the use of local currencies, in addition to the US dollar, for CMIM financing on a voluntary and demand-driven basis.

15 The arrangement initially includes the Bank Indonesia, the Bank Negara Malaysia, the HKMA, the Monetary Authority of Singapore and the Banco Central de Chile, as well as the PBoC.

Reserves Management

The investment environment was exceptionally volatile in 2022, with prices of multiple asset classes falling at the same time, undermining the conventional risk mitigating effects of holding bonds and equities. This was also the only time in almost half a century during which returns from equities, bonds and major currencies against the US dollar all recorded negative returns simultaneously. Against this background, the Exchange Fund recorded an overall negative investment return of 4.5% in 2022. As compared to the sharp losses suffered by the majority of multi-asset funds in the market during the year, the Exchange Fund's performance has shown that the HKMA's diversified long-term asset allocation as well as defensive measures and strategic adjustments taken in response to changes in the external environment were effective in mitigating the destructive impact of market storms.

The Exchange Fund

The Exchange Fund's primary objective, as laid down in the Exchange Fund Ordinance, is to affect, either directly or indirectly, the exchange value of the currency of Hong Kong. The Fund may also be used to maintain the stability and integrity of Hong Kong's monetary and financial systems to help maintain Hong Kong as an international financial centre. The HKMA, under the delegated authority of the Financial Secretary and within the terms of the delegation, is responsible to the Financial Secretary for the use and investment management of the Exchange Fund.

Management of the Exchange Fund

Investment objectives and portfolio structure

The Exchange Fund Advisory Committee (EFAC) has set the following investment objectives for the Exchange Fund:

(i) To preserve capital;

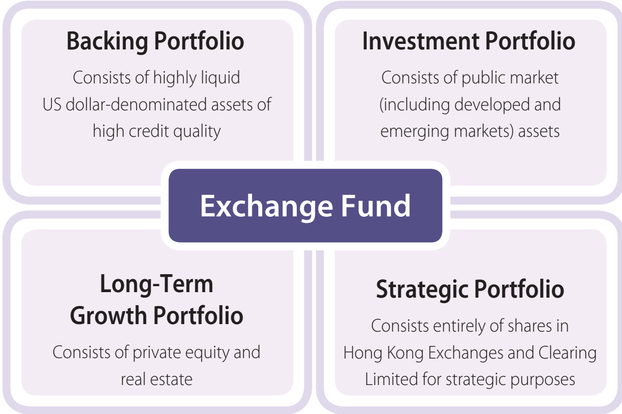
(ii) To ensure that the entire Monetary Base, at all times, is fully backed by highly liquid US dollar-denominated assets;

(iii) To ensure that sufficient liquidity is available for the purposes of maintaining monetary and financial stability; and

(iv) Subject to (i)–(iii), to achieve an investment return that will help preserve the long-term purchasing power of the Fund.

These objectives take full account of the statutory purposes of the Exchange Fund, and are incorporated into the portfolio structure and the target asset mix of the Fund (Figure 1).

Figure 1 Portfolio segregation of the Exchange Fund



Broadly speaking, the Exchange Fund has two major portfolios: the Backing Portfolio (BP) and the Investment Portfolio (IP). The BP holds highly liquid US dollar-denominated assets to provide full backing to the Monetary Base as required under the Currency Board arrangements. The IP invests primarily in the bond and equity markets of the member economies of the Organisation for Economic Co-operation and Development to preserve the value and long-term purchasing power of its assets.

To better manage risks and enhance returns in the medium and long term, the HKMA diversifies part of the Exchange Fund's investments in a prudent and incremental manner into a wider variety of asset classes. This includes emerging market and Mainland bonds and equities, private equity (including infrastructure) and real estate. Emerging market and Mainland bonds and equities are held under the IP, while private equity and real estate investments are held under the Long-Term Growth Portfolio (LTGP). The target asset allocation of the LTGP is determined concurrently with that of other asset classes, subject to prudent risk management principles and portfolio diversification strategy.

The Strategic Portfolio, established in 2007, holds shares in Hong Kong Exchanges and Clearing Limited that have been acquired by the Government for the account of the Exchange Fund for strategic purposes. The Strategic Portfolio is not included in the assessment of the Fund's investment performance because of its unique nature.

Reserves Management

Placements with the Exchange Fund

The Exchange Fund, from time to time, accepts placements by the Fiscal Reserves, Government funds and statutory bodies. The interest rate is generally linked to the performance of the IP[1], with the major exception of the Future Fund[2], which links its interest rate to the return of both the IP and the LTGP in accordance with the portfolio mix. The portfolio mix of the Future Fund between the IP and the LTGP was about 35:65 in 2022.

The investment process

The investment process of the Exchange Fund is underpinned by decisions on two types of asset allocation: the strategic asset allocation and the tactical asset allocation. The strategic asset allocation, reflected in the investment benchmark, represents long-term asset allocation given the investment objectives of the Exchange Fund. Guided by the strategic allocation, assets are tactically allocated in an attempt to achieve an excess return over the benchmark. This means the actual allocation is often different from the benchmark (or strategic) allocation. The differences between the actual and benchmark allocations are known as "tactical deviations". While the benchmark and tracking error[3] limit are determined by the Financial Secretary in consultation with the EFAC, tactical decisions and allowable ranges for tactical deviations are made and set by the HKMA under delegated authority. Within the ranges allowed for tactical deviations, portfolio managers may assume positions to take advantage of short-term market movements.

Investment management

Direct investment

The HKMA's Exchange Fund Investment Office houses the Exchange Fund's investment and related risk management functions. Exchange Fund Investment Office staff members directly manage about 70% of the investments of the Exchange Fund, comprising the entire BP and part of the IP. The part of the IP managed internally includes a set of portfolios invested in global fixed-income markets and various derivative overlay portfolios implementing macro risk management strategies for the Fund.

Use of external managers

In addition to managing assets internally, the HKMA employs external fund managers to manage about 30% of the Exchange Fund's assets, including all of its listed equity portfolios and other specialised asset classes. The purpose of engaging external managers is to tap the best investment expertise available in the market to realise sustainable returns, draw on diverse and complementary investment styles, and gain market insights and technical expertise in investment.

Expenditure relating to the use of external managers includes fund management and custodian fees, transaction costs, and withholding and other taxes. The expenditure is determined primarily by market factors and may fluctuate from year to year.

Risk management and compliance

The growing complexity of the investment environment underlines the importance of risk management. The HKMA sets stringent controls and investment guidelines for both internally and externally managed portfolios, and ensures a proper risk monitoring and compliance system is in place. Three lines of defence are in place to implement effective risk management and governance of investment-related activities. Key risk categories (including credit, market, liquidity and operational risks) are regularly monitored, and the risk management process provides a robust framework to support strategic planning and investment diversification.

Responsible investment

The HKMA believes that, by putting an appropriate emphasis on responsible investment and sustainable long-term economic performance, it can better achieve the investment objectives of the Exchange Fund and reduce risks associated with environmental, social and governance (ESG)- related matters of its underlying investments. The HKMA adopts responsible investment by integrating ESG factors into the investment processes for both public and private market investments of the Exchange Fund, underpinned by the guiding principle that priority will generally be given to ESG investments if the long-term risk-adjusted return is comparable with other investments. For more details about the HKMA's responsible investment framework and implementation, see the *Responsible Investment* chapter of the *Sustainability Report 2022*.

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1 The rate is the average annual investment return of the IP for the past six years, or the average annual yield of three-year Government Bond for the previous year, subject to a minimum of 0% (whichever is higher).

2 The Future Fund was established by the Government in 2016 with a view to securing higher investment returns for the Fiscal Reserves to support increasing needs in the future.

3 "Tracking error" measures how closely a portfolio follows its benchmark.

Performance of the Exchange Fund

The financial markets in 2022

Global financial markets experienced an exceptionally volatile year in 2022, with both the bond and equity markets down notably by 16.2% and 19.8%[4] respectively.

Major equity indices declined sharply during the year amid soaring inflation, tightening monetary policy and slowing economic growth globally. The S&P 500 Index in the US fell by 19.4%, while the Hang Seng Index in Hong Kong dropped by 15.5%, despite a slight rebound near the end of the year as investors believed inflation and interest rates might have peaked.

As central banks around the world raised interest rates aggressively to combat inflation, major government bond yields continued to surge. Ten-year US Treasury yields rose from 1.63% at the beginning of 2022 to above 4% in the fourth quarter, reaching the highest level since 2008. Inversion of the US treasury yield curve widened further during the year, deepening recession fears.

In the currency markets, the US dollar strengthened considerably against other major currencies in 2022 on the back of consecutive rate hikes by the US Federal Reserve. Other major currencies, including the euro, pound sterling, yen and renminbi, depreciated sharply against the US dollar. In particular, the pound sterling and the yen depreciated by 10.7% and 12.2% against the US dollar respectively.

The performance of major currency, bond and equity markets in 2022 is shown in Table 1.

Table 1 2022 market returns

Currencies	
Appreciation (+)/depreciation (-) against US dollar	
Euro	- 5.8%
Pound sterling	- 10.7%
Renminbi	- 7.9%
Yen	- 12.2%
Bond markets	
Relevant US Government Bond (1–30 years) Index	- 12.2%
Equity markets[a]	
Standard & Poor's 500 Index	- 19.4%
DAX Index	- 12.3%
FTSE 100 Index	+ 0.9%
TOPIX Index	- 5.1%
MSCI Emerging Markets Index	- 22.4%
Hang Seng Index	- 15.5%

a. Market performance on equities is based on index price change during the year.

4 Based on the Bloomberg Global Aggregate Total Return Index and the MSCI All Country World Index as measured in US dollar terms.

Reserves Management

The Exchange Fund's performance

The Exchange Fund recorded an investment loss of HK$205.4 billion in 2022. This comprised losses on bonds of HK$53.2 billion, losses on equities of HK$80.5 billion (with losses of HK$61.0 billion from foreign equities, and losses of HK$19.5 billion from Hong Kong equities), a negative currency translation effect of HK$40.0 billion on non-Hong Kong dollar assets, and losses of HK$31.7 billion on other investments held by the investment-holding subsidiaries of the Fund. Separately, the Strategic Portfolio recorded a valuation loss of HK$8.7 billion.

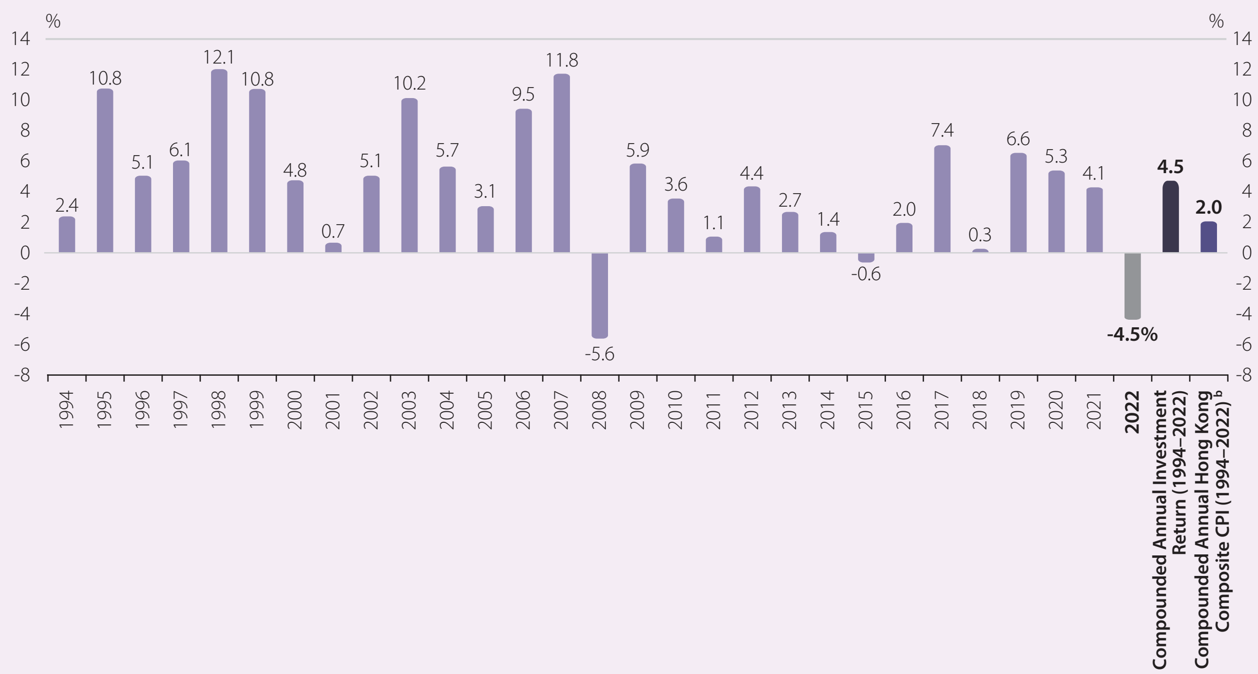
Total assets of the Exchange Fund reached HK$4,008.0 billion at the end of the year. The market value of investments under the LTGP totalled HK$484.7 billion, with private equity amounting to HK$370.0 billion and real estate HK$114.7 billion. Outstanding investment commitments of the LTGP amounted to HK$270.8 billion.

The investment return of the Exchange Fund in 2022, excluding the Strategic Portfolio, was -4.5%. The returns of the IP and the BP were -8.6% and -0.4% respectively. The LTGP has recorded an annualised internal rate of return of 12.6% since its inception in 2009.

The annual returns of the Exchange Fund from 1994 to 2022 are set out in Chart 1. Table 2 shows the 2022 investment return and the average investment returns of the Fund over several different time horizons. The average return was 1.5% during 2020–2022, 2.3% during 2018–2022, 2.4% during 2013–2022 and 4.5% since 1994. Table 3 shows the currency mix of the Fund's assets on 31 December 2022.

See pages 173 to 281 for the audited 2022 financial statements of the Exchange Fund.

Chart 1 Investment return of the Exchange Fund (1994–2022)[a]



a. Investment return calculation excludes the holdings in the Strategic Portfolio.
b. The Composite Consumer Price Index (CPI) is calculated based on the 2019/2020-based series.

Table 2 Investment return of the Exchange Fund in Hong Kong dollar terms[a]

	Investment return[b, c]
2022	**-4.5%**
3-year average (2020–2022)	1.5%
5-year average (2018–2022)	2.3%
10-year average (2013–2022)	2.4%
Average since 1994	4.5%

a. The investment returns for 2001 to 2003 are in US dollar terms.
b. Investment return calculation excludes the holdings in the Strategic Portfolio.
c. Averages over different time horizons are calculated on an annually compounded basis.

Table 3 Currency mix of the Exchange Fund's assets on 31 December 2022 (including forward transactions)

	HK$ million	%
US dollar	**3,266,400**	81.5
Hong Kong dollar	**171,602**	4.3
Others[a]	**570,036**	14.2
Total	**4,008,038**	**100.0**

a. Other currencies consisted mainly of the euro, renminbi, pound sterling and yen.

Corporate Functions

Corporate functions support the operation of the HKMA with a high level of transparency, accountability, efficiency and professionalism. To promote public understanding about its policies and operations, the HKMA maintains effective communication with the community and the market through traditional and social media, its website, the Information Centre and other channels.

Within the institution, the HKMA conscientiously builds an agile and sustainable workforce, institutes rigorous financial discipline and upgrades information technology capabilities to adapt to changes and ensure effective implementation of its policies and initiatives.

Transparency

Media relations and social media

The HKMA works closely with the media to enhance transparency and promote public understanding of its policies and operations. In 2022, the HKMA held or participated in 112 physical and virtual events, comprising eight press conferences, 11 stand-up interviews and 93 other public functions. A further 46 media interviews were arranged. A total of 492 bilingual press releases were issued over the course of the year, and a large number of media enquiries were handled on a daily basis.

To raise awareness of the HKMA's key functions, press conferences and media briefings were organised for local, Mainland and foreign media. Topics included the Currency Board operations, green and sustainable finance, and Central Bank Digital Currency (CBDC).

Media actively took part in events organised by the HKMA during 2022, including the Global Financial Leaders' Investment Summit. The three-day event was well received by the media. More than 200 journalists from 87 media outlets were present, and the event generated around 1,000 pieces of news coverage in local, regional and international media. Separately, live streaming signals were arranged for 30 media outlets.

To effectively engage with the public, the HKMA operates six social media channels (Facebook, Instagram, LinkedIn, Twitter, WeChat, and YouTube) with over 100,000 followers. In 2022, the HKMA established a WeChat channel to reach an even wider audience. The HKMA utilises its social media channels to promote major events and initiatives, including the Global Financial Leaders' Investment Summit and the Government Green Bond Programme, and to raise public awareness on a range of topics, including the Linked Exchange Rate System (LERS), financial technology (fintech) and scam protection.

Mr Eddie Yue, Chief Executive of HKMA, conducts media stand-up at the Global Financial Leaders' Investment Summit

Mr Eddie Yue, Chief Executive of HKMA, delivers opening keynote at the Hong Kong FinTech Week 2022

Corporate Functions

Mr Arthur Yuen, Deputy Chief Executive of HKMA, speaks at the "FinTech's Finest Forum 2022" co-organised by Accenture and Cyberport

Mr Howard Lee, Deputy Chief Executive of HKMA, hosts a press conference to elaborate HKMA's policy stance on e-HKD

Mr Darryl Chan, Deputy Chief Executive of HKMA, speaks virtually at the Annual Conference of Financial Street Forum 2022

Public enquiries

The Public Enquiry Service provides an effective means for the public to better understand key HKMA functions and operations. During 2022, it handled 9,952 enquiries. About half of them were related to consumer banking issues, banking policies and regulations, notes and coins, as well as financial infrastructure and debt market development. Some of the notable enquiries were about the Coin Collection Programme, banking products and services, banking-related guidelines and circulars, and the Retail Bond Issuance Programme.

Chart 1 shows the number of public enquiries received since 2019 and Chart 2 provides a breakdown by enquiry nature in 2022.

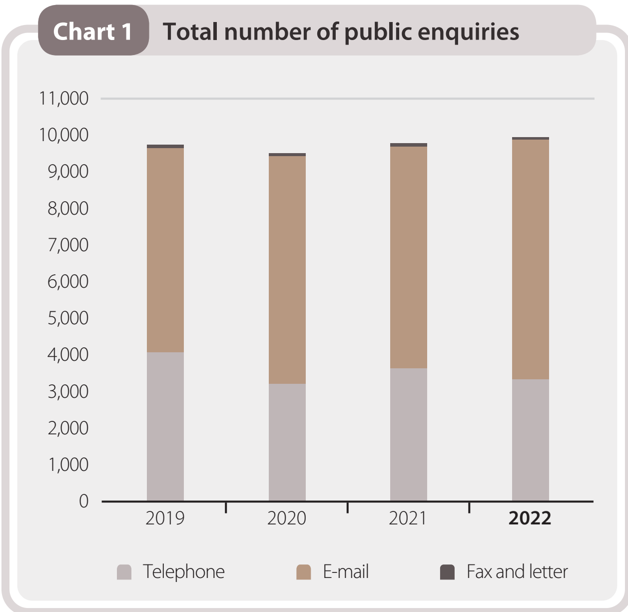
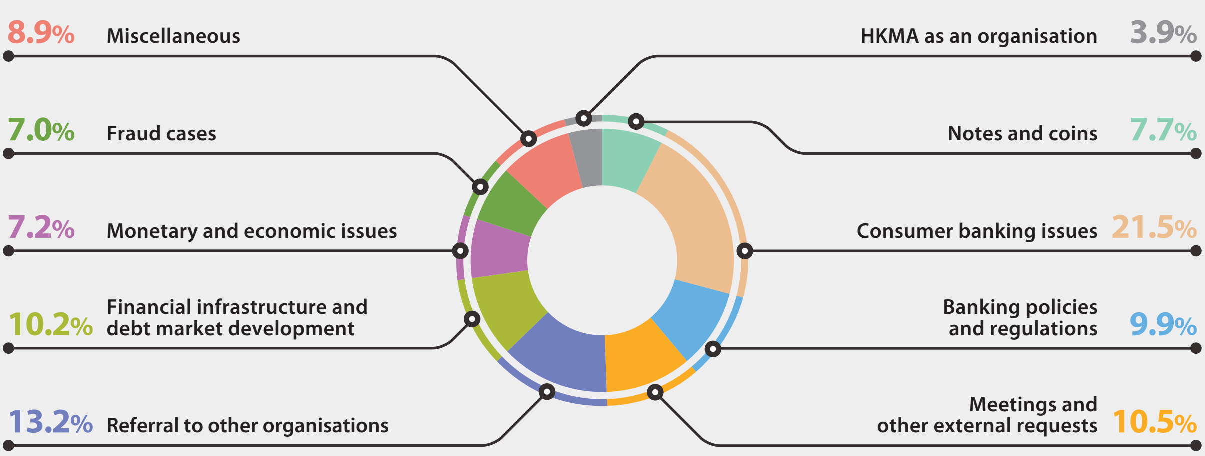


Chart 2 Nature of enquiries received in 2022



Public Enquiry Service Performance Pledge and Achievement Rate

Service	Performance Pledge	Achievement Rate (January–December 2022)
Reply to enquiries	Answer or issue an interim reply within 7 working days after the day of enquiry received	100%

Publications

During the year, apart from the HKMA *Annual Report*, the HKMA published two issues of the *Half-Yearly Monetary and Financial Stability Report*, and four issues of the *Quarterly Bulletin* and it regularly updated the *Monthly Statistical Bulletin* to provide up-to-date and thematic information and analyses on monetary, banking and economic issues in Hong Kong. The HKMA also published 17 *inSight* articles to introduce its major new initiatives and policies and discuss topical issues of interest.

The HKMA *Annual Report 2021* received a Silver Award in the "Non-profit Making and Charitable Organizations" category, and a Certificate of Excellence in Environmental, Social and Governance Reporting at the Hong Kong Management Association's 2022 Best Annual Reports Awards.

Corporate Functions

Corporate website

The corporate website (www.hkma.gov.hk) presents more than 46,000 pages of content in English and traditional and simplified Chinese, and is the public gateway to up-to-date information about the HKMA. It contains the register of authorized institutions (AIs) and local representative offices and the register of securities staff of AIs, both maintained under section 20 of the Banking Ordinance (BO), as well as the register of stored value facility licensees under the Payment Systems and Stored Value Facilities Ordinance.

The HKMA has been releasing financial data and important information on its website via Open Application Programming Interface (Open API) in phases since 2018. By end-2022, the HKMA had opened up 148 sets of Open APIs on its website, in line with the targeted schedule.

The HKMA's Open API portal:

Information Centre

The HKMA Information Centre, located on the 55th floor of Two International Finance Centre, is an important facility introducing the work of the HKMA to the community and promoting public awareness of monetary and banking matters. It consists of an exhibition area and a library. The exhibition area presents an overview of the HKMA's work and the development of money and banking in Hong Kong in an interactive manner. It also contains information and exhibits for the study of Hong Kong's monetary, banking and financial affairs. The library, situated next to the exhibition area, houses more than 26,000 books, journals and other publications on Hong Kong's monetary, banking and financial affairs as well as central banking topics. It also maintains the register of AIs and local representative offices, as well as the register of securities staff of AIs, for public access as required by section 20 of the BO.

The Information Centre gradually resumes its guided tour services for visitors in the second half of 2022 following the subsidence of the COVID-19 pandemic

The library is re-opened to the public in March 2023 with its fresh new look after renovation

Community engagement and public education

To reach out to the community and raise public awareness of the HKMA's work, a public education programme has been running since 1998. In 2022, a webinar was organised for over 2,200 students and teachers from 82 secondary schools. The webinar covered an overview of the HKMA's work, the LERS, Hong Kong banknotes, protection of personal digital keys, the Deposit Protection Scheme and career opportunities in the banking industry. To date, more than 65,000 people have participated in the public education programme.

The HKMA educates and engages the public on how to be smart and responsible financial consumers. In light of the rising number of phishing scams, the HKMA launched a cross-media awareness campaign to further remind the public to stay vigilant against fraudulent hyperlinks embedded in SMS messages and emails purportedly from banks, and to beware of other types of scams, such as deposit and credit cards scams. Radio and social media promotions were also conducted to convey other smart tips on credit cards, personal loans, online shopping and different payment options (including "Buy Now, Pay Later" products).

New videos themed "Protect your Personal Digital Keys; Beware of Fraudulent Links!"

To help the public keep pace with technological advancements in financial services, the HKMA encouraged the public to use electronic lai sees during the Chinese New Year through social media and radio promotions. Animated videos were aired to explain Open API and to pinpoint issues to note when accessing banking services through smartphone applications of third-party service providers such as online shopping platforms and mortgage agencies. The animated videos also introduced the App-to-App/Web-to-App payment function of the Faster Payment System and its benefits.

Animated videos to enhance the public's digital financial literacy

Corporate Functions

The HKMA also seeks to enhance the public's understanding of the financial industry and raise young people's interest in pursuing a career in the HKMA and the industry. New interview videos featuring discussions with graduates of the HKMA's Manager Trainee (MT) Programme not only promoted the programme to potential applicants but also enriched their understanding of the HKMA's work.

MT graduates share their experiences in preparing for the MT interviews

To enhance financial literacy among secondary school students, the HKMA and various stakeholders co-organised the "Hong Kong Financial Literacy Championship" for the eighth consecutive year. Under the theme of green and sustainable finance, students acquired new knowledge through an online quiz (which received a record number of submissions), webinars and a design thinking competition.

Students present their creative solutions with green and sustainability elements in the design thinking competition to address individual personal financial management needs

An online parenting educational campaign was rolled out during the special vacation in March and summer vacation in August in the 2021/22 academic year. Kindergarten and junior primary school students learnt about notes and coins, basic concepts of banking and payment services, and money management via animated videos, story-telling, making of simple toys and sharing sessions with financial and childhood education experts.

Kids learn money management concepts and skills online

Financial disclosure

To maintain a high level of transparency, the HKMA adopts international standards in financial disclosure insofar as these are applicable to central banking operations. These include the Hong Kong Financial Reporting Standards and other applicable reporting requirements, for example, the International Monetary Fund's Special Data Dissemination Standard. The Finance Division works with external auditors and other accounting professionals to prepare and present the Exchange Fund's financial statements in accordance with the Hong Kong Financial Reporting Standards. The HKMA also provides detailed disclosures and thorough analyses of a wide range of expense items and budgetary information in its *Annual Report*.

Accountability and controls

Risk management

One of the HKMA's most important tasks is to manage risks to the monetary and banking systems. Risk management is undertaken both at a working level in day-to-day operations and at a higher level through strategic planning. Under the HKMA's risk management framework, there are two high-level committees — the Macro Surveillance Committee and the Risk Committee — both of which are chaired by the Chief Executive of the HKMA.

The terms of reference of the Macro Surveillance Committee are to:

- identify potential risks and threats to the monetary and financial system in Hong Kong and discuss possible measures to address such risks;
- review existing measures for managing risks in the monetary and financial system to identify possible gaps and ensure the adequacy of these measures; and
- encourage cross-departmental sharing of relevant information on macro surveillance with a view to enhancing the macro surveillance capability of the HKMA.

The terms of reference of the Risk Committee are to:

- identify potential risks and threats to the organisation and devise strategies to reduce the impact of such events;
- review the existing system for managing risks across different departments to identify possible gaps and significant risks and ensure the adequacy of measures to address them;
- harmonise the criteria and methods of risk measurement and prioritise the resources management of risks identified; and
- encourage a stronger risk management culture institutionally which promotes the proper levels of authorisation and controls.

A robust operational risk management framework is in place covering organisational risks at two levels: the entity level and the department level. Entity-level risks refer mainly to those which concern the entire organisation in the medium term, or which might call for a cross-departmental response. Potential and emerging risks identified by business units, and the adequacy of the control measures and mitigating strategies they devise, are reviewed and reported every quarter. This is supplemented by a top-down approach to manage entity-level risks, in which senior colleagues heading different business units actively identify risks of wider impact and propose mitigating measures. The Risk Committee discusses these assessments and decides on appropriate follow-up actions.

Internal audit

The Internal Audit Division (IAD) provides independent and objective assurance on the adequacy and effectiveness of the HKMA's governance, risk management and control processes. The IAD reports functionally to the Audit Sub-Committee of the Exchange Fund Advisory Committee (EFAC) and administratively to the Chief Executive of the HKMA. Adopting a risk-based approach, the IAD conducts operational and information system audits to review significant risk areas. During 2022, 28 audits were conducted on the HKMA's reserves management, banking supervisory activities, monetary and financial development, information technology and other corporate functions. The audit results showed that adequate and effective control systems were in place to manage risks arising from the HKMA's business operations.

The IAD also advises on internal controls of major system development projects and new business initiatives.
It provides risk updates to the Risk Committee regularly, and reports audit progress and key internal control matters to the Audit Sub-Committee of the EFAC and senior executives every quarter.

Corporate Functions

Budgeting and financial controls

In drawing up the annual budget, the HKMA follows a disciplined approach, taking into account ongoing operations and its strategic development as set out in its Three-Year Plan approved by the Financial Secretary (FS) on the advice of EFAC. During the budget process, departments are required to assess their needs for the coming year and to review whether savings in staffing and expenditure can be achieved. This requires departments to critically assess the value of their existing services and the cost-effectiveness of delivery methods. The Finance Division scrutinises all budget requests in communication with individual departments before submitting a consolidated draft budget, including a headcount proposal, for further review by senior management. The Governance Sub-Committee (GSC) of EFAC then deliberates on the proposed budget and recommends any changes it considers necessary, before putting it through EFAC to the FS for approval.

All expenditure items are subject to stringent financial controls governed by detailed procurement rules and guidelines. Compliance with these guidelines is subject to internal audit and is reviewed by independent auditors during the annual audit of the Exchange Fund. Expenses are analysed and reported to senior management every month.

The administrative expenditure in 2022 and the budgeted expenditure for core activities in 2022 and 2023 are shown in Table 1. The difference between the 2022 actual expenditure and the 2023 budget arises mainly from an increase in staff costs, as additional headcounts have been provided to cope with increased workload and job complexity, and increases in provisions for external relations and consultancy services.

Table 2 shows other expenses that are not related directly to the HKMA's own operations. During the year, the HKMA provided financial support (including premises and administrative costs) to international organisations, whose presence in Hong Kong strengthens the city's status as an international financial centre, as well as to regional bodies that are dedicated to setting global standards and promoting regulatory co-operation. Spending on financial infrastructure (including supporting the operation and continued development of payment and settlement systems) enables Hong Kong's financial markets to function efficiently and securely. The HKMA also provides operational support to the Hong Kong Deposit Protection Board (HKDPB) on a cost-recovery basis, as endorsed by the FS under section 6 of the Deposit Protection Scheme Ordinance.

Table 1 Administrative expenditure

HK$ million	2022 Budget	2022 Actual	2023 Budget
Staff costs	1,773		1,881
Salaries and other staff costs		1,498	
Retirement benefit costs		127	
Premises expenses			
Rental expenses	44	44	54
Other premises expenses (including management fees and utility charges)	88	77	91
General operating costs			
Maintenance of office and computer equipment	181	158	201
Financial information and communication services (including trading, dealing terminals and data link charges)	96	75	100
External relations (including international meetings)	42	22	91
Public education and publicity	69	39	85
Professional, consulting and other services	164	94	208
Training	23	5	28
Others	15	11	18
Total administrative expenditure	**2,495**	**2,150**	**2,757**

Table 2 Additional expenses

HK$ million	2022 Budget	2022 Actual	2023 Budget
Financial support to international financial organisations	51	50	57
Financial support to the Hong Kong Academy of Finance and the Hong Kong Institute for Monetary and Financial Research	99	63	103
Service fees for financial infrastructure	159	103	175

Staff conduct and discipline

The HKMA places great emphasis on the integrity and conduct of its staff, and expects them to observe an exemplary standard of personal conduct and integrity and to act in the best interests of the organisation. The HKMA Code of Conduct provides guidance to staff on their ethical and legal responsibilities.

The HKMA makes continuous efforts to remind staff of conduct-related rules and regulations. Weekly email alerts are issued to enhance staff's awareness of important conduct issues related to the avoidance of conflict of interest, prevention of corruption, personal data protection, and anti-discrimination practices. Staff are required to take regular online test to deepen their understanding of relevant policies, rules and regulations.

Corporate Functions

Efficiency

Information technology

The Information Technology (IT) Division maintains a reliable, secure and resilient IT operational environment to support smooth and efficient operations of the HKMA. In 2022, all time-critical systems of the HKMA maintained full operational uptime.

Cybersecurity is always a high priority in the HKMA's overall IT strategy. In addition to monitoring all emerging cyber shocks, the HKMA reviews IT security systems and upgrades them from time to time to enhance resilience and ensure business continuity for all critical systems.

On IT infrastructure, the on-premises private cloud and data centres of the HKMA have been expanded, with physical security of the latter strengthened. Furthermore, preparation for setting up a software-defined networking architecture has commenced, which will enable a more flexible, agile, secure and easy-to-maintain IT network infrastructure.

As IT Division continues to leverage technologies and tools to create a Digital Workplace (a virtual work environment) through standardising end-user hardware and software, modernising conferencing facilities, optimising the virtual desktop infrastructure, and upgrading the wireless network among others, our efforts in this area have resulted in more streamlined processes, improved staff communication, and greater work efficiency in the workplace.

Digitalisation

Since its inception in 2019, the Digitalisation Programme has been persistent in buttressing and improving the efficiency and effectiveness of the HKMA's work through the adoption of emerging technology. Multiple initiatives saw significant progress during 2022, including expanded coverage in the granular data reporting project, and increasing adoption of analytics and automation capabilities. These initiatives contribute to the encouraging progress in improving work efficiency across the Programme's five key areas (namely banking supervision, anti-money laundering supervision, financial stability surveillance, economic research and reserves management).

The Digitalisation Office also strengthened the underlying platform to provide a sound and scalable foundation for the HKMA's digitalisation during 2022. Data-as-a-Service, a unified self-service platform which allows easy and secure access to standardised data, has been launched. The organisation-wide data governance policy has also been drawn up for proper definition of data ownership, clear delineation of data access rights, and consistency in data definitions and categorisation. Meanwhile, the cloud and cybersecurity strategies are being formulated together with IT to pave the way for sustainable and secure deployment of scalable computer resources in the long run.

With the rollout of new digital applications and technology platforms being enhanced, the Digitalisation Office will carry out various enablement and outreach activities starting from 2023 to drive wider technology adoption and facilitate the transition to new ways of agile working across the organisation.

Administration

The HKMA regularly reviews its corporate resources, including space requirements, to ensure that operational needs are met. To allow more efficient use of space, the HKMA's offices adopt an open layout that can accommodate more seating capacity and provide breakout areas for team discussions. In addition, more conference rooms and multi-function rooms for meetings and interviews are now equipped with audio-visual systems in a user-friendly setup for hosting web conferences and webinars. To enhance operational efficiency, the HKMA is preparing for the implementation of an electronic record keeping system to facilitate the gradual migration from paper-based record keeping to electronic record keeping. Furthermore, the HKMA promotes a green and caring workplace — more information can be found in the *Sustainable HKMA* chapter of the *Sustainability Report 2022*.

Business continuity plans for the HKMA are reviewed constantly to ensure they address readily identifiable risks, including technical problems, fires, power failures and other emergencies. Drills on evacuation and the activation of back-up facilities are conducted regularly to ensure that staff are responsive and familiar with the business continuity measures. A dedicated team monitors COVID-19 alerts and other infectious diseases to make sure that necessary precautionary and contingency measures can be taken in a timely manner.

Legal support

The Office of the General Counsel (OGC) provides legal advice to the HKMA on all aspects of its functions. In 2022, the OGC worked alongside other HKMA departments on a diverse range of matters, including legislation for the implementation of the final parts of Basel III; the legal aspects of CBDCs; the investment of Exchange Fund assets; and various enforcement, licensing and revocation processes.

OGC lawyers also provide legal support for the HKMA's participation in international working groups, and respond to consultations on legislative proposals and other matters which may affect the functions and operations of the HKMA.

Settlement services

The Settlement Section provides reliable and efficient settlement services and operational support to the HKMA's reserves management, monetary operations and other initiatives. In 2022, the Settlement Section continued to maintain a high level of operational resilience and efficiency to meet ongoing and new settlement service demands amidst the COVID-19 pandemic. Supported by effective and robust operation and system controls, the funds and assets of the Exchange Fund were accurately and securely transferred. The Settlement Section will stay agile to new changes arising from the rapid development of the financial industry.

Professional workforce

Establishment and strength

The HKMA recruits, develops and maintains a highly professional workforce to support its policy objectives and respond flexibly to changing work priorities.

The establishment of the HKMA in 2022 was 1,005. The HKMA made strong efforts to support new initiatives as well as the voluminous and complex work through flexible redeployment of existing resources, efficiency enhancement and streamlining of work processes. Following a three-year period of zero growth in our permanent establishment from 2020 to 2022, the HKMA will increase its establishment to 1,056 in 2023 through creation of 30 new posts and conversion of 21 contract posts to permanent posts in order to cope with our longer-term manpower needs in the areas of banking stability, reserves management, and green and sustainable finance.

HKMA's Core Values

The HKMA is committed to promoting a sound corporate culture which underpins the effective delivery of the important missions of safeguarding financial and monetary stability, as well as strengthening Hong Kong's status as an international financial centre. The core values of the HKMA are:

Integrity
We act with honesty, probity, and impartiality

Professionalism
We pursue professional excellence, intelligent enquiry, innovation, and continuous improvements

Collaboration
We respect and value our people; and promote teamwork and diversity of views

Corporate Functions

Table 3 gives a breakdown of the establishment and strength of the HKMA.

Table 3 Establishment and strength on 1 January 2023

		Senior staff		Others	
Department	**Functions**	**Establishment**	**Strength**	**Establishment**	**Strength**
Senior Executives' Office	Top management of the HKMA	4	4	11	11
Banking Conduct	To take charge of payment systems oversight, licensing, and all supervisory and development functions relating to the business conduct of AIs	1	1	97	89
Banking Policy	To formulate supervisory policies for promoting the safety and soundness of the banking sector, enhance the capacity building of industry practitioners, and take charge of the deposit protection function	1	1	47	43
Banking Supervision	To supervise operations of AIs	1	1	188	164
Enforcement and Anti-Money Laundering	To investigate and, where appropriate, take enforcement action under relevant ordinances, supervise anti-money laundering and counter-terrorist financing systems, and handle complaints	1	1	101	96
Exchange Fund Investment Office	To manage reserves in line with established guidelines to achieve investment returns and enhance the quality of returns by diversifying investments into different markets and asset types	1	1	110	93
Risk and Compliance*	To oversee all risk-generating activities, including investment risks and non-investment-related corporate risks of the HKMA	1	1	46	41
External	To develop and promote Hong Kong as an international financial centre, foster regional monetary co-operation through participation in the international central banking and financial community, and promote the development of financial markets	1	0	58	50
Financial Infrastructure	To develop and enhance financial market infrastructure for maintaining and strengthening Hong Kong's status as an international financial centre	1	1	19	19
Monetary Management	To maintain financial and monetary stability through macro-financial surveillance and monitoring of market operations, license and supervise stored value facilities, designate and oversee important retail payment systems, develop thought leadership and implement policies in digital finance including stablecoin regulation, take charge of the settlement function, and ensure an adequate supply of banknotes and coins	1	1	94	84
Research	To conduct research and analyses on economic and financial market developments in Hong Kong and other economies	1	1	41	38
Office of the General Counsel	To provide in-house legal support and advice	1	1	29	26
Corporate Services	To provide support in the form of administration, finance, human resources, information technology and secretariat services; handle media and community relations; and provide consumer education	1	1	176	165
Internal Audit Division	To evaluate and advise on the adequacy and effectiveness of the HKMA's governance, risk management and control processes	0	0	10	9
Resolution Office	To establish resolution standards, contribute to international resolution policy development, undertake local and cross-border resolution planning, develop operational capabilities to implement resolution, and execute the orderly resolution of a failing AI or a cross-sectoral group if needed	0	0	13	9
Total		**16**	**15**	**1,040**	**937**

* Staff members overseeing investment risks are part of the Exchange Fund Investment Office set-up. For presentational reasons, they are grouped under the Risk and Compliance Department.

Remuneration policies

The FS determines the pay and conditions of service for HKMA staff on the advice of the GSC through EFAC, taking into account the prevailing market rates and practices. Remuneration comprises a total cash package and a provident fund scheme, with minimal benefits in kind. The cash package consists of monthly fixed pay (or basic pay) and variable pay that may be awarded to individual staff members as a lump sum once a year, depending on performance.

Pay for HKMA staff is reviewed annually by the FS in light of recommendations made to him by the GSC, taking into account the GSC's assessment of the performance of the HKMA in the preceding year, the pay survey findings of the financial sector conducted by independent human resources consultants, and any other relevant factors. Special pay adjustments may be made from time to time to reward individual meritorious staff members and to maintain the competitiveness of their pay.

Any approved annual adjustments to the fixed pay and any variable pay are awarded to individual staff members based on their performance. Investment staff members are subject to a variable pay system that seeks to strengthen the link between their investment performance and remuneration award. The pay adjustments and awards for individual staff members at the ranks of Executive Director and above are separately discussed and approved by the FS on the advice of the GSC. The staff members concerned are not present at the meetings when their pay is discussed. Pay adjustments and awards for individual staff members at the ranks of Division Head and below are determined by the Chief Executive of the HKMA under delegated authority from the FS.

Remuneration of senior staff members

The remuneration packages of senior staff members in 2022 are shown in Table 4.

Table 4 Remuneration packages of senior staff members in 2022[a]

HK$'000	Chief Executive	Deputy Chief Executive/ Senior Executive Director (average)	Executive Director (average)
Number of staff members[b]	1	5	13
Annualised pay			
Fixed pay	7,084	5,876	4,389
Variable pay	2,172	1,821	1,123
Other benefits[c]	1,063	918	683

a. Except for annual leave accrued, the actual remuneration received by staff members who did not serve out a full year is annualised for the purpose of calculating the average annual package for the rank.

b. The number of staff members in this table includes those who did not serve out a full year. The senior staff members include the Chief Executive Officer of The Hong Kong Mortgage Corporation Limited, the Special Adviser to the Chief Executive of the HKMA and the Deputy Chief Executive Officer of the Exchange Fund Investment Office.

c. Other benefits include provident funds or gratuity as the case may be, medical and life insurance, and annual leave accrued during the year. The provision of these benefits varies among senior staff members, depending on individual terms of service.

Corporate Functions

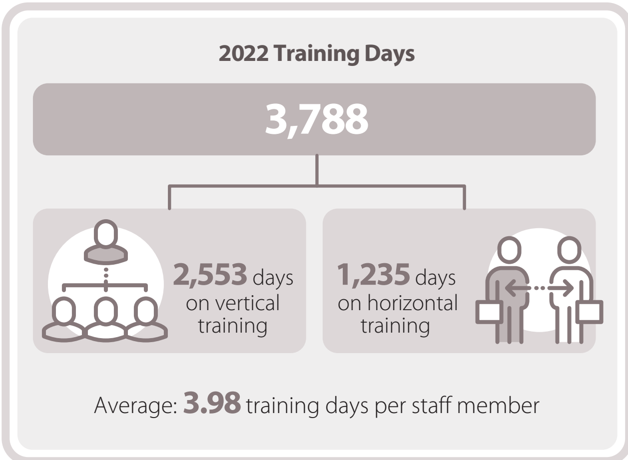
Staff development

The HKMA gives high priority to developing its staff's capabilities to cater for operational needs and career development, and to enhance their adaptability to new challenges. Considerable efforts are devoted to training each staff member's vertical (job-specific) and horizontal (general) skills according to the identified individual and organisational needs. During 2022, a structured training curriculum was launched to enhance staff's professional development with respect to their work and ranks. To keep staff abreast of the latest financial developments and support various functional areas, the HKMA organised topical briefings and thematic talks on its work and emerging trends, including topics such as the Mainland market, green finance, climate risk management, and fintech security and development. Leadership development programme for senior staff was organised to equip them with the relevant skills and insights to lead the organisation effectively.

Leadership development programme – Executive Presence

Emotional Intelligence for Leaders

Presentation Skills Workshop



The Continuous Capacity Development Programme is in place to encourage a culture of continuous learning and to strengthen the competency level of the HKMA staff. There is a training sponsorship scheme that supports staff members in pursuing studies relevant to the work of the HKMA, as well as reimbursement of membership fees of relevant professional bodies that supports professional development of staff members.

To enhance work exposure and promote cross-fertilisation of skills and experience, the HKMA encourages staff members to rotate across different job areas, for example through a posting to the HKMA's New York Office, or a secondment to HKMA-related organisations, other regulatory authorities or the Government. Secondments to international organisations, such as the International Monetary Fund and the Bank for International Settlements, are also arranged so staff members can participate in activities and policy initiatives in which Hong Kong or the HKMA plays a key role. Some staff members are deployed on a full-time or part-time basis to provide support to the HKDPB and the Hong Kong Academy of Finance.

Opportunities for graduates and students to join the HKMA

Manager Trainee and Graduate Economist Programmes

To develop a pool of young talents with sharp analytical minds, strong communication skills and good team spirit for a long-term career in central banking, the HKMA runs two trainee programmes: the Manager Trainee (MT) Programme and the Graduate Economist (GE) Programme. Each programme lasts for two years.

For the young talents who are interested in central banking work, the MT Programme prepares them for future key management roles within the HKMA, contributing to the financial stability and prosperity of Hong Kong. Each MT undergoes on-the-job training in two or three departments to acquire hands-on experience in the important functions of the HKMA. The GE Programme, on the other hand, offers young graduates interested in economic research the opportunity to harness their research skills in two or three departments to contribute to the policy formulation process.

Both programmes provide an all-round career development environment for the trainees. Apart from on-the-job training, the MTs and GEs also attend courses or briefings related to central banking. They also participate in mentorship and buddy programmes, special research projects and internal staff events. Upon successful completion of the respective programmes, MTs are offered appointments as Managers and GEs as Economists to pursue a career in the organisation.

Assistant Managers

Assistant Managers (AMs) form an important backbone of the HKMA's professional staff. Most AMs work in the banking departments to promote the safety and stability of Hong Kong's banking system. A small number of AMs work in other functional areas, providing analytical and other forms of support. The AM position is a good career starting point for young graduates with a keen interest in banking supervision and regulatory work.

Internship programmes

The HKMA runs summer and winter internship programmes for undergraduates to equip them with practical work experience and insights about the roles of a central bank. Talks and visits are provided to give the interns a better understanding of the functions and work of the HKMA.

Corporate Functions

Talk on the LERS for Interns

Interns visiting the Information Centre

Training on effective English writing for MTs

Management Skills Training for graduated MTs

The Exchange Fund

- Report of the Director of Audit
- Exchange Fund Financial Statements

Report of the Director of Audit

Audit Commission
The Government of the Hong Kong Special Administrative Region

Independent Auditor's Report
To the Financial Secretary

Opinion

I certify that I have audited the financial statements of the Exchange Fund and its subsidiaries ("the Group") set out on pages 179 to 281, which comprise the balance sheets of the Exchange Fund and of the Group as at 31 December 2022, and their income and expenditure accounts, statements of comprehensive income, statements of changes in equity and statements of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In my opinion, the financial statements give a true and fair view of the financial position of the Fund and of the Group as at 31 December 2022, and of their financial performance and 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 accordance with the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance (Cap. 66).

Basis for opinion

I conducted my audit in accordance with the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance and the Audit Commission auditing standards. My responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of my report. I am independent of the Group in accordance with those standards, and I have fulfilled my other ethical responsibilities in accordance with those standards. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key audit matters

Key audit matters are those matters that, in my professional judgment, were of most significance in my audit of the financial statements for the year ended 31 December 2022. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Report of the Director of Audit (continued)

Key audit matter	How the matter was addressed in my audit
Valuation of financial assets and financial liabilities at fair value *Refer to notes 2.5, 2.6 and 38.1 to the financial statements.*	
As at 31 December 2022, the Group had financial assets totalling HK$3,836,182 million and financial liabilities totalling HK$1,207,498 million valued at fair value. For 87% of these financial assets and all these financial liabilities, their fair values were quoted prices in active markets for identical assets or liabilities (Level 1 inputs) or were estimated using valuation techniques with inputs based on observable market data (Level 2 inputs). For the remaining 13% of these financial assets, their fair values were estimated using valuation techniques with inputs not based on observable market data (Level 3 inputs). Such financial assets totalled HK$487,694 million, including mainly unlisted investment funds. Given the substantial amount and the estimations involved, valuation of financial assets and financial liabilities at fair value was a key audit matter.	The audit procedures on valuation of financial assets and financial liabilities at fair value included: – obtaining an understanding of the procedures, including relevant controls, for valuing different categories of financial assets and financial liabilities; – evaluating and testing the controls, including relevant application controls of the computer systems; – obtaining external confirmations on the valuation, existence, rights and obligations and completeness of the financial assets and financial liabilities; – where quoted market prices were used, verifying the prices to independent sources; – where valuation techniques with inputs based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions, and verifying the inputs to independent sources; and – where valuation techniques with inputs not based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions and inputs.
Valuation of investment properties at fair value *Refer to notes 2.11, 18 and 19 to the financial statements.*	
The Group's investment properties were stated at their fair values, totalling HK$23,394 million as at 31 December 2022. The Group also had interests in four associates and twenty two joint ventures totalling HK$39,631 million, whose principal activities were holding overseas investment properties. The fair values of these investment properties, whether held by the Group directly or by associates or joint ventures, were mainly determined based on valuations by independent professional valuers. Such valuations involved significant judgments and estimates, including the valuation methodologies and the assumptions used.	The audit procedures on valuation of investment properties at fair value included: – obtaining and reviewing the valuation reports of investment properties held by the Group directly or by associates or joint ventures, and verifying that the fair values were based on the valuations stated in the valuation reports; – assessing the independence and qualifications of the valuers; and – evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions and inputs.

Other information

The Monetary Authority is responsible for the other information. The other information comprises all the information included in the 2022 Annual Report of the Hong Kong Monetary Authority, other than the financial statements and my auditor's report thereon.

My opinion on the financial statements does not cover the other information and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

Responsibilities of the Monetary Authority and the Audit Sub-Committee of the Exchange Fund Advisory Committee for the financial statements

The Monetary Authority is responsible for the preparation of the financial statements that give a true and fair view in accordance with HKFRSs issued by the HKICPA and the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance, and for such internal control as the Monetary Authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Monetary Authority is 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.

The Audit Sub-Committee of the Exchange Fund Advisory Committee is responsible for overseeing the Group's financial reporting process.

Auditor's responsibilities for the audit of the financial statements

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

As part of an audit in accordance with the Audit Commission auditing standards, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

– identify and assess the risks of material misstatement of the 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 my 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;

Report of the Director of Audit (continued)

- 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 Monetary Authority;

- conclude on the appropriateness of the Monetary Authority's 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 I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my 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 financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation; and

- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with the Audit Sub-Committee of the Exchange Fund Advisory 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 I identify during my audit.

I also provide the Audit Sub-Committee of the Exchange Fund Advisory Committee with a statement that I 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 my independence, and where applicable, related safeguards.

From the matters communicated with the Audit Sub-Committee of the Exchange Fund Advisory Committee, I determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Prof. LAM Chi Yuen Nelson
Director of Audit

Audit Commission
6th Floor, High Block
Queensway Government Offices
66 Queensway
Hong Kong

11 April 2023

Contents

Exchange Fund – Income and Expenditure Account

for the year ended 31 December 2022

(Expressed in millions of Hong Kong dollars)	Note	Group 2022	Group 2021	Fund 2022	Fund 2021
INCOME					
Interest income		**53,419**	21,710	**49,890**	20,159
Dividend income		**17,439**	20,371	**13,367**	13,983
(Loss)/Income from investment properties		**(733)**	1,158	**–**	–
Net realised and unrealised (losses)/gains		**(230,761)**	135,805	**(205,195)**	30,464
Net exchange (loss)/gain		**(42,479)**	15,951	**(40,045)**	16,817
Investment (losses)/income	4(a)	**(203,115)**	194,995	**(181,983)**	81,423
Bank licence fees		**119**	124	**119**	124
Net premiums earned	5	**2,957**	2,872	**–**	–
Other income		**614**	623	**87**	75
TOTAL INCOME		**(199,425)**	198,614	**(181,777)**	81,622
EXPENDITURE					
Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	4(b)	**(48,109)**	(109,850)	**(48,109)**	(109,850)
Other interest expense	4(c)	**(16,601)**	(1,645)	**(14,318)**	(2,720)
Operating expenses	4(d)	**(6,437)**	(6,640)	**(5,055)**	(5,323)
Note and coin expenses	4(e)	**(212)**	(210)	**(212)**	(210)
(Charge for)/Reversal of impairment allowances	4(f)	**(5)**	18	**1**	–
Net claims incurred, benefits paid and movement in policyholders' liabilities	5	**(3,578)**	(4,079)	**–**	–
TOTAL EXPENDITURE		**(74,942)**	(122,406)	**(67,693)**	(118,103)
(DEFICIT)/SURPLUS BEFORE SHARE OF (LOSS)/PROFIT OF ASSOCIATES AND JOINT VENTURES		**(274,367)**	76,208	**(249,470)**	(36,481)
Share of (loss)/profit of associates and joint ventures, net of tax		**(4,706)**	3,812	**–**	–
Gain on disposal of a joint venture		**–**	188	**–**	–
(DEFICIT)/SURPLUS BEFORE TAXATION		**(279,073)**	80,208	**(249,470)**	(36,481)
Income tax	6	**(275)**	(641)	**–**	–
(DEFICIT)/SURPLUS FOR THE YEAR		**(279,348)**	79,567	**(249,470)**	(36,481)
(DEFICIT)/SURPLUS FOR THE YEAR ATTRIBUTABLE TO:					
Owner of the Fund		**(278,889)**	79,268	**(249,470)**	(36,481)
Non-controlling interests		**(459)**	299	**–**	–
		(279,348)	79,567	**(249,470)**	(36,481)

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Statement of Comprehensive Income

for the year ended 31 December 2022

(Expressed in millions of Hong Kong dollars)	Group 2022	Group 2021	Fund 2022	Fund 2021
(DEFICIT)/SURPLUS FOR THE YEAR	**(279,348)**	79,567	**(249,470)**	(36,481)
OTHER COMPREHENSIVE LOSS				
Items that will not be reclassified to income and expenditure account				
Equity securities measured at fair value through other comprehensive income				
– fair value changes	**(72)**	(34)	**(72)**	(34)
Items that are or may be reclassified subsequently to income and expenditure account				
Debt securities measured at fair value through other comprehensive income				
– fair value changes	**(18)**	8	**–**	–
Cash flow hedges				
– fair value changes	**139**	–	**–**	–
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	**(2,766)**	(1,208)	**–**	–
OTHER COMPREHENSIVE LOSS FOR THE YEAR, NET OF TAX	**(2,717)**	(1,234)	**(72)**	(34)
TOTAL COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR	**(282,065)**	78,333	**(249,542)**	(36,515)
TOTAL COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR ATTRIBUTABLE TO:				
Owner of the Fund	**(281,580)**	78,040	**(249,542)**	(36,515)
Non-controlling interests	**(485)**	293	**–**	–
	(282,065)	78,333	**(249,542)**	(36,515)

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Balance Sheet

as at 31 December 2022

(Expressed in millions of Hong Kong dollars)	Note	Group 2022	Group 2021	Fund 2022	Fund 2021
ASSETS					
Cash and money at call	8	**209,717**	185,467	**203,850**	179,229
Placements with banks and other financial institutions	9	**197,416**	164,268	**164,908**	121,596
Financial assets measured at fair value through income and expenditure account	10	**3,830,723**	4,492,896	**3,396,187**	4,035,011
Financial assets measured at fair value through other comprehensive income	11	**2,508**	4,983	**1,264**	1,336
Derivative financial instruments	12(a)	**2,951**	4,596	**1,534**	3,628
Debt securities measured at amortised cost	13	**13,143**	11,207	**–**	–
Loan portfolio	14	**109,391**	87,412	**–**	–
Gold	15	**945**	948	**945**	948
Other assets	16	**40,222**	30,501	**31,947**	25,230
Interests in subsidiaries	17	**–**	–	**204,156**	200,158
Interests in associates and joint ventures	18	**41,638**	47,545	**116**	54
Investment properties	19	**23,394**	27,089	**–**	–
Property, plant and equipment	20	**3,453**	3,353	**3,131**	2,965
TOTAL ASSETS		**4,475,501**	5,060,265	**4,008,038**	4,570,155
LIABILITIES AND EQUITY					
Certificates of Indebtedness	21	**605,959**	592,364	**605,959**	592,364
Government-issued currency notes and coins in circulation	21	**13,160**	13,126	**13,160**	13,126
Balance of the banking system	22	**96,251**	377,516	**96,251**	377,516
Placements by banks and other financial institutions	23	**99,455**	–	**99,455**	–
Placements by Fiscal Reserves	24	**765,189**	973,303	**765,189**	973,303
Placements by HKSAR Government funds and statutory bodies	25	**449,041**	394,249	**449,041**	394,249
Placements by subsidiaries	26	**–**	–	**30,588**	26,237
Exchange Fund Bills and Notes issued	27	**1,200,323**	1,148,569	**1,200,323**	1,148,569
Derivative financial instruments	12(a)	**7,175**	2,292	**2,833**	1,667
Bank loans	28	**14,714**	16,130	**–**	–
Other debt securities issued	29	**131,683**	116,334	**–**	–
Other liabilities	30	**222,931**	274,662	**187,998**	236,341
Total liabilities		**3,605,881**	3,908,545	**3,450,797**	3,763,372

Exchange Fund – Balance Sheet (continued)

as at 31 December 2022

	Group		Fund	
(Expressed in millions of Hong Kong dollars)	**2022**	2021	**2022**	2021
Accumulated surplus	**871,136**	1,150,025	**556,470**	805,940
Revaluation reserve	**770**	860	**771**	843
Hedging reserve	**139**	–	**–**	–
Translation reserve	**(4,042)**	(1,302)	**–**	–
Total equity attributable to owner of the Fund	**868,003**	1,149,583	**557,241**	806,783
Non-controlling interests	**1,617**	2,137	**–**	–
Total equity	**869,620**	1,151,720	**557,241**	806,783
TOTAL LIABILITIES AND EQUITY	**4,475,501**	5,060,265	**4,008,038**	4,570,155

Eddie Yue
Monetary Authority
11 April 2023

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Statement of Changes in Equity

for the year ended 31 December 2022

	Attributable to owner of the Fund						
(Expressed in millions of Hong Kong dollars)	Accumulated surplus	Revaluation reserve	Hedging reserve	Translation reserve	Total attributable to owner of the Fund	Non-controlling interests	Total
Group							
At 1 January 2021	1,070,757	886	–	(100)	1,071,543	1,916	1,073,459
Surplus for the year	79,268	–	–	–	79,268	299	79,567
Other comprehensive loss for the year	–	(26)	–	(1,202)	(1,228)	(6)	(1,234)
Total comprehensive income for the year	79,268	(26)	–	(1,202)	78,040	293	78,333
Deemed acquisition of a subsidiary	–	–	–	–	–	27	27
Capital distribution to non-controlling interests	–	–	–	–	–	(94)	(94)
Dividends paid to non-controlling interests	–	–	–	–	–	(5)	(5)
At 31 December 2021	1,150,025	860	–	(1,302)	1,149,583	2,137	1,151,720
At 1 January 2022	**1,150,025**	**860**	**–**	**(1,302)**	**1,149,583**	**2,137**	**1,151,720**
Deficit for the year	**(278,889)**	**–**	**–**	**–**	**(278,889)**	**(459)**	**(279,348)**
Other comprehensive loss for the year	**–**	**(90)**	**139**	**(2,740)**	**(2,691)**	**(26)**	**(2,717)**
Total comprehensive loss for the year	**(278,889)**	**(90)**	**139**	**(2,740)**	**(281,580)**	**(485)**	**(282,065)**
Capital distribution to non-controlling interests	**–**	**–**	**–**	**–**	**–**	**(32)**	**(32)**
Dividends paid to non-controlling interests	**–**	**–**	**–**	**–**	**–**	**(3)**	**(3)**
At 31 December 2022	**871,136**	**770**	**139**	**(4,042)**	**868,003**	**1,617**	**869,620**

Exchange Fund – Statement of Changes in Equity (continued)

for the year ended 31 December 2022

(Expressed in millions of Hong Kong dollars)	Accumulated surplus	Revaluation reserve	Total attributable to owner of the Fund
Fund			
At 1 January 2021	842,421	877	843,298
Deficit for the year	(36,481)	–	(36,481)
Other comprehensive loss for the year	–	(34)	(34)
Total comprehensive loss for the year	(36,481)	(34)	(36,515)
At 31 December 2021	805,940	843	806,783
At 1 January 2022	**805,940**	**843**	**806,783**
Deficit for the year	**(249,470)**	**–**	**(249,470)**
Other comprehensive loss for the year	**–**	**(72)**	**(72)**
Total comprehensive loss for the year	**(249,470)**	**(72)**	**(249,542)**
At 31 December 2022	**556,470**	**771**	**557,241**

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Statement of Cash Flows

for the year ended 31 December 2022

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	**2022**	2021	**2022**	2021
Cash flows from operating activities					
(Deficit)/Surplus before taxation		**(279,073)**	80,208	**(249,470)**	(36,481)
Adjustments for:					
Interest income	4(a)	**(53,419)**	(21,710)	**(49,890)**	(20,159)
Dividend income	4(a)	**(17,439)**	(20,371)	**(13,367)**	(13,983)
Change in fair value of investment properties	4(a)	**2,000**	123	**–**	–
Gain on disposal of debt securities measured at amortised cost	4(a)	**–**	(3)	**–**	–
Interest expense	4(b) & 4(c)	**64,710**	111,495	**62,427**	112,570
Depreciation	4(d)	**380**	377	**277**	260
Charge for/(Reversal of) impairment allowances	4(f)	**5**	(18)	**(1)**	–
Share of loss/(profit) of associates and joint ventures		**4,706**	(3,812)	**–**	–
Gain on disposal of a joint venture		**–**	(188)	**–**	–
Exchange differences and other non-cash items		**11,039**	(302)	**6,894**	(2,284)
Interest received		**49,926**	22,646	**46,666**	20,823
Dividends received		**17,623**	20,191	**12,807**	12,356
Interest paid		**(120,708)**	(95,914)	**(119,369)**	(95,351)
Income tax paid		**(343)**	(164)	**–**	–
		(320,593)	92,558	**(303,026)**	(22,249)
Change in fair value of derivatives and other debt securities issued		**2,470**	(7,508)	**3,205**	(7,194)
Change in carrying amount of:					
– placements with banks and other financial institutions		**17,576**	(29,927)	**(9,112)**	(6,006)
– financial assets measured at fair value through income and expenditure account		**655,953**	(105,004)	**636,968**	886
– loan portfolio		**(21,997)**	(37,950)	**–**	–
– gold		**3**	31	**3**	31
– other assets		**(6,012)**	15,031	**(3,650)**	17,465
– Certificates of Indebtedness, government-issued currency notes and coins in circulation		**13,629**	36,442	**13,629**	36,442
– balance of the banking system		**(281,265)**	(79,950)	**(281,265)**	(79,950)
– placements by banks and other financial institutions		**99,455**	(87,650)	**99,455**	(87,650)
– placements by Fiscal Reserves		**(208,114)**	91,471	**(208,114)**	91,471
– placements by HKSAR Government funds and statutory bodies		**54,792**	51,778	**54,792**	51,778
– placements by subsidiaries		**–**	–	**4,351**	10,768
– Exchange Fund Bills and Notes issued		**51,754**	79,689	**51,754**	79,689
– other liabilities		**4,261**	9,887	**8,680**	(6,917)
Net cash from operating activities		**61,912**	28,898	**67,670**	78,564

Exchange Fund – Statement of Cash Flows (continued)

for the year ended 31 December 2022

(Expressed in millions of Hong Kong dollars)	Note	Group 2022	Group 2021	Fund 2022	Fund 2021
Cash flows from investing activities					
Proceeds from sale or redemption of financial assets measured at fair value through other comprehensive income		**2,949**	767	**–**	–
Purchase of financial assets measured at fair value through other comprehensive income		**(660)**	–	**–**	–
Proceeds from sale or redemption of debt securities measured at amortised cost		**1,845**	1,364	**–**	–
Purchase of debt securities measured at amortised cost		**(3,993)**	(2,745)	**–**	–
Investments in subsidiaries		**–**	–	**(2,500)**	(2,500)
Net cash inflow from deemed acquisition of a subsidiary		**–**	64	**–**	–
(Increase)/Decrease in loans to subsidiaries		**–**	–	**(1,498)**	3,048
Increase in interests in associates and joint ventures		**(444)**	(3,182)	**(62)**	(54)
Proceeds from disposal of a joint venture		**–**	667	**–**	–
Additions of investment properties		**(791)**	(495)	**–**	–
Additions of property, plant and equipment		**(451)**	(276)	**(413)**	(204)
Dividends received from subsidiaries		**–**	–	**744**	1,447
Net cash (used in)/from investing activities		**(1,545)**	(3,836)	**(3,729)**	1,737
Cash flows from financing activities					
Bank loans raised	31(c)	**–**	1,498	**–**	–
Repayment of bank loans	31(c)	**(22)**	–	**–**	–
Proceeds from issue of other debt securities	31(c)	**97,470**	109,360	**–**	–
Redemption of other debt securities issued	31(c)	**(77,622)**	(55,533)	**–**	–
Principal portion of lease payments	31(c)	**(121)**	(115)	**(83)**	(77)
Capital distribution to non-controlling interests		**(32)**	(94)	**–**	–
Dividends paid to non-controlling interests		**(3)**	(5)	**–**	–
Net cash from/(used in) financing activities		**19,670**	55,111	**(83)**	(77)
Net increase in cash and cash equivalents		**80,037**	80,173	**63,858**	80,224
Cash and cash equivalents at 1 January		**370,953**	288,498	**353,486**	270,978
Effect of foreign exchange rate changes		**(6,922)**	2,282	**(6,894)**	2,284
Cash and cash equivalents at 31 December	31(a)	**444,068**	370,953	**410,450**	353,486

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Notes to the Financial Statements

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

1 PRINCIPAL ACTIVITIES

The Monetary Authority, under delegated authority from the Financial Secretary as Controller of the Exchange Fund (the Fund), manages the Fund in accordance with the provisions of the Exchange Fund Ordinance (Cap. 66). The principal activities of the Fund are safeguarding the exchange value of the currency of Hong Kong and maintaining the stability and integrity of Hong Kong's monetary and financial systems.

The assets of the Fund are managed as four portfolios: the Backing Portfolio, the Investment Portfolio, the Long-Term Growth Portfolio and the Strategic Portfolio. The assets of the Backing Portfolio fully match the Monetary Base, under Hong Kong's Currency Board system. The Investment Portfolio is invested primarily in the bond and equity markets of the member countries of the Organisation for Economic Co-operation and Development (OECD). The Long-Term Growth Portfolio holds private equity and real estate investments. The Strategic Portfolio holds shares in Hong Kong Exchanges and Clearing Limited acquired by the Hong Kong Special Administrative Region (HKSAR) Government for the account of the Fund for strategic purposes. Operating segment information is set out in note 32.

2 SIGNIFICANT ACCOUNTING POLICIES

2.1 Statement of compliance

These financial statements have been prepared in accordance with Hong Kong Financial Reporting Standards (HKFRSs), which is a collective term that includes all applicable individual HKFRSs, Hong Kong Accounting Standards and Interpretations issued by the Hong Kong Institute of Certified Public Accountants (HKICPA), and accounting principles generally accepted in Hong Kong. A summary of the significant accounting policies adopted by the Fund and its subsidiaries (together referred to as the Group) is set out below.

The HKICPA has issued certain new or revised HKFRSs that are first effective or available for early adoption for the current accounting period of the Group. Note 3 provides information on the changes, if any, in accounting policies resulting from initial application of these developments to the extent that they are relevant to the Group for the current and prior accounting periods reflected in these financial statements.

2.2 Basis of preparation of the financial statements

The Group financial statements include the financial statements of the Group as well as the Group's interests in associates and joint ventures. The principal activities of the principal subsidiaries, associates and joint ventures are shown in notes 17 and 18.

The measurement basis used in the preparation of the financial statements is historical cost except for the following assets and liabilities that are measured at fair value:

– derivative financial instruments (note 2.6);

– financial assets and financial liabilities measured at fair value through income and expenditure account (note 2.6);

– financial assets measured at fair value through other comprehensive income (note 2.6);

– gold (note 2.10); and

– investment properties (note 2.11).

The preparation of financial statements in conformity with HKFRSs requires management to make judgements, estimates and assumptions that affect the application of policies and the reported amounts of assets, liabilities, income and expenditure. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Judgements made by management in the application of HKFRSs that have significant effect on the financial statements and major sources of estimation uncertainty are disclosed in note 2.19.

2.3 Subsidiaries and non-controlling interests

A subsidiary is an entity controlled by the Group. The Group controls an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing whether the Group has power, only substantive rights (held by the Group and other parties) are considered.

An investment in a subsidiary is consolidated into the Group financial statements from the date that control commences until the date that control ceases.

Intra-group balances, transactions and cash flows and any unrealised profits and losses arising from intra-group transactions are eliminated in full in preparing the Group financial statements.

Non-controlling interests represent the equity in a subsidiary not attributable directly or indirectly to the Fund, and in respect of which the Group has not agreed any additional terms with the holders of those interests which would result in the Group as a whole having a contractual obligation in respect of those interests that meets the definition of a financial liability. Non-controlling interests are presented in the Group balance sheet within equity, separately from equity attributable to the owner of the Fund. Non-controlling interests in the results of the Group are presented on the face of the Group income and expenditure account and statement of comprehensive income as an allocation of the surplus or deficit and total comprehensive income or loss for the year between non-controlling interests and the owner of the Fund.

In the balance sheet of the Fund, its investments in subsidiaries are stated at cost less impairment losses, if any (note 2.14).

In an acquisition of a subsidiary, when a group of assets acquired and liabilities assumed does not constitute a business, the overall acquisition cost is allocated to the individual identifiable assets and liabilities based on their relative fair values at the date of acquisition. Such acquisition does not give rise to any goodwill.

2.4 Associates and joint ventures

An associate is an entity in which the Group has significant influence, but not control or joint control, over its management, through its power to participate in the financial and operating policy decisions.

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

An interest in an associate or a joint venture is accounted for in the Group financial statements under the equity method and is initially recorded at cost, adjusted for any excess or deficit of the Group's share of the acquisition-date fair values of the investee's identifiable net assets over the cost of the investment, if any. Thereafter, the investment is adjusted for the post acquisition change in the Group's share of the net assets of the associate or the joint venture and any impairment loss relating to the investment.

The Group income and expenditure account and statement of comprehensive income include the Group's share of the post-tax results of the associates and the joint ventures for the year. When the Group's share of losses exceeds its interest in the associates or the joint ventures, the Group's interest is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associates or the joint ventures. For this purpose, the Group's interest is the carrying amount of the investment under the equity method together with the Group's long-term interests that in substance form part of the Group's net investment in the associates or the joint ventures.

Unrealised profits and losses resulting from transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interests in the associates or the joint ventures.

When the Group ceases to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in the associate or the joint venture, with a resulting gain or loss being recognised in the Group income and expenditure account. Any interest retained in the associate or the joint venture at the date when significant influence or joint control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (note 2.6).

In the balance sheet of the Fund, interests in associates and joint ventures are stated at cost less impairment losses, if any (note 2.14).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.5 Fair value measurement

The Group measures certain financial instruments, all investment properties and gold at fair value at each reporting date. The fair values of financial instruments measured at amortised cost are disclosed in note 38.2.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

(a) in the principal market for the asset or liability; or

(b) in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

The Group measures fair values using the following fair value hierarchy that reflects the significance of inputs used in making the measurements:

(a) Level 1 – fair values are quoted prices (unadjusted) in active markets for identical assets or liabilities;

(b) Level 2 – fair values are determined involving inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices); and

(c) Level 3 – fair values are determined with inputs that are not based on observable market data (unobservable inputs).

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the reporting date.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6 Financial assets and financial liabilities

2.6.1 Initial recognition and measurement

The Group recognises financial assets and financial liabilities on the date it becomes a party to the contractual provisions of the instrument. Regular way purchases and sales of financial instruments are recognised on trade date, the date on which the Group commits to purchase or sell the instruments.

At initial recognition, financial assets and financial liabilities are measured at fair value plus or minus, in the case of a financial asset or financial liability not at fair value through income and expenditure account, transaction costs that are directly attributable to the acquisition of the financial assets or the issue of the financial liabilities. Transaction costs of financial assets and financial liabilities at fair value through income and expenditure account are expensed immediately.

2.6.2 Classification and subsequent measurement

The Group classifies its financial assets into three categories for determining the subsequent measurement methods, on the basis of both the Group's business model for managing the assets and the contractual cash flow characteristics of the assets. The three measurement categories are:

– fair value through income and expenditure account (which is equivalent to the term "fair value through profit or loss" under HKFRS 9 "Financial Instruments");

– fair value through other comprehensive income; and

– amortised cost.

The Group classifies its financial liabilities as subsequently measured at fair value through income and expenditure account, or other financial liabilities.

Financial liabilities measured at fair value through income and expenditure account include those that are irrevocably designated by the Group at initial recognition as at fair value through income and expenditure account when doing so results in more relevant information because either:

(a) the designation eliminates or significantly reduces an accounting mismatch which would otherwise arise; or

(b) a group of financial liabilities or financial assets and liabilities is managed and its performance is evaluated on a fair value basis in accordance with a documented risk management or investment strategy.

Financial liabilities measured at fair value through income and expenditure account also include contracts that contain embedded derivatives which significantly modify the cash flows otherwise required.

The Group reclassifies a financial asset when and only when it changes its business model for managing the asset, except for equity securities elected to be measured at fair value through other comprehensive income at initial recognition (note 2.6.2.2). A financial liability is not reclassified.

An analysis of the Group's financial assets and financial liabilities by category is set out in note 7.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.1 Debt securities

The Group classifies its debt securities as measured at (a) amortised cost, (b) fair value through other comprehensive income or (c) fair value through income and expenditure account, depending on the Group's business model in managing them and their contractual cash flow characteristics.

(a) Debt securities measured at amortised cost

Debt securities are measured at amortised cost if they are held within a business model whose objective is to hold them for collection of contractual cash flows and the contractual cash flows represent solely payments of principal and interest. Debt securities in this category are initially recognised at fair value plus directly attributable transaction costs and subsequently carried at amortised cost. Interest income on these debt securities is recognised in the income and expenditure account using the effective interest method.

The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability and of allocating and recognising the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts or payments through the expected life of the financial asset or financial liability to the gross carrying amount of the financial asset or to the amortised cost of the financial liability. When calculating the effective interest rate, the Group estimates cash flows by considering all contractual terms of the financial instrument but does not consider the expected credit losses. The calculation includes all fees received or paid between parties to the contract that are an integral part of the effective interest rate, transaction costs and all other premiums or discounts.

The measurement of loss allowances for debt securities measured at amortised cost is based on the expected credit loss model as described in note 2.9.

(b) Debt securities measured at fair value through other comprehensive income

Debt securities are measured at fair value through other comprehensive income if they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling them and the contractual cash flows represent solely payments of principal and interest. Debt securities in this category are initially recognised at fair value plus directly attributable transaction costs and subsequently carried at fair value. Movements in the carrying amount of these securities are recognised in other comprehensive income, except for interest income, foreign exchange gains or losses, and impairment losses or reversals which are recognised in the income and expenditure account. Upon derecognition, the cumulative gain or loss previously recognised in other comprehensive income is reclassified from equity to the income and expenditure account.

The measurement of loss allowances for debt securities measured at fair value through other comprehensive income is based on the expected credit loss model as described in note 2.9. The loss allowances are recognised in other comprehensive income and do not reduce the carrying amount of such debt securities in the balance sheet.

(c) Debt securities measured at fair value through income and expenditure account

Debt securities that do not meet the criteria for being measured at amortised cost or fair value through other comprehensive income are measured at fair value through income and expenditure account. Debt securities in this category are initially recognised at fair value with transaction costs immediately charged to the income and expenditure account, and subsequently carried at fair value. Changes in fair value of these securities are recognised in the income and expenditure account in the period in which they arise.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.2 Equity securities and investment funds

Equity securities are measured at fair value through income and expenditure account, unless an election is made to designate them at fair value through other comprehensive income upon initial recognition.

For equity securities measured at fair value through income and expenditure account, changes in fair value are recognised in the income and expenditure account in the period in which they arise.

The Group classifies certain equity securities, which are held for strategic or longer term investment purposes, as measured at fair value through other comprehensive income. The election of fair value through other comprehensive income is made upon initial recognition on an instrument-by-instrument basis and once made is irrevocable. Gains and losses on these equity securities are recognised in other comprehensive income, which are not reclassified subsequently to the income and expenditure account, including when they are derecognised. Dividends on such investments are recognised in the income and expenditure account unless the dividends clearly represent a recovery of part of the cost of the investment.

Investment funds are measured at fair value through income and expenditure account. Changes in fair value of these funds are recognised in the income and expenditure account in the period in which they arise.

2.6.2.3 Derivative financial instruments and hedge accounting

Derivatives are initially recognised at fair value on the date on which a derivative contract is entered into and are subsequently measured at their fair values. Fair values are obtained from market prices in active markets, including recent market transactions, and valuation techniques, including discounted cash flow models and options pricing models, as appropriate. Derivatives are carried as assets when their fair value is positive and as liabilities when their fair value is negative.

The best evidence of the fair value of a derivative at initial recognition is the transaction price (i.e. the fair value of the consideration given or received).

Certain derivatives embedded in other financial instruments are treated as separate derivatives when their economic characteristics and risks are not closely related to those of the host contract and the host contract is not carried at fair value through income and expenditure account. These embedded derivatives are measured at fair value through income and expenditure account.

The method of recognising the resulting fair value gain or loss depends on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged. The Group designates certain derivatives as either (a) hedges of the fair value of recognised assets or liabilities or unrecognised firm commitments (fair value hedge) or (b) hedges of highly probable future cash flows attributable to a recognised asset or liability, or a forecast transaction (cash flow hedge). Hedge accounting is used for derivatives designated in this way provided that certain criteria are met.

The Group documents, at the inception of the transaction, the relationship between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of hedged items.

(a) Fair value hedge

Changes in the fair value of derivatives that are designated and qualified as fair value hedges are recorded in the income and expenditure account, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk.

If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used, is amortised to the income and expenditure account over the period to maturity.

(b) Cash flow hedge

The effective portion of changes in the fair value of derivatives that are designated and qualified as cash flow hedges are recognised in other comprehensive income and accumulated in equity. The gain or loss relating to the ineffective portion is recognised immediately in the income and expenditure account.

Amounts accumulated in equity are recycled to the income and expenditure account in the periods in which the hedged item will affect the income and expenditure account.

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 in equity existing at that time remains in equity and is recognised when the forecast transaction is ultimately recognised in the income and expenditure account. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately transferred to the income and expenditure account.

(c) Derivatives not qualified as hedges for accounting purposes

Derivative instruments entered into as economic hedges that do not qualify for hedge accounting are held at fair value through income and expenditure account. Changes in the fair value of such derivative instruments are recognised in the income and expenditure account.

2.6.2.4 Other financial assets

Other financial assets are measured at amortised cost. This category includes cash and money at call, placements with banks and other financial institutions, and loan portfolio. The measurement of loss allowances for these financial assets is based on the expected credit loss model as described in note 2.9.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.5 Financial liabilities measured at fair value through income and expenditure account

The following financial liabilities are measured at fair value through income and expenditure account:

– Exchange Fund Bills and Notes (EFBN) issued which, on initial recognition, are irrevocably designated by the Group as at fair value through income and expenditure account; and

– other debt securities issued, which contain embedded derivatives that significantly modify the cash flows otherwise required.

Financial liabilities measured at fair value through income and expenditure account are initially recognised at fair value. Changes in fair value are recognised in the income and expenditure account, except for those changes arising from changes in the Group's own credit risk. Any changes in fair value of liabilities due to changes in the Group's own credit risk are recognised in other comprehensive income and the amount of such changes recognised in other comprehensive income is not reclassified subsequently to the income and expenditure account upon derecognition.

2.6.2.6 Other financial liabilities

Other financial liabilities are financial liabilities other than those measured at fair value through income and expenditure account.

Other financial liabilities repayable on demand are stated at the principal amount payable. These include Certificates of Indebtedness, government-issued currency notes and coins in circulation (note 2.6.2.7), balance of the banking system, placements by Fiscal Reserves (Operating and Capital Reserves), placements by the Bond Fund, placements by the Deposit Protection Scheme Fund and placements by The Hong Kong Mortgage Corporation Limited.

Other financial liabilities with a fixed maturity and a predetermined rate are carried at amortised cost using the effective interest method. These include placements by banks and other financial institutions, placements by HKSAR Government funds and statutory bodies (other than the Bond Fund and the Deposit Protection Scheme Fund), placements by subsidiaries (other than The Hong Kong Mortgage Corporation Limited), bank loans and other debt securities issued (other than those which contain embedded derivatives).

Placements by Fiscal Reserves (Future Fund) which are repayable on 31 December 2030 (unless otherwise directed by the Financial Secretary according to the terms of the placements) are stated at the principal amount payable. Interest payable on these placements is calculated at a composite rate determined annually (note 2.17.1) and compounded on an annual basis until maturity. If the composite rate is negative for a year, the negative return will first be offset against the balance of interest payable, with the excess portion (if any) written off against the principal amount payable. When the composite rate turns positive in subsequent years, the return will be used to recover fully or partially the amount written off.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.7 Certificates of Indebtedness and government-issued currency notes and coins in circulation

As backing for the banknote issues, each note-issuing bank is required to hold a non-interest-bearing Certificate of Indebtedness issued by the Financial Secretary, which is redeemable on demand. Payments for the issue and redemption of banknotes against these Certificates are made in US dollars at the fixed exchange rate of US$1=HK$7.80. Consistent with the requirement for backing banknote issues with US dollars, the issue and redemption of government-issued currency notes and coins are conducted with an agent bank against US dollars at the fixed exchange rate of US$1=HK$7.80.

The Group's liabilities in respect of Certificates of Indebtedness represent the US dollars payable to the note-issuing banks on redemption of the Certificates. The Group's liabilities in respect of government-issued currency notes and coins represent the US dollars payable to the agent bank when they are redeemed. Certificates of Indebtedness in issue and government-issued currency notes and coins in circulation are stated in the financial statements at the Hong Kong dollar equivalent of the US dollars required for their redemption using the closing exchange rate at the reporting date.

2.6.3 Derecognition

A financial asset is derecognised when the contractual rights to receive the cash flows from the financial asset expire, or where the financial asset together with substantially all the risks and rewards of ownership have been transferred.

A financial liability is derecognised when the obligation specified in the contract is discharged, is cancelled or expires.

Liabilities for EFBN in issue are derecognised when they are repurchased as a result of market making activities. The repurchase is considered as redemption of the debt.

2.6.4 Offsetting

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

2.7 Repurchase and reverse repurchase transactions

Securities sold subject to a simultaneous agreement to repurchase these securities at a certain later date at a fixed price (repurchase agreements) are retained on the balance sheet without changes in their measurement. The proceeds from the sale are reported as liabilities in "placements by banks and other financial institutions" and are carried at amortised cost.

Conversely, securities purchased under agreements to resell (reverse repurchase agreements) are reported as receivables in "placements with banks and other financial institutions" and are carried at amortised cost.

Interest earned on reverse repurchase agreements and interest incurred on repurchase agreements are recognised as interest income and interest expense respectively, over the life of each agreement using the effective interest method.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.8 Securities lending agreements

Where securities are loaned with the receipt of cash or other securities as collateral, they are retained on the balance sheet without changes in their measurement. Where cash collateral is received, a liability is recorded in respect of the cash received in "placements by banks and other financial institutions". Securities received as collateral are not recognised in the financial statements.

2.9 Impairment of financial instruments

The Group applies a three-stage approach to measure expected credit losses and to recognise the corresponding loss allowances (provision in the case of loan commitments and financial guarantee contracts) and impairment losses or reversals, for financial instruments that are not measured at fair value through income and expenditure account, including mainly the following types of financial instruments:

– cash and money at call;

– placements with banks and other financial institutions;

– debt securities measured at amortised cost or fair value through other comprehensive income;

– loan portfolio;

– loan commitments; and

– financial guarantee contracts.

The change in credit risk since initial recognition determines the measurement bases for expected credit losses:

Stage 1: 12-month expected credit losses

For financial instruments for which there has not been a significant increase in credit risk since initial recognition, the portion of the lifetime expected credit losses that represent the expected credit losses that result from default events that are possible within the 12 months after the reporting date are recognised.

Stage 2: Lifetime expected credit losses – not credit impaired

For financial instruments for which there has been a significant increase in credit risk since initial recognition but that are not credit impaired, lifetime expected credit losses representing the expected credit losses that result from all possible default events over the expected life of the financial instruments are recognised.

Stage 3: Lifetime expected credit losses – credit impaired

For financial instruments that have become credit impaired, lifetime expected credit losses are recognised and interest income is calculated by applying the effective interest rate to the amortised cost rather than the gross carrying amount.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.9.1 *Determining significant increases in credit risk*

At each reporting date, the Group assesses whether there has been a significant increase in credit risk for financial instruments since initial recognition by comparing the risk of default occurring over the remaining expected life as at the reporting date with that as at the date of initial recognition. For this purpose, the date of initial recognition of loan commitments and financial guarantee contracts is the date that the Group becomes a party to the irrevocable commitment. The assessment considers quantitative and qualitative historical information as well as forward-looking information. A financial asset is assessed to be credit impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred.

The Group assesses whether there has been a significant increase in credit risk since initial recognition on an individual or collective basis. For collective assessment, financial instruments are grouped on the basis of shared credit risk characteristics, taking into account investment type, credit risk ratings, date of initial recognition, remaining term to maturity, industry, geographical location of the counterparty or borrower and other relevant factors.

Debt securities with an external credit rating of investment grade are considered to have a low credit risk. Other financial instruments are considered to have a low credit risk if they have a low risk of default and the counterparty or borrower has a strong capacity to meet its contractual cash flow obligations in the near term. The credit risk on these financial instruments is assessed as not having increased significantly since initial recognition.

For a financial asset with lifetime expected credit losses recognised in the previous reporting period, if its credit quality improves and reverses the previously assessed significant increase in credit risk, then the loss allowance reverts from lifetime expected credit losses to 12-month expected credit losses.

When a financial asset is uncollectible, it is written off against the related loss allowance. Such assets are written off after all the necessary procedures have been completed and the amount of the loss has been determined. Subsequent recoveries of amounts previously written off are recognised in the income and expenditure account.

2.9.2 *Measurement of expected credit losses*

Expected credit losses of a financial instrument are an unbiased and probability-weighted estimate of credit losses (i.e. the present value of all cash shortfalls) over the expected life of the financial instrument:

- for financial assets, a credit loss is 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, discounted at the effective interest rate. For a financial asset that is credit impaired at the reporting date, the Group measures the expected credit losses as the difference between the asset's gross carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate;

- for undrawn loan commitments, a credit loss is the present value of the difference between the contractual cash flows that are due to the Group if the commitment is drawn down and the cash flows that the Group expects to receive; and

- for financial guarantee contracts, a credit loss is the present value of expected payments to reimburse the holder less any amounts that the Group expects to recover.

Further details on the expected credit losses calculation are set out in note 37.3.3.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.10 Gold

Gold is carried at fair value. Changes in the fair value of gold are recognised in the income and expenditure account in the period in which they arise.

2.11 Investment properties

Properties that are held for long-term rental yields, capital appreciation or both, and that are not occupied by the Group, are classified as investment properties.

Investment properties are recognised initially at cost, including related transaction costs. After initial recognition, investment properties are measured at fair value as assessed by independent professional valuers, or by the management based on the latest valuation made by the independent professional valuers. Fair value of the investment properties is measured based on the market or income approach. Under the market approach, the value is determined based on comparable transactions. For the income approach, the fair value is determined using valuation techniques including discounted cash flow and income capitalisation methods.

Any gain or loss arising from a change in fair value or the disposal of an investment property is recognised directly in the income and expenditure account. Rental income from investment properties is recognised in accordance with the accounting policies as set out in note 2.13.2.

2.12 Property, plant and equipment

The following items of property, plant and equipment are stated in the balance sheet at cost less accumulated depreciation and any impairment losses (note 2.14):

- buildings held for own use situated on freehold land;
- leasehold land and buildings held for own use;
- plant and equipment, including plant, machinery, furniture, fixtures, equipment, motor vehicles and personal computers; and
- right-of-use assets arising from leases of premises (note 2.13.1).

Intangible assets including computer software licences and system development costs are included in property, plant and equipment.

Freehold land is not depreciated. For other items of property, plant and equipment, depreciation is calculated to write off their cost less their estimated residual value, if any, on a straight-line basis over their estimated useful lives as follows:

– leasehold land	over the unexpired term of lease
– buildings situated on freehold land	39 years
– buildings situated on leasehold land	over the shorter of the unexpired term of lease and their estimated useful lives
– right-of-use assets	over the shorter of the lease terms and their estimated useful lives
– plant and equipment	3 to 15 years
– computer software licences and system development costs	3 to 5 years

A gain or loss arising from the disposal of an item of property, plant and equipment is determined as the difference between the net disposal proceeds and the carrying amount of the asset and is recognised in the income and expenditure account on the date of disposal.

2.13 Leases

2.13.1 As a lessee

A lease is recognised in the balance sheet as a right-of-use asset with a corresponding lease liability at the lease commencement date, except that payments associated with short-term leases having a lease term of 12 months or less and leases of low-value assets are charged to the income and expenditure account on a straight-line basis over the lease term.

A right-of-use asset, except that meeting the definition of investment property (note 2.11), is recognised as property, plant and equipment and measured at cost less accumulated depreciation and any impairment losses (note 2.12). The right-of-use asset is depreciated on a straight-line basis over the shorter of the lease term and the asset's estimated useful life. A right-of-use asset that meets the definition of investment property is presented in the balance sheet as an investment property.

The lease liability is recognised as other liabilities and is measured at the present value of the lease payments payable over the lease term, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Variable lease payments that do not depend on an index or a rate are not included in the measurement of the lease liability and hence are charged to the income and expenditure account in the accounting period in which they are incurred. The lease liability is subsequently adjusted by the effect of the interest on and the settlement of the lease liability, and the remeasurement arising from any reassessment of lease liability or lease modification.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Lease payments included in the measurement of the Group's lease liability mainly comprise:

- fixed payments, less any lease incentives receivable;
- lease payments in an optional renewal period if the Group is reasonably certain to exercise an extension option; and
- penalties for early termination of a lease unless the Group is reasonably certain not to terminate early.

2.13.2 As a lessor

The Group enters into contracts as a lessor with respect to some of its properties. These contracts are classified as operating leases because the Group does not transfer substantially all the risks and rewards incidental to ownership of assets to the lessees. Rental income from operating leases is recognised in the income and expenditure account as other income (note 2.17.5) on a straight-line basis over the lease term.

2.14 Impairment of other assets

The carrying amounts of other assets, including interests in subsidiaries, interests in associates and joint ventures, and property, plant and equipment, are reviewed at each reporting date to identify any indication of impairment.

If any such indication exists, an impairment loss is recognised in the income and expenditure account whenever the carrying amount of an asset exceeds its recoverable amount. The recoverable amount of an asset is the higher of its fair value less costs of disposal and value in use.

2.15 Cash and cash equivalents

Cash and cash equivalents comprise cash and money at call, placements with banks and other financial institutions, and short-term highly liquid investments that are readily convertible to known amounts of cash and subject to an insignificant risk of changes in value, having been within three months of maturity when placed or acquired.

2.16 Insurance contracts

2.16.1 Life insurance contracts

Premiums are recognised as income when the cash is received from the annuitant, and the policy is issued and becomes effective after the completion of all the underwriting procedures.

Insurance contract liabilities are recognised when contracts are entered into and premiums are recognised. These liabilities are measured by using the Modified Net Level Premium Valuation method for long term business in accordance with the provisions of the Insurance (Determination of Long Term Liabilities) Rules (Cap. 41E). The movements in liabilities at each reporting date are recorded in the income and expenditure account.

Insurance claims reflect the cost of all annuity payments, surrenders, withdrawals and death claims arising during the year. Surrenders, withdrawals and death claims are recorded on the basis of notifications received. Annuity payments are recorded when due.

2.16.2 Mortgage insurance contracts

The mortgage insurance business under the Mortgage Insurance Programme of the Group is accounted for on the annual accounting basis. Under the annual accounting approach, the Group makes provisions based on credible estimates of future income and outgoings to determine the underwriting result for the current accounting period. The underwriting result includes any adjustments arising from the correction of the previous estimates.

Gross premiums represent direct business written through authorized institutions as defined under the Banking Ordinance (Cap. 155) during an accounting period. The gross premiums after deduction of discounts and refunds, include the reinsurance premiums to be paid to the approved reinsurers, the risk premiums and servicing fees earned by the Group. The net premiums are recognised as income on a time-apportioned basis during the time the insurance coverage is effective.

Unearned premiums represent that portion of net premiums written which are estimated to relate to risks and services subsequent to the reporting date.

Provisions are made for outstanding claims, claims incurred but not reported and loss reserve at the reporting date.

Reinsurance contracts refer to contracts entered into by the Group with reinsurers under which the Group is compensated for losses on one or more insurance contracts issued by the Group. Benefits to which the Group is entitled under its reinsurance contracts held are recognised as reinsurance assets. These assets consist of claims recoverable from reinsurers and receivables that are dependent on the expected claims and benefits arising under the related reinsured insurance contracts. Amounts recoverable from or due to reinsurers are measured consistently with the amounts associated with the reinsured insurance contracts and in accordance with the terms of each reinsurance contract. Reinsurance assets are primarily premiums for reinsurance contracts and are amortised as an expense.

A reinsurance asset is impaired if there is objective evidence, as a result of an event that occurred after initial recognition of the reinsurance asset, that the Group may not receive all amounts due to it under the terms of the contract, and the impact on the amounts that the Group will receive from the reinsurer can be reliably measured.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.16.3 Other guarantee and insurance contracts

The Group provides financial guarantees for loan facilities provided to eligible small and medium enterprises (SMEs), in return for a guarantee fee, insurance coverage on reverse mortgage loans and policy reverse mortgage loans provided to elderly people in return for an insurance premium.

In respect of insurance coverage on reverse mortgage loans, the Group entered into reinsurance contract with a reinsurer. Reinsurance contracts refer to contracts entered into by the Group with reinsurers under which the Group is compensated for losses on one or more insurance contracts issued by the Group. Benefits to which the Group is entitled under its reinsurance contracts held are recognised as reinsurance assets. Reinsurance assets are primarily premiums for reinsurance contracts and are amortised as an expense.

A reinsurance asset is impaired if there is objective evidence, as a result of an event that occurred after initial recognition of the reinsurance asset, that the Group may not receive all amounts due to it under the terms of the contract, and the impact on the amounts that the Group will receive from the reinsurer can be reliably measured.

The Group will assess if its recognised liabilities are adequate on each reporting date, using the current estimates of future cash flows under these contracts. If the assessment shows that the carrying amount of its insurance liabilities are inadequate in the light of the estimated future cash flows, the shortfall shall be recognised in the income and expenditure account.

2.17 Revenue and expenditure recognition

2.17.1 Interest income and expense

Interest on the majority of the placements by Fiscal Reserves (Operating and Capital Reserves) and placements by HKSAR Government funds and statutory bodies is payable at a fixed rate determined annually (notes 24 and 25). Interest on these placements is recognised in the income and expenditure account on an accrual basis, using the effective interest method.

Interest on the placements by Fiscal Reserves (Future Fund) is payable at a composite rate which is determined annually and linked with the performance of certain portfolios of assets under the Fund (note 24). Interest on these placements is recognised in the income and expenditure account on an accrual basis, based on the performance of those portfolios.

Interest income and expense for all other interest-bearing financial assets and financial liabilities are recognised in the income and expenditure account on an accrual basis, using the effective interest method.

Once a financial asset or a group of similar financial assets has been written down as a result of an impairment loss, interest income is thereafter recognised using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss.

2.17.2 Dividend income

Dividend income from listed equity securities is recognised in the income and expenditure account when the share price is quoted ex-dividend. Dividend income from unlisted equity securities is recognised when the shareholder’s right to receive payment is unconditionally established.

Dividends on equity securities measured at fair value through other comprehensive income that clearly represent a recovery of part of the cost of the investment are presented in other comprehensive income.

2.17.3 Net realised and unrealised gains/(losses)

Realised gains or losses on financial instruments other than equity securities measured at fair value through other comprehensive income are recognised in the income and expenditure account when the financial instruments are derecognised.

Changes in fair value of financial instruments measured at fair value through income and expenditure account are recognised as unrealised gains or losses in the income and expenditure account in the period in which they arise.

2.17.4 Bank licence fees

Bank licence fees are fees receivable from authorized institutions under the Banking Ordinance and are accounted for in the period when the fees become receivable.

2.17.5 Other income

Other income includes rental income and fee income from the provision of financial market infrastructure services. Rental income is recognised in accordance with the accounting policies as set out in note 2.13.2. Other income is accounted for in the period when it becomes receivable.

2.17.6 Contributions to staff retirement schemes

The Group operates several defined contribution schemes, including the Mandatory Provident Fund Scheme. Under these schemes, contributions payable each year are charged to the income and expenditure account. The assets of the staff retirement schemes are held separately from those of the Group.

2.17.7 Income tax

The Fund is not subject to Hong Kong profits tax as it is an integral part of the government. Income tax payable on profits of subsidiaries is recognised as an expense in the period in which profits arise.

Deferred tax assets and liabilities arise from deductible and taxable temporary differences respectively, being the differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the assets can be utilised. Deferred tax liabilities are provided in full. For investment properties that are measured at fair value, the amount of deferred tax recognised is measured using the tax rates that would apply on sale of those assets at their carrying value at the reporting date on the presumption that their carrying amounts are recovered entirely through sale. In all other cases, the amount of deferred tax recognised is measured based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates enacted or substantively enacted at the reporting date. Deferred tax assets and liabilities are not discounted.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.18 Foreign currency translation

The financial statements are presented in Hong Kong dollars, which is the Group's and the Fund's functional currency.

Foreign currency transactions during the year are translated into Hong Kong dollars using the spot exchange rates at the transaction dates. Monetary assets and liabilities denominated in foreign currencies are translated into Hong Kong dollars using the closing exchange rate at the reporting date. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated into Hong Kong dollars using the spot exchange rates at the transaction dates. Non-monetary assets and liabilities that are measured at fair value in a foreign currency are translated into Hong Kong dollars using the closing exchange rates at the dates when the fair value is determined.

All foreign currency translation differences are presented in aggregate as "net exchange gain/(loss)" in the income and expenditure account. Although it is not practicable to disclose separately the net exchange gain/(loss) on financial assets and financial liabilities measured at fair value through income and expenditure account or on derivative financial instruments, the majority of the exchange gains/(losses) relate to these two categories of financial instruments.

The results of foreign operations are translated into Hong Kong dollars at the exchange rates approximating the foreign exchange rates ruling at the dates of the transactions. Balance sheet items are translated into Hong Kong dollars at the closing foreign exchange rates at the reporting date. The resulting exchange differences are recognised in other comprehensive income and accumulated separately in equity in the translation reserve.

On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation is reclassified from equity to the income and expenditure account when the gain or loss on disposal is recognised.

2.19 Critical accounting estimates and assumptions

The Group makes estimates and assumptions that affect the reported amounts of assets and liabilities. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

The Group has considered the impacts arising from the COVID-19 pandemic when reviewing the estimates and assumptions which are based on future economic conditions and sensitive to changes in those conditions. In particular, the economic effects of the COVID-19 pandemic increase the level of estimation uncertainty for the measurements of fair values of investment properties, fair values of certain financial assets that are derived from unobservable inputs and expected credit losses on financial instruments.

(a) Fair value of investment properties

The fair value of investment properties is revalued by independent professional valuers using property valuation techniques which involve certain assumptions of market conditions. Details of the fair value measurement of investment properties are set out in note 19.1.

(b) Fair value of financial instruments

The majority of valuation techniques employ only observable market data. However, certain financial instruments are valued on the basis of valuation techniques that feature one or more significant market inputs that are unobservable, where the measurement of fair value is more judgemental. Details of the fair value measurement of financial instruments are set out in note 38.

(c) Impairment allowances on loan portfolio

The Group reviews its loan portfolio to assess expected credit losses on a regular basis. In determining expected credit losses, the Group makes judgements as to whether there is any significant increase in credit risk since initial recognition. It is required to exercise judgements in making assumptions and estimates to incorporate relevant information about external credit ratings, past events, current conditions and forecast of economic conditions. The methodology and assumptions used for estimating both the amount and timing of future cash flows are reviewed regularly to reduce any differences between loss estimates and actual loss experience. Information about the assumptions relating to measurement of expected credit losses is set out in note 37.3.3.

(d) Provision for outstanding claims on insurance and guarantee portfolios of general insurance business

The Group reviews the insurance and guarantee portfolios of its general insurance subsidiary to assess provision for outstanding claims, including claims of which the amounts have not been determined and claims arising out of incidents that have not been notified to the insurer and related expenses for settling such claims. In determining the provision for outstanding claims, the Group makes judgements and assumptions including but not limited to the loss severity rate applied, the economic conditions and the local property market in making estimation of the payments which the Group is required to make in fulfilling its obligations under the insurance and guarantee contracts. The methodology and assumptions used for estimating the ultimate claim amount are reviewed regularly.

(e) Insurance contract liabilities of life insurance business

The liability for insurance contracts of the Group's life insurance subsidiary is based on current assumptions with a margin for risk and adverse deviation. The main assumptions used relate to mortality, longevity, expenses and discount rates, which are reviewed regularly.

2.20 Related parties

For the purposes of these financial statements, a person or an entity is considered to be related to the Group if:

(a) the person, or a close member of that person's family:

   (i) has control or joint control over the Group;

   (ii) has significant influence over the Group; or

   (iii) is a member of the key management personnel of the Group.

(b) any of the following conditions applies to the entity:

(i) the entity and the Group are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others);

(ii) the entity is an associate or joint venture of the Group (or an associate or joint venture of a member of a group of which the Group is a member);

(iii) the entity and the Group are joint ventures of the same third party;

(iv) the entity is a joint venture of another entity and the Group is an associate of that entity;

(v) the entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group;

(vi) the entity is controlled or jointly controlled by a person identified in (a);

(vii) a person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity); or

(viii) the entity, or any member of a group of which it is a part, provides key management personnel services to the Group.

Close members of the family of a person are those family members who may be expected to influence, or be influenced by, that person in their dealings with the entity.

2.21 Operating segments

Operating segments are reported in a manner consistent with the internal management reports provided to the chief operating decision maker. The Group comprises the following operating segments:

– management of funds under the Currency Board Operations, including the Backing Portfolio;

– management of funds representing the general reserve assets of the Fund, including the Investment Portfolio, the Long-Term Growth Portfolio and the Strategic Portfolio; and

– maintaining the stability and integrity of Hong Kong's monetary and financial systems, which includes banking supervision and monetary management, and the activities of Hong Kong FMI Services Limited, The Hong Kong Mortgage Corporation Limited and Hong Kong Note Printing Limited.

Details of the operating segments of the Group are set out in note 32.

3 CHANGES IN ACCOUNTING POLICIES

The HKICPA has issued certain new or revised HKFRSs that are first effective for the current accounting period of the Group. None of them has impact on the accounting policies of the Group.

The Group has not applied any new standard or interpretation that is not yet effective for the current accounting period (note 39).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

4 INCOME AND EXPENDITURE

(a) Investment (losses)/income

	Group		Fund	
	2022	2021	**2022**	2021
Interest income:				
– from derivative financial instruments	**279**	313	**231**	318
– from financial assets measured at fair value through income and expenditure account	**45,219**	19,635	**44,792**	19,246
– from financial assets measured at fair value through other comprehensive income	**49**	46	**–**	–
– from financial assets measured at amortised cost	**7,872**	1,716	**4,867**	595
	53,419	21,710	**49,890**	20,159
Dividend income:				
– from financial assets measured at fair value through income and expenditure account	**17,427**	20,346	**12,611**	12,511
– from financial assets measured at fair value through other comprehensive income	**12**	25	**12**	25
– from subsidiaries	**–**	–	**744**	1,447
	17,439	20,371	**13,367**	13,983
(Loss)/Income from investment properties:				
– rental income	**1,267**	1,281	**–**	–
– change in fair value on revaluation	**(2,000)**	(123)	**–**	–
	(733)	1,158	**–**	–
Net realised and unrealised (losses)/gains:				
– on derivative financial instruments	**6,419**	(2,092)	**9,691**	(2,099)
– on financial assets and financial liabilities measured at fair value through income and expenditure account	**(237,177)**	137,925	**(214,883)**	32,594
– on debt securities measured at amortised cost	**–**	3	**–**	–
– on gold	**(3)**	(31)	**(3)**	(31)
	(230,761)	135,805	**(205,195)**	30,464
Net exchange (loss)/gain	**(42,479)**	15,951	**(40,045)**	16,817
TOTAL	**(203,115)**	194,995	**(181,983)**	81,423

Net realised and unrealised (losses)/gains included a loss of HK$4,235 million (2021: HK$258 million) on hedging instruments designated as fair value hedge and a gain of HK$4,268 million (2021: HK$263 million) on hedged items.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies

	Group and Fund	
	2022	2021
Interest expense on placements by Fiscal Reserves:		
– at a fixed rate determined annually[1]	**35,027**	34,448
– at a composite rate determined annually[2]	**(9,020)**	58,565
	26,007	93,013
Interest expense on placements by HKSAR Government funds and statutory bodies:		
– at a fixed rate determined annually[1]	**22,076**	16,835
– at market-based rates	**26**	2
	22,102	16,837
TOTAL	**48,109**	109,850

[1] This rate was fixed at 5.6% per annum for 2022 (2021: 4.7%) – notes 24, 25 and 30.

[2] The composite rate was -3.0% per annum for 2022 (2021: 17.8%) – notes 24 and 30.

(c) Other interest expense

	Group		Fund	
	2022	2021	**2022**	2021
Interest expense on Exchange Fund Bills and Notes issued	**11,999**	441	**11,999**	441
Interest expense on placements by subsidiaries	**–**	–	**759**	2,157
Interest expense on derivative financial instruments	**45**	17	**45**	2
Interest expense on lease liabilities	**14**	16	**4**	4
Interest expense on other financial instruments	**4,543**	1,171	**1,511**	116
TOTAL	**16,601**	1,645	**14,318**	2,720

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(d) Operating expenses

	Group		Fund	
	2022	2021	**2022**	2021
Staff costs				
Salaries and other staff costs	**2,018**	1,954	**1,498**	1,477
Retirement benefit costs	**157**	155	**127**	127
Premises and equipment expenses				
Depreciation	**380**	377	**277**	260
Other premises expenses	**102**	94	**81**	76
General operating costs				
Maintenance of office and computer equipment	**190**	172	**158**	142
Financial infrastructure operation	**214**	157	**103**	92
Professional, consulting and other services	**170**	149	**94**	91
Financial information and communication services	**93**	89	**75**	72
Public education and publicity	**85**	59	**39**	22
External relations	**25**	16	**22**	13
Training	**8**	7	**5**	5
Expenses relating to investment properties				
– Operating expenses	**237**	192	**–**	–
– Variable lease payment expenses	**11**	12	**–**	–
Others	**58**	52	**97**	31
Recovery of operating expenses for special 100% loan guarantee under the SME Financing Guarantee Scheme (note 14)	**(128)**	(87)	**–**	–
Investment management and custodian fees				
Management and custodian fees	**1,628**	1,968	**1,425**	1,765
Transaction costs	**218**	283	**214**	280
Withholding tax	**732**	756	**732**	756
Professional fees and others	**239**	235	**108**	114
TOTAL	**6,437**	6,640	**5,055**	5,323

The aggregate emoluments of senior staff members (Executive Directors and above) of the Group are as follows:

	Group	
	2022	2021
Fixed pay	**87.4**	86.8
Variable pay	**22.4**	22.8
Other benefits	**13.7**	11.7
	123.5	121.3

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Other benefits shown above included provident funds, medical and life insurance, gratuity and annual leave accrued during the year. There were no other allowances or benefits-in-kind.

The numbers of senior staff members (Executive Directors and above) of the Group whose emoluments including other benefits fell within the following bands were shown in the table below. The number of senior staff posts was 18 (2021: 18). The higher figure in 2021 reflected staff movements during that year.

	Group	
HK$	**2022**	2021
1,000,000 or below	**–**	1
4,500,001 to 5,000,000	**1**	–
5,000,001 to 5,500,000	**3**	5
5,500,001 to 6,000,000	**1**	3
6,000,001 to 6,500,000	**4**	2
6,500,001 to 7,000,000	**3**	2
7,000,001 to 7,500,000	**2**	2
7,500,001 to 8,000,000	**1**	–
8,000,001 to 8,500,000	**–**	2
8,500,001 to 9,000,000	**1**	–
9,500,001 to 10,000,000	**1**	2
10,000,001 to 10,500,000	**1**	–
	18	19

(e) Note and coin expenses

These represent reimbursements to the note-issuing banks in respect of note-issuing expenses and expenses incurred directly by the Fund in issuing government-issued currency notes and coins.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(f) Charge for/(Reversal of) impairment allowances

	Group		Fund	
	2022	2021	**2022**	2021
Charge for/(Reversal of) impairment allowances				
Placements with banks and other financial institutions (note 37.3.3(a))	**(3)**	3	**(1)**	–
Debt securities measured at amortised cost (note 37.3.3(b))	**1**	1	**–**	–
Loan portfolio (note 37.3.3(c))	**9**	(4)	**–**	–
Provision on loan commitments (note 37.3.3(d))	**(2)**	(18)	**–**	–
TOTAL	**5**	(18)	**(1)**	–

5 REVENUE ACCOUNT FOR INSURANCE BUSINESS

	Group		
	2022		
	Non-life insurance	Life insurance	Total
Gross premiums written	**2,558**	**2,529**	**5,087**
Reinsurance premiums	**(347)**	**–**	**(347)**
Net premiums written	**2,211**	**2,529**	**4,740**
Movement in unearned premiums, net	**(1,062)**	**–**	**(1,062)**
Net commission and levy expenses	**(720)**	**(1)**	**(721)**
Net premiums earned	**429**	**2,528**	**2,957**
Net claims incurred, benefits paid and movement in policyholders' liabilities	**(33)**	**(3,545)**	**(3,578)**
Net premiums earned after provisions	**396**	**(1,017)**	**(621)**

Exchange Fund – Notes to the Financial Statements (continued)
(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group		
	2021		
	Non-life insurance	Life insurance	Total
Gross premiums written	3,036	3,003	6,039
Reinsurance premiums	(197)	–	(197)
Net premiums written	2,839	3,003	5,842
Movement in unearned premiums, net	(2,008)	–	(2,008)
Net commission and levy expenses	(962)	–	(962)
Net premiums earned	(131)	3,003	2,872
Net claims incurred, benefits paid and movement in policyholders' liabilities	(28)	(4,051)	(4,079)
Net premiums earned after provisions	(159)	(1,048)	(1,207)

6 INCOME TAX

(a) Income tax charged in the income and expenditure account

	Group		Fund	
	2022	2021	**2022**	2021
Current tax				
Hong Kong profits tax:				
– current year	**46**	56	**–**	–
– over-provision in prior years	**(22)**	(22)	**–**	–
Taxation outside Hong Kong:				
– current year	**118**	216	**–**	–
– under-provision in prior years	**23**	4	**–**	–
Deferred tax				
Charge for current year	**110**	387	**–**	–
TOTAL	**275**	641	**–**	–

No provision for Hong Kong profits tax has been made for the Fund as it is not subject to Hong Kong tax. The provision for Hong Kong profits tax relates to the tax liabilities of the Fund's subsidiaries. For 2022, it is calculated at 16.5% (2021: 16.5%) of the estimated assessable profits for the year. Tax for overseas subsidiaries is charged at the appropriate current rates of taxation ruling in the relevant countries, which ranged from 15.0% to 19.0% (2021: 15.0% to 19.0%).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Reconciliation between tax expense and accounting profit at applicable tax rates:

	Group		Fund	
	2022	2021	**2022**	2021
(Deficit)/Surplus before taxation	**(279,073)**	80,208	**(249,470)**	(36,481)
Less: Deficit not subject to Hong Kong tax	**249,470**	36,481	**249,470**	36,481
(Deficit)/Surplus subject to tax	**(29,603)**	116,689	**–**	–
Tax calculated at domestic tax rates in the respective countries	**(4,840)**	19,488	**–**	–
Tax effect of:				
– non-deductible expenses	**6,816**	846	**–**	–
– non-taxable income	**(1,876)**	(19,753)	**–**	–
– utilisation of tax losses previously not recognised	**–**	(29)	**–**	–
– tax losses not recognised	**62**	–	**–**	–
– under-provision/(over-provision) in prior years	**1**	(18)	**–**	–
– effect on deferred tax balances arising from change in tax rates	**5**	(82)	**–**	–
– others	**107**	189	**–**	–
Income tax charge	**275**	641	**–**	–

(b) Tax (recoverable)/payable

		Group		Fund	
	Note	**2022**	2021	**2022**	2021
Tax recoverable	16	**(44)**	(24)	**–**	–
Tax payable	30	**535**	693	**–**	–
		491	669	**–**	–

(c) Deferred tax

		Group		Fund	
	Note	**2022**	2021	**2022**	2021
Deferred tax assets	16	**(162)**	(122)	**–**	–
Deferred tax liabilities	30	**799**	696	**–**	–
		637	574	**–**	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The major components of net deferred tax liabilities and the movements during the year are as follows:

	Group					
	Adjustments on bank loans and derivative financial instruments	Fair value changes on investment properties	Accelerated tax depreciation	Tax losses	Others	Net deferred tax liabilities
At 1 January 2021	–	417	33	(201)	(9)	240
Charged/(Credited) to the income and expenditure account	–	310	(1)	85	(7)	387
Change arising from deemed acquisition of a subsidiary	–	–	–	–	(32)	(32)
Exchange differences	–	(22)	–	1	–	(21)
At 31 December 2021	–	705	32	(115)	(48)	574
At 1 January 2022	**–**	**705**	**32**	**(115)**	**(48)**	**574**
Charged/(Credited) to the income and expenditure account	**3**	**150**	**(4)**	**(34)**	**(5)**	**110**
Exchange differences	**–**	**(47)**	**–**	**–**	**–**	**(47)**
At 31 December 2022	**3**	**808**	**28**	**(149)**	**(53)**	**637**

There was no significant unprovided deferred tax as at 31 December 2022 and 2021.

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

7 CATEGORIES OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

	Group – 2022					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	209,717	–	–	–	209,717	–
Placements with banks and other financial institutions	197,416	–	–	–	197,416	–
Financial assets measured at fair value through income and expenditure account	3,830,723	–	3,830,723	–	–	–
Financial assets measured at fair value through other comprehensive income	2,508	–	–	2,508	–	–
Derivative financial instruments	2,951	2,951	–	–	–	–
Debt securities measured at amortised cost	13,143	–	–	–	13,143	–
Loan portfolio	109,391	–	–	–	109,391	–
Others	39,820	–	–	–	39,820	–
FINANCIAL ASSETS	4,405,669	2,951	3,830,723	2,508	569,487	–
Certificates of Indebtedness	605,959	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	96,251
Placements by banks and other financial institutions	99,455	–	–	–	–	99,455
Placements by Fiscal Reserves	765,189	–	–	–	–	765,189
Placements by HKSAR Government funds and statutory bodies	449,041	–	–	–	–	449,041
Exchange Fund Bills and Notes issued	1,200,323	–	1,200,323	–	–	–
Derivative financial instruments	7,175	7,175	–	–	–	–
Bank loans	14,714	–	–	–	–	14,714
Other debt securities issued	131,683	–	–	–	–	131,683
Others	214,404	–	–	–	–	214,404
FINANCIAL LIABILITIES	3,597,354	7,175	1,200,323	–	–	2,389,856

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	185,467	–	–	–	185,467	–
Placements with banks and other financial institutions	164,268	–	–	–	164,268	–
Financial assets measured at fair value through income and expenditure account	4,492,896	–	4,492,896	–	–	–
Financial assets measured at fair value through other comprehensive income	4,983	–	–	4,983	–	–
Derivative financial instruments	4,596	4,596	–	–	–	–
Debt securities measured at amortised cost	11,207	–	–	–	11,207	–
Loan portfolio	87,412	–	–	–	87,412	–
Others	30,018	–	–	–	30,018	–
FINANCIAL ASSETS	4,980,847	4,596	4,492,896	4,983	478,372	–
Certificates of Indebtedness	592,364	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	377,516
Placements by Fiscal Reserves	973,303	–	–	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	394,249	–	–	–	–	394,249
Exchange Fund Bills and Notes issued	1,148,569	–	1,148,569	–	–	–
Derivative financial instruments	2,292	2,292	–	–	–	–
Bank loans	16,130	–	–	–	–	16,130
Other debt securities issued	116,334	–	–	–	–	116,334
Others	267,334	–	–	–	–	267,334
FINANCIAL LIABILITIES	3,901,217	2,292	1,148,569	–	–	2,750,356

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	203,850	–	–	–	203,850	–
Placements with banks and other financial institutions	164,908	–	–	–	164,908	–
Financial assets measured at fair value through income and expenditure account	3,396,187	–	3,396,187	–	–	–
Financial assets measured at fair value through other comprehensive income	1,264	–	–	1,264	–	–
Derivative financial instruments	1,534	1,534	–	–	–	–
Others	31,899	–	–	–	31,899	–
FINANCIAL ASSETS	3,799,642	1,534	3,396,187	1,264	400,657	–
Certificates of Indebtedness	605,959	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	96,251
Placements by banks and other financial institutions	99,455	–	–	–	–	99,455
Placements by Fiscal Reserves	765,189	–	–	–	–	765,189
Placements by HKSAR Government funds and statutory bodies	449,041	–	–	–	–	449,041
Placements by subsidiaries	30,588	–	–	–	–	30,588
Exchange Fund Bills and Notes issued	1,200,323	–	1,200,323	–	–	–
Derivative financial instruments	2,833	2,833	–	–	–	–
Others	187,856	–	–	–	–	187,856
FINANCIAL LIABILITIES	3,450,655	2,833	1,200,323	–	–	2,247,499

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2021					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	179,229	–	–	–	179,229	–
Placements with banks and other financial institutions	121,596	–	–	–	121,596	–
Financial assets measured at fair value through income and expenditure account	4,035,011	–	4,035,011	–	–	–
Financial assets measured at fair value through other comprehensive income	1,336	–	–	1,336	–	–
Derivative financial instruments	3,628	3,628	–	–	–	–
Others	25,185	–	–	–	25,185	–
FINANCIAL ASSETS	4,365,985	3,628	4,035,011	1,336	326,010	–
Certificates of Indebtedness	592,364	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	377,516
Placements by Fiscal Reserves	973,303	–	–	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	394,249	–	–	–	–	394,249
Placements by subsidiaries	26,237	–	–	–	–	26,237
Exchange Fund Bills and Notes issued	1,148,569	–	1,148,569	–	–	–
Derivative financial instruments	1,667	1,667	–	–	–	–
Others	236,195	–	–	–	–	236,195
FINANCIAL LIABILITIES	3,763,226	1,667	1,148,569	–	–	2,612,990

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

8 CASH AND MONEY AT CALL

	Group		Fund	
	2022	2021	**2022**	2021
At amortised cost				
Balance with central banks	**3,943**	9,198	**3,943**	9,198
Balance with banks	**205,774**	176,269	**199,907**	170,031
TOTAL	**209,717**	185,467	**203,850**	179,229

9 PLACEMENTS WITH BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group		Fund	
	2022	2021	**2022**	2021
At amortised cost				
Placements in respect of reverse repurchase agreements:				
– with central banks	**68,454**	23,762	**68,454**	23,762
– with banks and other financial institutions	**1,115**	6,932	**1,115**	6,932
Other placements:				
– with banks	**127,852**	133,582	**95,341**	90,905
	197,421	164,276	**164,910**	121,599
Less: allowances for expected credit losses	**(5)**	(8)	**(2)**	(3)
TOTAL	**197,416**	164,268	**164,908**	121,596

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

10 FINANCIAL ASSETS MEASURED AT FAIR VALUE THROUGH INCOME AND EXPENDITURE ACCOUNT

	Group		Fund	
	2022	2021	**2022**	2021
At fair value				
Debt securities				
Treasury bills and commercial papers				
Unlisted	**1,033,689**	1,175,456	**1,033,689**	1,175,456
Certificates of deposit				
Unlisted	**141,029**	180,789	**141,029**	180,789
Other debt securities				
Listed in Hong Kong	**13,307**	16,405	**13,297**	16,394
Listed outside Hong Kong	**1,522,330**	1,812,417	**1,522,330**	1,812,417
Unlisted	**63,012**	104,927	**63,012**	104,927
Total debt securities	**2,773,367**	3,289,994	**2,773,357**	3,289,983
Equity securities				
Listed in Hong Kong	**150,413**	183,189	**150,413**	183,189
Listed outside Hong Kong	**344,843**	403,313	**342,961**	401,446
Unlisted	**137,230**	173,573	**129,456**	160,393
Total equity securities	**632,486**	760,075	**622,830**	745,028
Investment funds				
Unlisted	**424,870**	442,827	**–**	–
TOTAL	**3,830,723**	4,492,896	**3,396,187**	4,035,011

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

11 FINANCIAL ASSETS MEASURED AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	Group		Fund	
	2022	2021	**2022**	2021
At fair value				
Debt securities				
Listed in Hong Kong	**548**	754	**–**	–
Listed outside Hong Kong	**696**	1,604	**–**	–
Unlisted	**–**	1,289	**–**	–
	1,244	3,647	**–**	–
Equity securities				
Unlisted	**1,264**	1,336	**1,264**	1,336
TOTAL	**2,508**	4,983	**1,264**	1,336

The Group's investment in unlisted equity securities as at 31 December 2022 represents a holding of 4,285 shares (2021: 4,285 shares) in the Bank for International Settlements. As at 31 December 2022 and 2021, the nominal value of each share is 5,000 Special Drawing Rights (SDRs) and is 25% paid up (note 35(a)).

12 DERIVATIVE FINANCIAL INSTRUMENTS

Derivative financial instruments refer to financial contracts whose value depends on the value of one or more underlying assets or indices with settlement at a future date.

The Group uses derivative financial instruments to manage its exposures to market risk and facilitate the implementation of investment strategies. The principal derivative financial instruments used are interest rate and currency swap contracts, and forward foreign exchange contracts, which are primarily over-the-counter derivatives, as well as exchange-traded futures contracts.

Market risk arising from derivative financial instruments is included as part of the overall market risk exposure. The credit risk arising from these transactions is marked against the overall credit exposure to individual counterparties. The financial risk management approaches are outlined in note 37.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(a) Fair values of derivative financial instruments

An analysis of the fair values of derivative financial instruments held by product type is set out below:

	Group				Fund			
	2022		2021		2022		2021	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Derivatives categorised as held for trading								
Interest rate derivatives								
Interest rate swap contracts	1,494	954	941	284	549	954	745	235
Interest rate futures contracts	7	–	1	1	7	–	1	1
Equity derivatives								
Equity index futures contracts	86	81	147	54	86	81	147	54
Total return swap contracts	17	50	19	15	17	50	19	15
Currency derivatives								
Forward foreign exchange contracts	745	1,827	2,523	1,376	728	1,636	2,523	1,135
Currency swap contracts	55	38	–	95	–	–	–	–
Bond derivatives								
Bond futures contracts	27	51	46	35	27	51	46	35
Commodity derivatives								
Commodity futures contracts	120	61	147	192	120	61	147	192
	2,551	3,062	3,824	2,052	1,534	2,833	3,628	1,667
Derivatives designated as hedging instruments in fair value hedges								
Interest rate derivatives								
Interest rate swap contracts	30	1,961	214	122	–	–	–	–
Currency derivatives								
Currency swap contracts	370	2,112	485	118	–	–	–	–
	400	4,073	699	240	–	–	–	–
Derivatives designated as hedging instruments in cash flow hedges								
Currency derivatives								
Currency swap contracts	–	40	73	–	–	–	–	–
TOTAL	2,951	7,175	4,596	2,292	1,534	2,833	3,628	1,667

The fair value hedges consist of currency and interest rate swap contracts that are used to protect against changes in the fair value of certain fixed-rate debt securities issued due to movements in market interest rates and foreign exchange rates. The currency swap contracts under cash flow hedges are used to hedge the portion of foreign exchange risks arising from variability of cash flows from foreign currency denominated debt securities issued.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Notional amounts of derivative financial instruments

An analysis of the notional amounts of derivative financial instruments held at the reporting date based on the remaining periods to settlement is set out below. The notional amounts of these instruments indicate the volume of outstanding transactions and do not represent the amounts at risk.

	Group Notional amounts with remaining life of									
	2022					2021				
	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years
Derivatives categorised as held for trading										
Interest rate derivatives										
Interest rate swap contracts	43,144	611	6,906	25,033	10,594	52,358	2,440	2,863	32,340	14,715
Interest rate futures contracts	21,129	3,761	17,368	–	–	13,300	566	4,607	8,127	–
Equity derivatives										
Equity index futures contracts	35,147	35,147	–	–	–	66,415	66,415	–	–	–
Total return swap contracts	3,902	–	3,902	–	–	2,339	–	2,339	–	–
Currency derivatives										
Forward foreign exchange contracts	154,972	151,726	888	2,241	117	224,622	222,583	836	1,203	–
Currency swap contracts	6,613	220	1,578	4,815	–	4,637	218	775	3,572	72
Bond derivatives										
Bond futures contracts	67,977	67,977	–	–	–	77,601	77,601	–	–	–
Commodity derivatives										
Commodity futures contracts	20,280	14,420	5,860	–	–	37,483	22,869	14,614	–	–
	353,164	273,862	36,502	32,089	10,711	478,755	392,692	26,034	45,242	14,787
Derivatives designated as hedging instruments in fair value hedges										
Interest rate derivatives										
Interest rate swap contracts	68,784	3,726	29,520	33,494	2,044	48,053	2,767	17,387	25,855	2,044
Currency derivatives										
Currency swap contracts	44,325	8,368	9,658	23,584	2,715	41,498	9,748	21,358	9,590	802
	113,109	12,094	39,178	57,078	4,759	89,551	12,515	38,745	35,445	2,846
Derivatives designated as hedging instruments in cash flow hedges										
Currency derivatives										
Currency swap contracts	2,998	–	–	2,998	–	3,385	387	–	2,998	–
TOTAL	469,271	285,956	75,680	92,165	15,470	571,691	405,594	64,779	83,685	17,633

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund									
	Notional amounts with remaining life of									
	2022					2021				
	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years
Derivatives categorised as held for trading										
Interest rate derivatives										
Interest rate swap contracts	**24,109**	**600**	**2,447**	**12,550**	**8,512**	30,922	1,340	2,105	19,251	8,226
Interest rate futures contracts	**21,129**	**3,761**	**17,368**	**–**	**–**	13,300	566	4,607	8,127	–
Equity derivatives										
Equity index futures contracts	**35,147**	**35,147**	**–**	**–**	**–**	66,415	66,415	–	–	–
Total return swap contracts	**3,902**	**–**	**3,902**	**–**	**–**	2,339	–	2,339	–	–
Currency derivatives										
Forward foreign exchange contracts	**147,119**	**146,890**	**229**	**–**	**–**	221,667	221,170	497	–	–
Bond derivatives										
Bond futures contracts	**67,977**	**67,977**	**–**	**–**	**–**	77,601	77,601	–	–	–
Commodity derivatives										
Commodity futures contracts	**20,280**	**14,420**	**5,860**	**–**	**–**	37,483	22,869	14,614	–	–
TOTAL	**319,663**	**268,795**	**29,806**	**12,550**	**8,512**	449,727	389,961	24,162	27,378	8,226

13 DEBT SECURITIES MEASURED AT AMORTISED COST

	Group		Fund	
	2022	2021	**2022**	2021
At amortised cost				
Debt securities				
Listed in Hong Kong	**6,902**	6,858	**–**	–
Listed outside Hong Kong	**3,336**	2,411	**–**	–
Unlisted	**2,910**	1,942	**–**	–
	13,148	11,211	**–**	–
Less: allowances for expected credit losses	**(5)**	(4)	**–**	–
TOTAL	**13,143**	11,207	**–**	–

Fair value information of the above debt securities is provided in note 38.2.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

14 LOAN PORTFOLIO

	Group		Fund	
	2022	2021	**2022**	2021
At amortised cost				
Loans with special 100% guarantee under the SME Financing Guarantee Scheme[1]	**90,162**	71,063	**–**	–
Mortgage loans	**3,781**	3,623	**–**	–
Other loans	**15,617**	12,886	**–**	–
	109,560	87,572	**–**	–
Less: allowances for expected credit losses	**(169)**	(160)	**–**	–
TOTAL	**109,391**	87,412	**–**	–

1 The Hong Kong Mortgage Corporation Limited, a wholly-owned subsidiary of the Fund, launched the special 100% loan guarantee under the SME Financing Guarantee Scheme (SFGS) through a subsidiary, HKMC Insurance Limited, in April 2020. The loans, which are fully guaranteed by the HKSAR Government, are originated by the participating lenders and sold to The Hong Kong Mortgage Corporation Limited without recourse upon origination. Accordingly, the default losses of these loans are covered by the HKSAR Government's guarantee and no impairment allowance is recognised in view of the minimal default risk of the HKSAR Government.

15 GOLD

	Group and Fund	
	2022	2021
At fair value		
Gold		
66,798 ounces (2021: 66,798 ounces)	**945**	948

The fair value of gold is based on quoted price in an active market. It is classified under Level 1 of the fair value hierarchy.

16 OTHER ASSETS

	Group		Fund	
	2022	2021	**2022**	2021
Unsettled sales and redemption of securities	**14,826**	12,783	**13,841**	11,021
Interest and dividends receivable	**14,151**	10,502	**12,818**	9,751
Prepayments, receivables and other assets	**10,090**	6,295	**5,073**	4,174
Staff housing loans	**181**	197	**181**	197
Loan to the International Monetary Fund	**34**	87	**34**	87
Reinsurance assets	**734**	491	**–**	–
Tax recoverable	**44**	24	**–**	–
Deferred tax assets	**162**	122	**–**	–
TOTAL	**40,222**	30,501	**31,947**	25,230

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

17 INTERESTS IN SUBSIDIARIES

	Fund	
	2022	2021
Unlisted shares, at cost	**12,462**	9,962
Loans to subsidiaries	**191,694**	190,196
TOTAL	**204,156**	200,158

The following is a list of the principal subsidiaries which are wholly owned by the Fund (except for Hong Kong Note Printing Limited[1]) as at 31 December 2022:

Name of company	Principal activities	Issued equity capital
The Hong Kong Mortgage Corporation Limited	Investment in mortgages and loans	HK$12,000,000,000
HKMC Annuity Limited[2]	Long term insurance	HK$10,000,000,000
HKMC Insurance Limited[2]	General insurance	HK$3,000,000,000
HKMC Mortgage Management Limited[2]	Loan purchase, origination and servicing	HK$1,000,000
Hong Kong Note Printing Limited	Banknote printing	HK$255,000,000
Hong Kong FMI Services Limited	Performance of financial market infrastructure related operations	HK$167,000,000
Hong Kong Academy of Finance Limited	Financial leadership development	HK$150,000,000
BNR Finance Company Limited	Investment holding	HK$1
BNR Investment Company Limited	Investment holding	HK$1
Debt Capital Solutions Company Limited	Investment holding	HK$1
Drawbridge Investment Limited	Investment holding	HK$1
Eight Finance Investment Company Limited	Investment holding	HK$1
Green 2021 Investment Company Limited	Investment holding	HK$1
Pine Gate Investment Company Limited	Investment holding	HK$1
Stewardship Investment Company Limited	Investment holding	HK$1
Stratosphere Finance Company Limited	Investment holding	HK$1
Real Avenue Investment Company Limited	Investment properties holding	HK$1
Real Boulevard Investment Company Limited	Investment properties holding	HK$1
Real Gate Investment Company Limited	Investment properties holding	HK$1
Real Horizon Investment Company Limited	Investment properties holding	HK$1
Real Plaza Investment Company Limited	Investment properties holding	HK$1
Real Summit Investment Company Limited	Investment properties holding	HK$1
Real Zenith Investment Company Limited	Investment properties holding	HK$1

1 55% equity interest held by the Fund.

2 Subsidiaries indirectly held by the Fund through The Hong Kong Mortgage Corporation Limited.

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The place of incorporation and operation of the above subsidiaries are in Hong Kong.

The Fund has committed to inject additional funds up to HK$20 billion (2021: HK$20 billion) to The Hong Kong Mortgage Corporation Limited as equity for the purpose of financing The Hong Kong Mortgage Corporation Limited's additional capital injection to HKMC Annuity Limited for maintaining its margin of solvency above a certain level. During the year, capital injection of HK$2.5 billion (2021: HK$2.5 billion) to The Hong Kong Mortgage Corporation Limited was made under this arrangement and the outstanding commitment as at 31 December 2022 was HK$15 billion (2021: HK$17.5 billion).

The Fund has provided The Hong Kong Mortgage Corporation Limited with a revolving credit facility of HK$80 billion (2021: HK$80 billion) at prevailing market interest rates. As at 31 December 2022, there was no outstanding balance due from The Hong Kong Mortgage Corporation Limited under this facility (2021: Nil).

Loans to other subsidiaries are unsecured, interest-free and repayable on demand.

Placements by subsidiaries are disclosed in note 26.

The financial statements of the Fund's subsidiaries are audited by firms other than the Audit Commission. The aggregate assets and liabilities of these subsidiaries not audited by the Audit Commission amounted to approximately 15% (2021: 14%) and 5% (2021: 4%) of the Group's total assets and total liabilities, respectively.

18 INTERESTS IN ASSOCIATES AND JOINT VENTURES

	Group		Fund	
	2022	2021	**2022**	2021
Associates[1]	**3,620**	3,320	**116**	54
Joint ventures[2]	**38,018**	44,225	**–**	–
TOTAL	**41,638**	47,545	**116**	54

1 Investment in an associate, comprising unlisted shares, is held directly by the Fund. In the Fund's balance sheet, the investment is stated at cost of HK$5,000 (2021: HK$5,000).

2 The Fund does not directly hold investment in joint ventures.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

18.1 Interests in associates

The Group holds investments in six associates. One associate, incorporated in Hong Kong, provides interbank clearing services. The other five associates, incorporated outside Hong Kong, hold overseas investment properties and investment funds. The Group holds equity interests in these associates ranging from 16% to 50%.

Aggregate information of the Group's associates, which are not individually material, is summarised below:

	Group	
	2022	2021
Share of (loss)/profit for the year	**(117)**	340
Share of other comprehensive loss	**(337)**	(30)
Share of total comprehensive (loss)/income	**(454)**	310
Aggregate carrying amount of interests in associates	**3,620**	3,320

As at 31 December 2022, the Group has no outstanding investment commitments to associates (2021: Nil).

The Fund has provided an associate with a non-revolving credit facility of HK$116 million (2021: HK$116 million) for developing a financial infrastructure. The loan facility, which will expire in October 2023, is unsecured, interest-free and repayable by 6 October 2033. A loan of HK$62 million (2021: HK$54 million) was drawn during the year and there was no outstanding commitment under the loan facility as at 31 December 2022 (2021: HK$62 million).

18.2 Interests in joint ventures

The Group holds investments in 22 joint ventures, which are all incorporated outside Hong Kong. The principal activities of these joint ventures are holding overseas investment properties. The Group holds equity interests in these joint ventures ranging from 25% to 51%. Although the Group's equity interest in some of these joint ventures exceeds 50%, they are categorised as joint ventures because important business decisions relating to these joint ventures are required to be made with the consent of all parties. As at 31 December 2022, the aggregate interest in these joint ventures amounted to 0.85% (2021: 0.87%) of the Group's total assets.

Aggregate information of the Group's joint ventures, which are not individually material, is summarised below:

	Group	
	2022	2021
Share of (loss)/profit for the year	**(4,589)**	3,472
Share of other comprehensive loss	**(1,161)**	(505)
Share of total comprehensive (loss)/income	**(5,750)**	2,967
Aggregate carrying amount of interests in joint ventures	**38,018**	44,225

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Group's share of outstanding investment commitments to joint ventures is shown below:

	Group	
	2022	2021
Commitments to contribute funds	**5,943**	3,008

19 INVESTMENT PROPERTIES

	Group		Fund	
	2022	2021	**2022**	2021
At fair value				
At 1 January	**27,089**	23,135	**–**	–
Additions	**791**	495	**–**	–
Additions through deemed acquisition of a subsidiary	**–**	4,198	**–**	–
Change in fair value on revaluation	**(2,000)**	(123)	**–**	–
Exchange differences	**(2,486)**	(616)	**–**	–
At 31 December	**23,394**	27,089	**–**	–

The carrying amount of the Group's investment properties is analysed as follows:

	Group		Fund	
	2022	2021	**2022**	2021
Held outside Hong Kong				
on freehold	**11,720**	13,045	**–**	–
on long-term lease (over 50 years)	**11,674**	14,044	**–**	–
TOTAL	**23,394**	27,089	**–**	–

The Group's investment properties are leased to third parties under operating leases. The gross rental income received and receivable by the Group and the related expenses in respect of these investment properties are summarised as follows:

	Group		Fund	
	2022	2021	**2022**	2021
Gross rental income	**1,267**	1,281	**–**	–
Direct expenses	**(248)**	(204)	**–**	–
Net rental income	**1,019**	1,077	**–**	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Group's total future minimum lease payments receivable under non-cancellable operating leases are as follows:

	Group		Fund	
	2022	2021	**2022**	2021
Within one year	**967**	1,143	**–**	–
After one year but not later than five years	**2,263**	3,077	**–**	–
After five years but not later than ten years	**414**	611	**–**	–
After ten years but not later than fifteen years	**59**	127	**–**	–
TOTAL	**3,703**	4,958	**–**	–

As at 31 December 2022, investment properties with a fair value of HK$22,822 million (2021: HK$26,398 million) were pledged to secure general banking facilities granted to the Group (note 28).

19.1 Fair value measurement of investment properties

The Group's investment properties are revalued by independent professional valuers on an open market value basis at each reporting date. The valuers have valued the Group's investment properties based on income approach with reference to comparable market evidence. The market value which is considered as the fair value of each investment property reflects, among other things, rental income from current leases and assumptions about rental income from future leases in light of the current market conditions. The fair value also reflects, on a similar basis, any cash outflows that could be expected in respect of the property. For all properties, their current use equates to the highest and best use. There has been no change to the valuation technique during the year.

Under the income approach, fair value is estimated using assumptions regarding the benefits and liabilities of ownership over the asset's life including the terminal value. This method involves the projection of a series of cash flows on a real property interest. To this projected cash flow series, a market-derived discount rate is applied to establish the present value of the income stream associated with the asset. The significant unobservable inputs used in the income approach are the selection of discount rates which ranged from 4.20% to 7.90% (2021: 4.25% to 7.25%), equivalent yields which ranged from 4.46% to 6.48% (2021: 4.06% to 5.62%) and terminal capitalisation rates which ranged from 3.20% to 6.35% (2021: 2.90% to 6.20%). Significant increases or decreases in any of those inputs in isolation would result in significantly lower or higher fair value measurements, respectively.

All of the Group's investment properties are classified under Level 3 of the fair value hierarchy. There were no transfers into or out of Level 3 during the year. The net losses recognised in the income and expenditure account relating to revaluation of investment properties held at the reporting date were HK$2,000 million (2021: HK$123 million).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

20 PROPERTY, PLANT AND EQUIPMENT

	Group				
	Owned assets			Right-of-use assets	
	Premises	Plant and equipment	Computer software licences and system development costs	Premises	Total
Cost					
At 1 January 2021	3,854	1,683	535	738	6,810
Additions	–	198	78	13	289
Disposals/write-offs	–	(32)	–	(21)	(53)
At 31 December 2021	3,854	1,849	613	730	7,046
At 1 January 2022	**3,854**	**1,849**	**613**	**730**	**7,046**
Additions	**3**	**175**	**273**	**30**	**481**
Disposals/write-offs	**–**	**(1)**	**–**	**(3)**	**(4)**
At 31 December 2022	**3,857**	**2,023**	**886**	**757**	**7,523**
Accumulated depreciation					
At 1 January 2021	1,515	1,270	420	164	3,369
Charge for the year	88	135	27	127	377
Written back on disposals/write-offs	–	(32)	–	(21)	(53)
At 31 December 2021	1,603	1,373	447	270	3,693
At 1 January 2022	**1,603**	**1,373**	**447**	**270**	**3,693**
Charge for the year	**88**	**141**	**32**	**119**	**380**
Written back on disposals/write-offs	**–**	**(1)**	**–**	**(2)**	**(3)**
At 31 December 2022	**1,691**	**1,513**	**479**	**387**	**4,070**
Net book value					
At 31 December 2022	**2,166**	**510**	**407**	**370**	**3,453**
At 31 December 2021	2,251	476	166	460	3,353

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund				
	Owned assets			Right-of-use assets	
	Premises	Plant and equipment	Computer software licences and system development costs	Premises	Total
Cost					
At 1 January 2021	3,843	782	535	526	5,686
Additions	–	126	78	5	209
Disposals/write-offs	–	(1)	–	(4)	(5)
At 31 December 2021	3,843	907	613	527	5,890
At 1 January 2022	**3,843**	**907**	**613**	**527**	**5,890**
Additions	**–**	**140**	**273**	**30**	**443**
At 31 December 2022	**3,843**	**1,047**	**886**	**557**	**6,333**
Accumulated depreciation					
At 1 January 2021	1,505	605	420	140	2,670
Charge for the year	87	69	27	77	260
Written back on disposals/write-offs	–	(1)	–	(4)	(5)
At 31 December 2021	1,592	673	447	213	2,925
At 1 January 2022	**1,592**	**673**	**447**	**213**	**2,925**
Charge for the year	**88**	**76**	**32**	**81**	**277**
At 31 December 2022	**1,680**	**749**	**479**	**294**	**3,202**
Net book value					
At 31 December 2022	**2,163**	**298**	**407**	**263**	**3,131**
At 31 December 2021	2,251	234	166	314	2,965

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The net book value of owned premises comprises:

	Group		Fund	
	2022	2021	**2022**	2021
In Hong Kong				
Leasehold land and the building situated thereon (leasehold between 10 and 50 years)	**2,145**	2,230	**2,142**	2,230
Outside Hong Kong				
Freehold land and the building situated thereon	**21**	21	**21**	21
TOTAL	**2,166**	2,251	**2,163**	2,251

21 CERTIFICATES OF INDEBTEDNESS, GOVERNMENT-ISSUED CURRENCY NOTES AND COINS IN CIRCULATION

	Group and Fund			
	Certificates of Indebtedness		Government-issued currency notes and coins in circulation	
	2022	2021	**2022**	2021
Carrying amount	**605,959**	592,364	**13,160**	13,126
Reconciliation with face value:				
Hong Kong dollar face value	**605,575**	592,645	**13,151**	13,132
Linked exchange rate for calculating the US dollars required for redemption	**US$1=HK$7.80**	US$1=HK$7.80	**US$1=HK$7.80**	US$1=HK$7.80
US dollars required for redemption	**US$77,638 million**	US$75,980 million	**US$1,686 million**	US$1,684 million
Market exchange rate for translation into Hong Kong dollars	**US$1=HK$7.80495**	US$1=HK$7.7963	**US$1=HK$7.80495**	US$1=HK$7.7963
Carrying amount	**605,959**	592,364	**13,160**	13,126

Exchange Fund – Notes to the Financial Statements (continued)
(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

22 BALANCE OF THE BANKING SYSTEM

Under the interbank payment system based on Real Time Gross Settlement principles, all licensed banks maintain a Hong Kong dollar clearing account with the Hong Kong Monetary Authority (HKMA) for the account of the Fund. The aggregate amount in these clearing accounts, which must not have a negative balance, represents the total level of liquidity in the interbank market.

Under the weak-side Convertibility Undertaking, the HKMA undertakes to convert Hong Kong dollars in these clearing accounts into US dollars at the fixed exchange rate of US$1=HK$7.85. Likewise, under the strong-side Convertibility Undertaking, licensed banks can convert US dollars into Hong Kong dollars in these accounts, as the HKMA undertakes to buy US dollars at the fixed exchange rate of US$1=HK$7.75. Within the Convertibility Zone bounded by the two Convertibility Undertakings, the HKMA may choose to conduct market operations in a manner consistent with Currency Board principles. Such operations can result in matching changes in the balances of these accounts.

The balance of the banking system is repayable on demand and non-interest-bearing.

23 PLACEMENTS BY BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group and Fund	
	2022	2021
At amortised cost		
Placements by central banks	**22,455**	–
Placements by banks	**77,000**	–
TOTAL	**99,455**	–

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

24 PLACEMENTS BY FISCAL RESERVES

	Group and Fund	
	2022	2021
Placements by Operating and Capital Reserves		
(i) with interest payable at a fixed rate determined annually		
General Revenue Account	**167,032**	392,933
Capital Works Reserve Fund	**208,017**	239,948
Civil Service Pension Reserve Fund	**53,864**	48,813
Innovation and Technology Fund	**29,278**	27,328
Lotteries Fund	**23,404**	22,481
Capital Investment Fund	**20,429**	21,257
Loan Fund	**7,886**	2,785
Disaster Relief Fund	**48**	88
	509,958	755,633
(ii) with interest payable at market-based rates		
General Revenue Account	**4**	3
	509,962	755,636
Placements by Future Fund with interest payable at a composite rate determined annually		
Land Fund	**250,427**	212,867
General Revenue Account	**4,800**	4,800
	255,227	217,667
TOTAL	**765,189**	973,303

Fiscal Reserves comprise Operating and Capital Reserves and the Future Fund.

Placements by Operating and Capital Reserves are repayable on demand. Interest on the majority of these placements is payable at a fixed rate determined in January each year. The rate is the average annual investment return of the Fund's Investment Portfolio for the past six years or the average annual yield of three-year Government Bond for the previous year subject to a minimum of zero percent, whichever is the higher. This rate was fixed at 5.6% per annum for 2022 (2021: 4.7%).

The Future Fund was established on 1 January 2016. Placements by Future Fund comprise an initial endowment from the balance of the Land Fund, periodic top-ups from the General Revenue Account and ad-hoc transfers from the Land Fund as directed by the Financial Secretary. These placements are divided into two portions: one linked with the performance of the Investment Portfolio and another linked with the performance of the Long-Term Growth Portfolio. Interest on these placements is payable at a composite rate which is computed annually, on a weighted average basis, with reference to the above-mentioned fixed rate determined for placements by Operating and Capital Reserves and the annual rate of return linked with the performance of the Long-Term Growth Portfolio. The composite rate for 2022 was -3.0% (2021: 17.8%). In accordance with the directive made by the Financial Secretary in October 2022, the repayment date of placements by Future Fund and the interest thereon (note 30) was extended from 31 December 2025 to 31 December 2030 unless otherwise directed by the Financial Secretary according to the terms of the placements.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

25 PLACEMENTS BY HKSAR GOVERNMENT FUNDS AND STATUTORY BODIES

	Group and Fund	
	2022	2021
Placements with interest payable at a fixed rate[1] determined annually		
Bond Fund	**266,392**	208,067
Community Care Fund	**6,399**	6,060
Elite Athletes Development Fund	**9,519**	10,684
Employees Retraining Board	**12,227**	11,578
Environment and Conservation Fund	**6,226**	6,055
Hong Kong Housing Authority	**38,846**	34,887
Hospital Authority	**16,601**	16,263
Language Fund	**6,947**	6,732
Research Endowment Fund	**52,267**	50,914
Samaritan Fund	**7,127**	6,749
Trading Funds	**10,611**	10,048
West Kowloon Cultural District Authority	**–**	8,306
Other funds[2]	**14,261**	13,719
	447,423	390,062
Placements with interest payable at market-based rates		
Deposit Protection Scheme Fund	**1,618**	4,187
TOTAL	**449,041**	394,249

[1] The rate is the average annual investment return of the Fund's Investment Portfolio for the past six years or the average annual yield of three-year Government Bond for the previous year subject to a minimum of zero percent, whichever is the higher. This rate was fixed at 5.6% per annum for 2022 (2021: 4.7%).

[2] This is a collective placement by 15 HKSAR Government funds (2021: 15 HKSAR Government funds).

Exchange Fund – Notes to the Financial Statements (continued)
(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

26 PLACEMENTS BY SUBSIDIARIES

	Fund	
	2022	2021
Placements by:		
HKMC Annuity Limited[1]	**23,690**	18,251
HKMC Insurance Limited[2]	**3,507**	3,321
The Hong Kong Mortgage Corporation Limited[3]	**3,391**	4,665
TOTAL	**30,588**	26,237

1 Placements by HKMC Annuity Limited are unsecured, interest-bearing and have fixed repayment terms from 6 to 10 years.

2 Placements by HKMC Insurance Limited are unsecured, interest-bearing and have a fixed repayment term of 6 years.

3 Placements by The Hong Kong Mortgage Corporation Limited are unsecured, interest-bearing and repayable on demand.

27 EXCHANGE FUND BILLS AND NOTES ISSUED

	Group and Fund	
	2022	2021
At fair value		
Exchange Fund Bills and Notes issued		
Exchange Fund Bills	**1,179,895**	1,124,908
Exchange Fund Notes	**20,527**	23,861
	1,200,422	1,148,769
Exchange Fund Bills held	**(99)**	(200)
TOTAL	**1,200,323**	1,148,569

Exchange Fund Bills and Notes (EFBN) issued are unsecured obligations of the Fund and are one of the components of the Monetary Base in the Currency Board Account. Exchange Fund Bills are issued by the Fund for maturities not exceeding one year. Exchange Fund Notes are issued by the Fund with maturities of 2 years or more.

Since January 2015, the Fund has ceased to issue Exchange Fund Notes with tenors of three years or above to avoid overlapping with Government Bonds of the same tenors. To maintain the overall size of Exchange Fund paper, the Fund has issued additional Exchange Fund Bills to replace maturing Exchange Fund Notes of those tenors.

Exchange Fund Bills held by the Fund as a result of market making activities are considered as redemption of the bills issued and are netted off.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

An analysis of the nominal value of EFBN issued at the beginning and the end of year is set out below:

	Group and Fund			
	2022		2021	
	Exchange Fund Bills	**Exchange Fund Notes**	Exchange Fund Bills	Exchange Fund Notes
Issued by the Currency Board Operations segment				
Nominal value at 1 January	**1,125,217**	**23,400**	1,043,130	25,000
Issuance	**3,813,938**	**4,800**	3,399,074	4,800
Redemption	**(3,752,857)**	**(7,000)**	(3,316,987)	(6,400)
Nominal value at 31 December	**1,186,298**	**21,200**	1,125,217	23,400
Long positions held by the Financial Stability and Other Activities segment				
Nominal value at 31 December	**(100)**	**–**	(200)	–
Total nominal value	**1,186,198**	**21,200**	1,125,017	23,400
Carrying amount, at fair value	**1,179,796**	**20,527**	1,124,708	23,861
Difference	**6,402**	**673**	309	(461)

The fair value changes of EFBN issued are attributable to changes in benchmark interest rates.

28 BANK LOANS

	Group		Fund	
	2022	2021	**2022**	2021
At amortised cost				
Bank loans repayable:				
Within one year	**45**	24	**–**	–
After one year but not later than two years	**2,632**	48	**–**	–
After two years but not later than five years	**12,037**	8,798	**–**	–
After five years but not later than ten years	**–**	7,260	**–**	–
TOTAL	**14,714**	16,130	**–**	–

As at 31 December 2022, the banking facilities of the Group were secured by mortgage over the investment properties with a fair value of HK$22,822 million (2021: HK$26,398 million) (note 19).

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

29 OTHER DEBT SECURITIES ISSUED

	Group		Fund	
	2022	2021	**2022**	2021
Debt securities issued, carried at amortised cost	**24,068**	25,609	**–**	–
Debt securities issued, designated as hedged items under fair value hedge	**104,796**	87,272	**–**	–
Debt securities issued, designated as hedged items under cash flow hedge	**2,819**	3,453	**–**	–
TOTAL	**131,683**	116,334	**–**	–

An analysis of the nominal value of other debt securities issued at the beginning and the end of year is set out below:

	Group		Fund	
	2022	2021	**2022**	2021
Total debt securities issued				
Nominal value at 1 January	**115,960**	61,953	**–**	–
Issuance	**97,594**	109,470	**–**	–
Redemption	**(77,622)**	(55,533)	**–**	–
Exchange differences	**(324)**	70	**–**	–
Nominal value at 31 December	**135,608**	115,960	**–**	–
Carrying amount	**131,683**	116,334	**–**	–
Difference	**3,925**	(374)	**–**	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

30 OTHER LIABILITIES

	Group		Fund	
	2022	2021	**2022**	2021
Accrued interest on placements by Fiscal Reserves (Future Fund)[1]	**135,233**	169,253	**135,233**	169,253
Accrued interest on placements by a subsidiary	**–**	–	**2,211**	2,396
Other interest payable	**2,149**	849	**407**	93
Unsettled purchases of securities	**44,540**	33,882	**44,540**	33,882
Accrued charges and other liabilities	**18,048**	28,516	**5,323**	7,301
Insurance liabilities	**20,855**	16,784	**–**	–
Lease liabilities	**751**	887	**284**	337
Housing Reserve[2]	**–**	23,079	**–**	23,079
Tax payable	**535**	693	**–**	–
Deferred tax liabilities	**799**	696	**–**	–
Provision for expected credit losses on loan commitments	**21**	23	**–**	–
TOTAL	**222,931**	274,662	**187,998**	236,341

1 In accordance with the directives made by the Financial Secretary in December 2015 and October 2022, the accrued interest on placements by Future Fund should be rolled over and compounded at the composite rate (note 24) on an annual basis and shall only be paid upon maturity of the placements (i.e. 31 December 2030) unless otherwise directed by the Financial Secretary according to the terms of the placements.

2 In accordance with the directives made by the Financial Secretary in December 2014 and December 2015, the accrued interest on placements by Fiscal Reserves earned for 2014 and 2015 with a total of HK$72,642 million were not paid on 31 December of the respective years but were set aside for the Housing Reserve which was established for the purpose of financing the development of public housing and public housing-related projects and infrastructure. The Housing Reserve earns interest at the fixed rate (note 24) on an annual basis. As announced by the Financial Secretary in his 2019-20 Budget Speech in February 2019, the Housing Reserve will be paid and brought back to the Fiscal Reserves over four financial years ending 31 March 2020 to 2023. As at 31 December 2022, the balance of the Housing Reserve had been fully paid and brought back to the Fiscal Reserves.

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

31 CASH AND CASH EQUIVALENTS AND OTHER CASH FLOW INFORMATION

(a) Components of cash and cash equivalents

	Group		Fund	
	2022	2021	**2022**	2021
Cash and money at call	**209,717**	185,467	**203,850**	179,229
Placements with banks and other financial institutions	**176,271**	125,550	**148,520**	114,321
Treasury bills and commercial papers	**49,212**	59,936	**49,212**	59,936
Certificate of deposit	**8,868**	–	**8,868**	–
TOTAL	**444,068**	370,953	**410,450**	353,486

(b) Reconciliation of cash and cash equivalents

		Group		Fund	
	Note	**2022**	2021	**2022**	2021
Amounts shown in the balance sheet					
Cash and money at call	8	**209,717**	185,467	**203,850**	179,229
Placements with banks and other financial institutions	9	**197,421**	164,276	**164,910**	121,599
Treasury bills and commercial papers	10	**1,033,689**	1,175,456	**1,033,689**	1,175,456
Certificates of deposit	10	**141,029**	180,789	**141,029**	180,789
		1,581,856	1,705,988	**1,543,478**	1,657,073
Less: Amounts with original maturity beyond 3 months		**(1,137,788)**	(1,335,035)	**(1,133,028)**	(1,303,587)
Cash and cash equivalents in the statement of cash flows		**444,068**	370,953	**410,450**	353,486

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(c) Reconciliation of liabilities arising from financing activities

The table below shows changes in the liabilities arising from financing activities, which are liabilities for which cash flows were, or future cash flows will be, classified in the statement of cash flows as cash flows from financing activities.

	Group			Fund
	Bank loans (note 28)	Other debt securities issued (note 29)	Lease liabilities (note 30)	Lease liabilities (note 30)
At 1 January 2021	12,050	62,587	990	409
Changes from financing cash flows				
Bank loans raised	1,498	–	–	–
Proceeds from issue of other debt securities	–	109,360	–	–
Redemption of other debt securities issued	–	(55,533)	–	–
Principal portion of lease payments	–	–	(115)	(77)
Non-cash changes				
Increase in lease liabilities relating to new leases	–	–	13	5
Increase in bank loans arising from deemed acquisition of a subsidiary	2,975	–	–	–
Amortisation	16	112	16	4
Exchange differences	(409)	71	(1)	–
Change in fair value	–	(263)	–	–
Other changes				
Interest portion of lease payments	–	–	(16)	(4)
At 31 December 2021	16,130	116,334	887	337
At 1 January 2022	**16,130**	**116,334**	**887**	**337**
Changes from financing cash flows				
Repayment of bank loans	**(22)**	**–**	**–**	**–**
Proceeds from issue of other debt securities	**–**	**97,470**	**–**	**–**
Redemption of other debt securities issued	**–**	**(77,622)**	**–**	**–**
Principal portion of lease payments	**–**	**–**	**(121)**	**(83)**
Non-cash changes				
Increase in lease liabilities relating to new leases	**–**	**–**	**30**	**30**
Amortisation	**25**	**92**	**14**	**4**
Exchange differences	**(1,419)**	**(323)**	**(45)**	**–**
Change in fair value	**–**	**(4,268)**	**–**	**–**
Other changes				
Interest portion of lease payments	**–**	**–**	**(14)**	**(4)**
At 31 December 2022	**14,714**	**131,683**	**751**	**284**

The total cash outflows for leases of the Group and the Fund in 2022 were HK$147 million (2021: HK$143 million) and HK$87 million (2021: HK$81 million) respectively.

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

32 OPERATING SEGMENT INFORMATION

The Group determines its operating segments based on the reports reviewed by the chief operating decision maker. As a central banking institution, the HKMA is responsible for managing the Fund and maintaining the monetary and banking stability of Hong Kong. The Group comprises operating segments as stated in note 2.21.

	Group							
	Currency Board Operations (note (a))		Reserves Management		Financial Stability and Other Activities		Total	
	2022	2021	**2022**	2021	**2022**	2021	**2022**	2021
Income								
Interest and dividend income	**30,029**	5,658	**37,831**	35,194	**2,998**	1,229	**70,858**	42,081
Investment (losses)/gains	**(43,007)**	1,624	**(226,442)**	149,642	**(4,524)**	1,648	**(273,973)**	152,914
Other income	**–**	–	**66**	128	**3,624**	3,491	**3,690**	3,619
	(12,978)	7,282	**(188,545)**	184,964	**2,098**	6,368	**(199,425)**	198,614
Expenditure								
Interest expense	**11,999**	441	**49,951**	110,431	**2,760**	623	**64,710**	111,495
Other expenses	**1,605**	1,798	**1,994**	2,150	**6,633**	6,963	**10,232**	10,911
	13,604	2,239	**51,945**	112,581	**9,393**	7,586	**74,942**	122,406
(Deficit)/Surplus before share of (loss)/profit of associates and joint ventures	**(26,582)**	5,043	**(240,490)**	72,383	**(7,295)**	(1,218)	**(274,367)**	76,208
Share of (loss)/profit of associates and joint ventures, net of tax	**–**	–	**(4,767)**	3,773	**61**	39	**(4,706)**	3,812
Gain on disposal of a joint venture	**–**	–	**–**	188	**–**	–	**–**	188
(Deficit)/Surplus before taxation	**(26,582)**	5,043	**(245,257)**	76,344	**(7,234)**	(1,179)	**(279,073)**	80,208

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group									
	Currency Board Operations (note (a))		Reserves Management		Financial Stability and Other Activities		Re-allocation (notes (b) & (c))		Total	
	2022	2021	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021
Assets										
Backing Assets										
Investment in designated US dollar assets	**2,120,691**	2,347,389	**–**	–	**–**	–	**–**	–	**2,120,691**	2,347,389
Interest receivable on designated US dollar assets	**5,217**	2,412	**–**	–	**–**	–	**–**	–	**5,217**	2,412
Net accounts (payable)/receivable	**(15,942)**	–	**–**	–	**–**	–	**22,966**	–	**7,024**	–
Other investments	**–**	–	**2,077,372**	2,473,375	**230,911**	201,251	**(99)**	(200)	**2,308,184**	2,674,426
Other assets	**–**	–	**22,687**	27,020	**11,698**	8,415	**–**	603	**34,385**	36,038
TOTAL ASSETS	**2,109,966**	2,349,801	**2,100,059**	2,500,395	**242,609**	209,666	**22,867**	403	**4,475,501**	5,060,265
Liabilities										
Monetary Base										
Certificates of Indebtedness	**605,959**	592,364	**–**	–	**–**	–	**–**	–	**605,959**	592,364
Government-issued currency notes and coins in circulation	**13,160**	13,126	**–**	–	**–**	–	**–**	–	**13,160**	13,126
Balance of the banking system	**96,251**	377,516	**–**	–	**–**	–	**–**	–	**96,251**	377,516
Exchange Fund Bills and Notes issued	**1,200,422**	1,148,769	**–**	–	**–**	–	**(99)**	(200)	**1,200,323**	1,148,569
Interest payable on Exchange Fund Notes	**99**	92	**–**	–	**–**	–	**–**	–	**99**	92
Net accounts payable/(receivable)	**518**	(603)	**–**	–	**–**	–	**–**	603	**518**	–
Placements by banks and other financial institutions	**–**	–	**77,000**	–	**22,455**	–	**–**	–	**99,455**	–
Placements by Fiscal Reserves	**–**	–	**765,189**	973,303	**–**	–	**–**	–	**765,189**	973,303
Placements by HKSAR Government funds and statutory bodies	**–**	–	**447,423**	390,062	**1,618**	4,187	**–**	–	**449,041**	394,249
Bank loans	**–**	–	**14,714**	16,130	**–**	–	**–**	–	**14,714**	16,130
Other debt securities issued	**–**	–	**608**	681	**131,075**	115,653	**–**	–	**131,683**	116,334
Other liabilities	**–**	–	**165,888**	236,790	**40,635**	40,072	**22,966**	–	**229,489**	276,862
TOTAL LIABILITIES	**1,916,409**	2,131,264	**1,470,822**	1,616,966	**195,783**	159,912	**22,867**	403	**3,605,881**	3,908,545

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(a) Currency Board Operations

Starting from 1 October 1998, specific US dollar assets of the Fund have been designated to back the Monetary Base, which comprises Certificates of Indebtedness, government-issued currency notes and coins in circulation, balance of the banking system and EFBN issued. While specific assets of the Fund have been earmarked for backing the Monetary Base, all the Fund's assets are available for the purpose of supporting the Hong Kong dollar exchange rate under the Linked Exchange Rate system.

In accordance with an arrangement approved by the Financial Secretary in January 2000, assets can be transferred between the Backing Portfolio and general reserves when the Backing Ratio reaches either the upper trigger point (112.5%) or the lower trigger point (105%). This arrangement allows transfer of excess assets out of the Backing Portfolio to maximise their earning potential while ensuring that there are sufficient liquid assets in the Backing Portfolio. Notwithstanding the deficit or surplus recorded in 2022 and 2021, the Backing Ratio did not reach the above trigger points. It stood at 110.12% as at 31 December 2022 (2021: 110.24%).

(b) Re-allocation of assets and liabilities

For the purpose of the Currency Board Operations segment, certain liabilities of the Fund are deducted from the Backing Assets and certain assets are deducted from the Monetary Base in order to allow proper computation of the Backing Ratio. The following items are re-allocation adjustments to reconcile the segmental information to the Group balance sheet:

(i) the Backing Assets are presented on a net basis in the Currency Board Operations. Accounts payable for unsettled purchases of securities and redemption of Certificates of Indebtedness are included in "net accounts (payable)/receivable" to offset corresponding investments in the Backing Assets. As at 31 December 2022, deductions from the Backing Assets comprised "other liabilities" of HK$22,966 million (2021: Nil); and

(ii) the Monetary Base is also presented on a net basis. As Hong Kong dollar interest rate swaps have been used as a means to manage the cost of issuing Exchange Fund Notes, interest receivable and unrealised gains on these interest rate swaps are included in "net accounts payable/(receivable)" to reduce the Monetary Base. As at 31 December 2022, there were no "other assets" (2021: HK$603 million, comprised interest receivable of HK$27 million and unrealised gains of HK$576 million) deducted from the Monetary Base.

(c) Exchange Fund Bills and Notes held

EFBN held by the Financial Stability and Other Activities segment are treated as redemption of EFBN issued in the Currency Board Operations segment.

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

33 PLEDGED ASSETS

Assets are pledged as margin for futures contracts, over-the-counter derivative financial instruments and securities lending agreements and as collateral for securing general banking facilities. Securities lent do not include EFBN in issue. There are no financial assets pledged against contingent liabilities.

		Group		Fund	
	Note	**2022**	2021	**2022**	2021
Assets pledged					
Cash and money at call		**6,830**	3,084	**6,830**	3,084
Financial assets measured at fair value through income and expenditure account		**5,133**	8,349	**5,133**	8,349
Equity interests in associates		**1,519**	1,826	**–**	–
Equity interests in joint ventures		**2,953**	3,029	**–**	–
Investment properties	19	**22,822**	26,398	**–**	–
Secured liabilities					
Derivative financial instruments		**1,394**	45	**1,394**	45
Bank loans	28	**14,714**	16,130	**–**	–
Other debt securities issued		**608**	681	**–**	–

During the year, the Group entered into collateralised reverse repurchase agreements, repurchase agreements and securities lending transactions that may result in credit exposure in the event that the counterparty to the transaction is unable to fulfil its contractual obligations. The Group controls credit risk associated with these activities by monitoring counterparty credit exposure and collateral values on a daily basis and requiring additional collateral to be deposited with or returned to the Group when deemed necessary.

These transactions are conducted under terms that are usual and customary to standard lending, and securities borrowing and lending activities.

34 COMMITMENTS

(a) Capital commitments

Capital expenditure authorised but not provided for in the financial statements at the reporting date is as follows:

	Group		Fund	
	2022	2021	**2022**	2021
Contracted for	**62**	33	**59**	30
Authorised but not yet contracted for	**1,129**	1,417	**999**	1,342
TOTAL	**1,191**	1,450	**1,058**	1,372

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Credit facility to the International Monetary Fund

The Fund has participated in the New Arrangements to Borrow (NAB), a standby credit facility provided to the International Monetary Fund (IMF) for the purpose of managing instability in the international monetary system. The facility is subject to periodic review and renewal. As at 31 December 2022, the Fund had an undertaking under the NAB to lend foreign currencies to the IMF up to HK$7,086 million equivalent (2021: HK$7,433 million equivalent), in the form of a loan bearing prevailing market interest rates. The outstanding principal due from the IMF under the NAB amounted to HK$34 million equivalent (2021: HK$87 million equivalent) (note 16).

(c) Credit facility to the Hong Kong Deposit Protection Board

The Fund has provided the Hong Kong Deposit Protection Board (HKDPB) with a standby credit facility of HK$120 billion (2021: HK$120 billion) at prevailing market interest rates for meeting the necessary liquidity required for payment of compensation in the event of a bank failure. As at 31 December 2022, there was no outstanding balance due from the HKDPB under this facility (2021: Nil).

(d) Repurchase agreements with other central banks

The Fund has entered into bilateral repurchase agreements with various central banks in Asia and Australasia amounting up to HK$44,878 million equivalent (2021: HK$44,829 million equivalent). The arrangement allows each organisation to enhance the liquidity of its foreign reserve portfolio with minimal additional risk. As at 31 December 2022, there was no outstanding transaction with any central bank under this arrangement (2021: Nil).

(e) Chiang Mai Initiative Multilateralisation Agreement

The Chiang Mai Initiative Multilateralisation (CMIM) was established under the aegis of the 10 Association of Southeast Asian Nations (ASEAN) member countries together with China, Japan and Korea (ASEAN+3) to provide short-term US dollars through currency swap transactions to participants facing balance-of-payments and liquidity difficulties with a total size of US$240 billion (2021: US$240 billion). Hong Kong, through the HKMA, participates in the CMIM and has undertaken to commit up to US$8.4 billion (2021: US$8.4 billion) out of the Fund. Hong Kong has the right to request liquidity support up to US$8.4 billion (2021: US$8.4 billion) from the CMIM in case of emergency. Up to 31 December 2022, there had been no request to activate the CMIM (2021: Nil).

(f) Bilateral swap agreement

The People's Bank of China and the HKMA announced in July 2022 enhancements to the existing bilateral currency swap agreement. Its size has been expanded from RMB500 billion/HK$590 billion to RMB800 billion/HK$940 billion. It has also become a long-standing arrangement with no need for renewal. The arrangement helps enhance renminbi liquidity in Hong Kong to support the continued development of Hong Kong's offshore renminbi market. As at 31 December 2022, the amount drawn under the arrangement was RMB20 billion (2021: Nil).

(g) Investment commitments

The Group's subsidiaries with principal activities of holding investments, including properties, had outstanding investment commitment of HK$284,234 million equivalent as at 31 December 2022 (2021: HK$232,215 million equivalent).

(h) Other commitments

A subsidiary of the Group, The Hong Kong Mortgage Corporation Limited, had outstanding undrawn loan commitments of HK$2,110 million as at 31 December 2022 (2021: HK$2,847 million).

35 CONTINGENT LIABILITIES

(a) Uncalled portion of investment in the Bank for International Settlements

As at 31 December 2022, the Fund had a contingent liability of up to 16.1 million SDRs or HK$167 million equivalent (2021: 16.1 million SDRs or HK$176 million equivalent), in respect of the uncalled portion of its 4,285 shares (2021: 4,285 shares) in the Bank for International Settlements (note 11).

SDR is an international reserve asset created by the IMF. Its value is based on a basket of five major currencies comprising US dollar, euro, renminbi, yen and pound sterling. As at 31 December 2022, SDR 1 was valued at US$1.33520 (2021: US$1.40203).

(b) Financial guarantees

The Group has provided guarantees in respect of bank loans granted to joint ventures. The maximum liability as at 31 December 2022 was HK$4,728 million equivalent (2021: HK$1,024 million equivalent).

36 MATERIAL RELATED PARTY TRANSACTIONS

Transactions with related parties are conducted at rates determined by the Monetary Authority taking into account the nature of each transaction on a case-by-case basis.

All the material related party transactions and balances, including commitments, are disclosed in notes 4(b), 4(d), 14, 17, 18, 24, 25, 26, 30 and 34(c).

The Exchange Fund Advisory Committee (EFAC) and its Sub-Committees advise the Financial Secretary in his control of the Fund. Members of the EFAC and its Sub-Committees are appointed in a personal capacity by the Financial Secretary for the expertise and experience that they can bring to the Committees. Transactions with companies related to members of the EFAC and its Sub-Committees, if any, have been conducted as a normal part of the operation of the Group and on terms consistent with its ongoing operations.

37 FINANCIAL RISK MANAGEMENT

This note presents information about the nature and extent of risks to which the Group is exposed, in particular those arising from financial instruments, and the risk management framework of the Group. The principal financial risks the Group is exposed to are credit risk, market risk and liquidity risk.

37.1 Governance

The Financial Secretary is advised by the EFAC in his control of the Fund. The EFAC is established under section 3(1) of the Exchange Fund Ordinance, which requires the Financial Secretary to consult the Committee in his exercise of control of the Fund. Members of the EFAC are appointed in a personal capacity by the Financial Secretary under the delegated authority of the Chief Executive of the HKSAR for the expertise and experience that they can bring to the Committee. Such expertise and experience include knowledge of monetary, financial, investment management and economic affairs, as well as of accounting, management, business and legal matters.

The EFAC is assisted in its work by five Sub-Committees, which monitor specific areas of the HKMA's work and report and make recommendations to the Financial Secretary through the EFAC.

Among these Sub-Committees, the Investment Sub-Committee (ISC) monitors the HKMA's investment management work and makes recommendations on the investment policy and strategy of the Fund and on risk management and other related matters. Operating within the policies and guidelines endorsed by the EFAC or its delegated authority, the Exchange Fund Investment Office (EFIO) of the HKMA conducts the day-to-day management of the Fund's investment activities, with the Risk and Compliance Department, which is independent of the front office functions of the EFIO, carrying out the risk management activities of the Fund.

37.2 Investment management and control

Investment activities of the Fund are conducted in accordance with the investment benchmark derived from the Fund's investment objectives. The investment benchmark directs the strategic asset allocation of the Fund and is reviewed on a regular basis to ensure that it consistently meets the investment objectives. Changes to the investment benchmark, if required, must be endorsed by the EFAC.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Fund's target asset and currency mix are as follows:

	2022	2021
Asset type		
Bonds	70%	73%
Equities and related investments	30%	27%
	100%	100%
Currency		
US dollar and Hong Kong dollar	81%	84%
Others[1]	19%	16%
	100%	100%

[1] Other currencies included mainly euro, renminbi, pound sterling and yen.

In addition to the investment benchmark, the EFAC determines the risk tolerance level governing the extent to which the Fund's asset and currency mix may deviate from the investment benchmark, taking into account the risk volatility of and correlation across the asset classes and markets that the Fund is allowed to invest in. Authority to take medium term investment decisions is delegated to senior management of the EFIO.

The Risk and Compliance Department is responsible for risk management and compliance monitoring regarding the investments of the Fund. It monitors the risk exposure of the Fund, checks compliance of investment activities against established guidelines and reports and follows up any identified breaches.

37.3 Credit risk

Credit risk is the risk of financial loss when a counterparty or a borrower fails to meet its contractual obligations. The Group's credit risk arises principally from the investments of the Fund and the loan portfolio held by the subsidiaries.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.3.1 Management of credit risk

The HKMA maintains effective credit risk management over the investments of the Fund. Based on the delegated authority of the EFAC, the Credit, Rules and Compliance Committee (CRCC) was established within the HKMA with the following responsibilities: (i) to establish and maintain the Credit Exposure Policy to govern the investments of the Fund; (ii) to review the adequacy of the existing credit risk management practices and, where necessary, formulate proposals for amendments; (iii) to conduct analysis of credit risk issues; (iv) to establish and review credit limits for the approved issuers and counterparties; (v) to review and consider proposals of amendments to the Operational Rules for Exchange Fund Investments as appropriate, and make recommendations to the Monetary Authority for endorsement; and (vi) to monitor the compliance of the investments of the Fund with the established policies and limits, and report and follow up any identified breaches. The CRCC is chaired by the Deputy Chief Executive (Monetary) whose responsibilities are independent of the day-to-day investment activities of the Fund, and includes representatives from the EFIO, the Risk and Compliance Department, the Monetary Management Department, and the Research Department of the HKMA.

In light of the rapidly evolving risk environment, the HKMA will remain vigilant in monitoring and managing the Fund's credit risk exposure, and will sustain the impetus for better credit risk management practices to support the investment activities of the Fund.

Credit limits are established in accordance with in-house methodologies as set out in the Operational Rules for Exchange Fund Investments and the Credit Exposure Policy to limit exposures to counterparty, issuer and geographical risks arising from the investments of the Fund.

(a) Counterparty risk

The Fund selects its counterparties in lending, placement, derivatives and trading transactions prudently and objectively. Since the Fund conducts transactions with a counterparty for a range of financial instruments, credit limits are established to limit the overall exposure to each authorised counterparty based on its credit ratings, financial strength and other relevant information.

Counterparty credit exposures are measured according to the risk nature of financial products involved in the transaction. Counterparty credit exposures of derivatives include an estimate for the potential future credit exposure of the derivative contracts, in addition to their positive mark-to-market replacement value.

(b) Issuer risk

Issuer risk arises from investments in debt securities. Credit limits for approved issuers are set on both individual and group levels to control the risk of loss arising from the default of debt securities issuers and to prevent undue risk concentration.

Moreover, to be qualified as an approved investment, a new market or financial instrument must meet the minimum credit, security and liquidity requirements of the Fund.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(c) Geographical risk

Geographical risk is broadly defined to include both the sovereign risk and the transfer risk. Sovereign risk denotes a government's ability and willingness to repay its obligations. Transfer risk is the risk that a borrower may not be able to secure foreign exchange to service its external obligations, for example, due to an action by the government to impose restrictions on the transfer of funds from local debtors to foreign creditors. Under the existing framework, geographical concentration limits are established to control the Fund's overall credit risk exposures to the economies endorsed by the CRCC.

The above credit limits are reviewed regularly. Credit exposure is monitored against these limits on a daily basis. To ensure prompt identification, proper approval and consistent monitoring of credit risk, the Fund has implemented a unified automated credit monitoring system which provides fully-integrated straight-through-processing linking the front, middle and back office functions. The pre-deal checking takes place in the front office prior to the commitment of any transaction to ensure that the intended transaction will not exceed the credit limits. The end-of-day compliance checking further verifies that the Fund complies with the established credit policies and procedures.

Any breaches of credit limits are reported to the CRCC and the ISC, and are followed up by the Risk and Compliance Department in a timely manner. The approval authorities to sanction these breaches are set out in the Credit Exposure Policy.

To manage the exposure to credit risk arising from the loan portfolio and mortgage insurance business, a prudent risk management framework is established to (i) select Approved Sellers carefully, (ii) adopt prudent mortgage purchasing criteria and insurance eligibility criteria, (iii) conduct effective and in-depth due diligence reviews, (iv) implement robust project structures and financing documentation, (v) perform an ongoing monitoring and reviewing mechanism, and (vi) ensure adequate protection for higher-risk mortgages.

37.3.2 Exposure to credit risk

The maximum exposure to credit risk of the financial assets of the Group and the Fund at the reporting date is equal to their carrying amounts. The maximum exposures to credit risk of off-balance sheet exposures are as follows:

		Group		Fund	
	Note	**2022**	2021	**2022**	2021
Risk in force – mortgage insurance	37.6	**110,633**	88,917	**–**	–
Risk in force – other guarantees and insurance	37.6	**23,321**	18,661	**–**	–
Loan commitments, guarantees and other credit related commitments		**246,690**	244,462	**317,492**	317,815
TOTAL		**380,644**	352,040	**317,492**	317,815

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.3.3 Credit quality and expected credit losses measurement

In general, expected credit losses are calculated using three main parameters, i.e. probability of default, loss given default and exposure at default. The 12-month expected credit losses are calculated by multiplying the 12-month probability of default, loss given default and exposure at default. Lifetime expected credit losses are calculated using the lifetime probability of default instead. The probability of default represents the expected point-in-time probability of a default over either (i) the next 12 months (i.e. 12-month probability of default) or (ii) the remaining lifetime of the financial instrument (i.e. lifetime probability of default), based on conditions existing at the reporting date and forward-looking information that affect credit risk. The exposure at default represents the expected balance at default, taking into account the repayment of principal and interest from the reporting date to the default event together with any expected drawdown of a committed loan. The loss given default represents expected losses on the exposure at default given the event of default, taking into account, among other attributes, the mitigating effect of collateral value at the time it is expected to be realised and the time value of money.

While cash and money at call, loans and loan commitments with special 100% guarantee under the SFGS and financial guarantee contracts are subject to the impairment requirements, the Group has estimated that their expected credit losses are minimal and considers that no loss allowance is required. Credit quality and expected credit losses measurement for other financial instruments are analysed below.

(a) Placements with banks and other financial institutions

The Group has established an expected credit losses calculation methodology that is based on the probability of default assigned to each counterparty according to their external credit ratings and the related historical credit losses experience, adjusted for forward-looking information, to determine the amounts of loss allowances.

These financial assets are considered to have a low credit risk. The loss allowances are measured at amounts equal to 12-month expected credit losses.

The credit quality of placements with banks and other financial institutions is analysed below:

	Group		Fund	
	2022	2021	**2022**	2021
Credit rating[1]				
AA- to AA+	**130,692**	72,274	**125,139**	65,267
A- to A+	**56,036**	78,889	**33,843**	48,551
Lower than A- or un-rated[2]	**10,693**	13,113	**5,928**	7,781
Gross carrying amount	**197,421**	164,276	**164,910**	121,599
Less: allowances for expected credit losses	**(5)**	(8)	**(2)**	(3)
Carrying amount	**197,416**	164,268	**164,908**	121,596

1 This is the lowest of ratings designated by Moody's, Standard & Poor's and Fitch.
2 This included mainly balance with central banks which is not rated.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The movements in loss allowances for placements with banks and other financial institutions during the year are as follows:

	Group	Fund
At 1 January 2021	5	3
Increase in loss allowances recognised in the income and expenditure account	3	–
At 31 December 2021	8	3
At 1 January 2022	**8**	**3**
Decrease in loss allowances recognised in the income and expenditure account	**(3)**	**(1)**
At 31 December 2022	**5**	**2**

(b) Debt securities

The Group predominantly invests in liquid OECD member countries' government bonds and other quasi-government debt securities issues. As at 31 December 2022, approximately 63% (2021: 64%) of the debt securities held by the Group were rated "double-A" or above by Moody's, Standard & Poor's or Fitch.

For debt securities measured at amortised cost or fair value through other comprehensive income, the Group has established an expected credit losses calculation methodology that is based on the probability of default assigned to each issuer according to their external credit ratings and the related historical credit losses experience, adjusted for forward-looking information, to determine the amounts of loss allowances.

These debt securities are considered to have a low credit risk. The loss allowances are measured at amounts equal to 12-month expected credit losses.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The credit quality of debt securities is analysed below:

(i) Debt securities measured at fair value

	Group		Fund	
	2022	2021	**2022**	2021
Credit rating[1]				
Debt securities measured at fair value through income and expenditure account				
AAA	**294,210**	493,424	**294,210**	493,424
AA- to AA+	**1,442,748**	1,624,181	**1,442,748**	1,624,181
A- to A+	**444,358**	543,022	**444,358**	543,022
Lower than A- or un-rated[2]	**592,051**	629,367	**592,041**	629,356
TOTAL	**2,773,367**	3,289,994	**2,773,357**	3,289,983
Debt securities measured at fair value through other comprehensive income				
AAA	**–**	138	**–**	–
AA- to AA+	**1,048**	2,458	**–**	–
A- to A+	**196**	1,051	**–**	–
TOTAL	**1,244**	3,647	**–**	–

[1] This is the lowest of ratings designated by Moody's, Standard & Poor's and Fitch.
[2] This included mainly debt securities issued by the Bank for International Settlements which are not rated.

(ii) Debt securities measured at amortised cost

	Group	
	2022	2021
Credit rating[1]		
AAA	**405**	776
AA- to AA+	**4,398**	2,170
A- to A+	**8,345**	8,265
Gross carrying amount	**13,148**	11,211
Less: allowances for expected credit losses	**(5)**	(4)
Carrying amount	**13,143**	11,207

[1] This is the lowest of ratings designated by Moody's, Standard & Poor's and Fitch.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

There were no movements in loss allowances for debt securities measured at fair value through other comprehensive income in 2022 and 2021. The movements in loss allowances for debt securities measured at amortised cost during the year are as follows:

	Group	
	2022	2021
At 1 January	**4**	3
Increase in loss allowances recognised in the income and expenditure account	**1**	1
At 31 December	**5**	4

(c) Loan portfolio

The Group uses three categories for loans which reflect their credit risk and how the loss allowances are determined for each of those categories. These categories do not apply to loans with special 100% guarantee under the SFGS because their expected credit losses are minimal in view of the full guarantee provided by the HKSAR Government.

A summary of the assumptions underpinning the Group's expected credit loss model on loans is as follows:

Category	**Group definition of category**	**Basis for calculation of expected credit losses**
Stage 1	Loans that have a low credit risk with borrowers having a strong capacity to meet the contractual obligations at the reporting date or there have not been significant increases in credit risk since initial recognition	12-month expected credit losses
Stage 2	Loans for which there have been significant increases in credit risk since initial recognition, where significant increases in credit risk are presumed when contractual payments are more than 30 days past due	Lifetime expected credit losses – not credit impaired
Stage 3	Loans that have objective evidence of impairment including those that exhibit characteristics of non-repayment or those with contractual payments that are 90 days past due	Lifetime expected credit losses – credit impaired

Loans will be written off when there is no reasonable expectation of recovery on the delinquent interest and/or principal repayments.

Over the term of the loans, the Group accounts for its credit risk by appropriately providing for expected credit losses on a timely basis. In determining the expected credit losses, the Group considers historical credit risk information with reference to external or internal credit ratings and applies forward-looking factors, such as macroeconomic data and credit outlook of the borrowers, to perform multi-scenario analysis.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The credit quality of loan portfolio is analysed below:

	Group – 2022			
	Stage 1	**Stage 2**	**Stage 3**	**Total**
Loan portfolio with external credit rating[1]				
BBB- to BBB+	**722**	**–**	**–**	**722**
BB- to BB+	**2,829**	**–**	**–**	**2,829**
Lower than BB-	**3,818**	**410**	**149**	**4,377**
Gross carrying amount	**7,369**	**410**	**149**	**7,928**
Less: allowances for expected credit losses	**(56)**	**(13)**	**(86)**	**(155)**
	7,313	**397**	**63**	**7,773**
Loan portfolio with internal credit rating				
Gross carrying amount	**11,452**	**10**	**8**	**11,470**
Less: allowances for expected credit losses	**(13)**	**–**	**(1)**	**(14)**
	11,439	**10**	**7**	**11,456**
TOTAL	**18,752**	**407**	**70**	**19,229**

	Group – 2021			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating[1]				
BBB- to BBB+	886	–	–	886
BB- to BB+	2,712	–	–	2,712
Lower than BB-	3,603	474	258	4,335
Gross carrying amount	7,201	474	258	7,933
Less: allowances for expected credit losses	(41)	(20)	(93)	(154)
	7,160	454	165	7,779
Loan portfolio with internal credit rating				
Gross carrying amount	8,560	8	8	8,576
Less: allowances for expected credit losses	(5)	–	(1)	(6)
	8,555	8	7	8,570
TOTAL	15,715	462	172	16,349

[1] These are equivalent ratings of Moody's, Standard & Poor's or Fitch provided by an external institution.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The movements in loss allowances for loan portfolio during the year are as follows:

	Group			
	Stage 1	Stage 2	Stage 3	Total
At 1 January 2021	37	23	104	164
Increase/(Decrease) in loss allowances for change in net exposures	13	–	(2)	11
(Decrease)/Increase in loss allowances for change in credit risk	(16)	(3)	4	(15)
Transfers into Stage 1	13	–	(13)	–
Transfers into Stage 2	(1)	1	–	–
Exchange differences	–	(1)	1	–
At 31 December 2021	46	20	94	160
At 1 January 2022	**46**	**20**	**94**	**160**
Increase/(Decrease) in loss allowances for change in net exposures	**11**	**(1)**	**–**	**10**
(Decrease)/Increase in loss allowances for change in credit risk	**(3)**	**(17)**	**19**	**(1)**
Transfers into Stage 1	**18**	**(18)**	**–**	**–**
Transfers into Stage 2	**(3)**	**29**	**(26)**	**–**
At 31 December 2022	**69**	**13**	**87**	**169**

(d) Loan commitments

The movements in provision for expected credit losses on loan commitments during the year are as follows:

	Group			
	Stage 1	Stage 2	Stage 3	Total
At 1 January 2021	26	13	2	41
Decrease in provision for expected credit losses recognised in the income and expenditure account	(6)	(12)	–	(18)
Transfers into Stage 1	2	–	(2)	–
At 31 December 2021	22	1	–	23
At 1 January 2022	**22**	**1**	**–**	**23**
Decrease in provision for expected credit losses recognised in the income and expenditure account	**(2)**	**–**	**–**	**(2)**
Transfers into Stage 1	**1**	**(1)**	**–**	**–**
At 31 December 2022	**21**	**–**	**–**	**21**

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.3.4 Concentration of credit risk

The majority of the Group's credit risk exposures are from the holding of highly liquid debt securities issued or guaranteed by OECD member countries' governments and other quasi-government entities. The maximum credit risk exposure by industry group is analysed below:

	Group		Fund	
	2022	2021	**2022**	2021
Governments and government agencies	**2,085,908**	2,344,877	**1,992,744**	2,270,949
Supra-nationals	**185,613**	239,712	**185,139**	239,331
States, provinces and public-sector entities	**188,983**	221,806	**267,929**	300,542
Financial institutions	**500,276**	530,555	**452,312**	471,913
Others[1]	**767,092**	791,871	**786,728**	844,954
TOTAL	**3,727,872**	4,128,821	**3,684,852**	4,127,689

[1] These included debt securities issued by the Bank for International Settlements.

37.4 Market risk

Market risk is the risk that changes in market variables such as interest rates, exchange rates and equity prices may affect the fair values or cash flows of investments.

37.4.1 Types of market risk

(a) Interest rate risk

Interest rate risk refers to the risk of loss arising from changes in market interest rates. This can be further classified into fair value interest rate risk and cash flow interest rate risk.

Fair value interest rate risk is the risk that the fair value of a financial instrument will fluctuate because of changes in market interest rates. The Group is exposed to fair value interest rate risk since a substantial portion of its investments is in fixed-rate debt securities. These securities are subject to interest rate risk as their fair values will fall when market interest rates increase. Other significant financial assets and financial liabilities with a fixed interest rate, and therefore subject to interest rate risk, include placements with banks and other financial institutions and EFBN issued.

Cash flow interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Because the Group has no significant floating-rate investments and liabilities, the Group's future cash flows are not materially affected by potential changes in market interest rates.

(b) Currency risk

Currency risk is the risk of loss arising from changes in foreign exchange rates. A large portion of the Group's foreign currency assets is held in US dollars with the remaining mainly in other major international currencies. When the exchange rates of the relevant foreign currencies against the Hong Kong dollar fluctuate, the value of these foreign currency assets expressed in Hong Kong dollar will vary accordingly.

Due to the linked exchange rate of the US dollar relative to the Hong Kong dollar, the Group's currency risk principally arises from its assets and liabilities denominated in foreign currencies other than the US dollar.

(c) Equity price risk

Equity price risk is the risk of loss arising from changes in prices or valuation. The Group's equity and related investments are subject to price risk since the value of these investments will decline if market prices or valuation fall.

The majority of the equity securities held by the Group are constituent stocks of major stock market indexes and companies with large market capitalisation.

37.4.2 Management of market risk

The market risk of the Fund as a whole is regularly measured and monitored to prevent excessive risk exposure. The investment benchmark and tracking error limit of the Fund govern the asset allocation strategies. These, together with the volatility of asset markets, will affect the Fund's market risk exposure. The Fund uses derivative financial instruments to manage its exposures to market risk and facilitate the implementation of investment strategies. The market risk of the Fund is mainly measured and monitored using a Value-at-Risk (VaR) methodology.

VaR is calculated using the parametric approach based on a 95% confidence level and one-month time horizon. The result represents the maximum expected loss of the Fund over a one-month period under normal market conditions, with a 5% chance that the actual loss may exceed the calculated VaR. The Fund's absolute VaR and the relative VaR (i.e. the VaR of the Fund relative to its investment benchmark), expressed in dollar amounts, are measured by the Risk and Compliance Department and reported to management, the ISC and the EFAC on a regular basis.

The relative VaR of the Fund is also used to calculate the actual tracking error of the Fund against its investment benchmark. This is regularly monitored against the tracking error limit endorsed by the EFAC to ensure that the market risk exposure of the Fund is within its limit. The tracking error of a portfolio indicates how well the portfolio tracks its investment benchmark. The smaller the tracking error, the closer the portfolio tracks its benchmark. The tracking error limit is established to prevent the Fund from taking unduly large market risk with respect to its investment benchmark. The actual tracking error of the Fund is regularly reported to the ISC and the EFAC, and any breach of the limit is followed up in a timely manner.

VaR is a widely accepted measure of market risk within the financial services industry. It provides users with a single amount to measure market risk and takes into account multiple risks. VaR should however be assessed in the context of some of its inherent limitations. The calculation of VaR involves a number of assumptions that may or may not be valid in a real life scenario, in particular in extreme market conditions. The calculation of VaR assumes that future events can be predicted by historical data, and that changes in risk factors follow a normal distribution. The end-of-day basis does not reflect intraday exposures. In addition, the confidence level on which calculation of VaR is based needs to be taken into account as it indicates the possibility that a larger loss could be realised.

To compensate for some of the limitations of VaR, the HKMA also conducts stress tests to estimate the potential losses under extremely adverse market conditions. This serves to identify the major attributes of market risk under extreme market conditions, and helps to prevent the Fund from being exposed to excessive market risk. The results of the stress tests are also reported to the ISC and the EFAC on a regular basis.

To manage the interest rate risk arising from the fixed-rate debt securities issued by the Group to fund the purchase of portfolios of loans, a major portion of the risk is hedged using fair value hedges in the form of interest rate swaps by swapping into floating-rate funding to better match the floating-rate assets.

The Fund's investment in less liquid assets (i.e. private equity and real estate) is grouped under the Long-Term Growth Portfolio. The investment risks of the less liquid assets are managed at the aggregate level through such measures as asset class approval, allocation limit and aggregate general partner exposure. The target asset allocation of the Long-Term Growth Portfolio is determined concurrently with that of other asset classes, subject to prudent risk management principles and portfolio diversification strategy.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.4.3 *Exposure to market risk*

(a) Interest rate risk

The interest rate gap position in respect of the Group's major interest-bearing assets and liabilities, including the net repricing effect of interest rate derivatives is shown below. The assets and liabilities are stated at carrying amounts at the reporting date and categorised by the earlier of contractual repricing dates or maturity dates.

	Group – 2022 Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	Non-interest-bearing financial instruments
Assets								
Cash and money at call	207,850	–	–	–	–	–	207,850	1,867
Placements with banks and other financial institutions	162,417	32,523	2,456	–	–	–	197,396	20
Financial assets measured at fair value through income and expenditure account	473,776	408,343	842,962	563,215	366,067	101,593	2,755,956	1,074,767
Financial assets measured at fair value through other comprehensive income	–	290	–	692	263	–	1,245	1,263
Debt securities measured at amortised cost	78	–	2,510	6,363	4,192	–	13,143	–
Loan portfolio	96,434	4,649	3,755	3,375	1,178	–	109,391	–
Interest-bearing assets	940,555	445,805	851,683	573,645	371,700	101,593	3,284,981	
Liabilities								
Placements by banks and other financial institutions	99,455	–	–	–	–	–	99,455	–
Placements by Fiscal Reserves with interest payable at market-based rates[1]	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates[1]	1,618	–	–	–	–	–	1,618	–
Exchange Fund Bills and Notes issued	327,020	627,986	232,272	10,824	2,221	–	1,200,323	–
Bank loans	5,094	3,580	–	6,040	–	–	14,714	–
Other debt securities issued	3,950	29,339	38,442	55,905	4,047	–	131,683	–
Interest-bearing liabilities	437,141	660,905	270,714	72,769	6,268	–	1,447,797	
Net interest-bearing assets/(liabilities)	503,414	(215,100)	580,969	500,876	365,432	101,593	1,837,184	
Interest rate derivatives (net position, notional amounts)	(1,508)	(25,825)	10,645	13,479	922	367	(1,920)	
Interest rate sensitivity gap	501,906	(240,925)	591,614	514,355	366,354	101,960	1,835,264	

[1] Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24 and 25). As at 31 December 2022, such placements amounted to HK$1,212,608 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021 Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	Non-interest-bearing financial instruments
Assets								
Cash and money at call	176,950	–	–	–	–	–	176,950	8,517
Placements with banks and other financial institutions	119,149	41,601	3,499	–	–	–	164,249	19
Financial assets measured at fair value through income and expenditure account	465,881	479,296	1,120,233	683,105	390,681	131,437	3,270,633	1,222,263
Financial assets measured at fair value through other comprehensive income	–	1,845	1,239	247	316	–	3,647	1,336
Debt securities measured at amortised cost	184	221	2,137	3,493	5,172	–	11,207	–
Loan portfolio	77,332	3,005	6,593	3	154	325	87,412	–
Interest-bearing assets	839,496	525,968	1,133,701	686,848	396,323	131,762	3,714,098	
Liabilities								
Placements by Fiscal Reserves with interest payable at market-based rates[1]	3	–	–	–	–	–	3	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates[1]	4,187	–	–	–	–	–	4,187	–
Exchange Fund Bills and Notes issued	301,076	595,914	234,742	13,088	3,749	–	1,148,569	–
Bank loans	5,723	2,389	–	4,800	3,218	–	16,130	–
Other debt securities issued	5,283	20,566	41,497	43,506	3,184	2,298	116,334	–
Interest-bearing liabilities	316,272	618,869	276,239	61,394	10,151	2,298	1,285,223	
Net interest-bearing assets/(liabilities)	523,224	(92,901)	857,462	625,454	386,172	129,464	2,428,875	
Interest rate derivatives (net position, notional amounts)	2,589	(30,793)	17,526	9,739	1,518	(282)	297	
Interest rate sensitivity gap	525,813	(123,694)	874,988	635,193	387,690	129,182	2,429,172	

[1] Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24 and 25). As at 31 December 2021, such placements amounted to HK$1,363,362 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022 Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	Non-interest-bearing financial instruments
Assets								
Cash and money at call	203,620	–	–	–	–	–	203,620	230
Placements with banks and other financial institutions	153,201	9,366	2,341	–	–	–	164,908	–
Financial assets measured at fair value through income and expenditure account	473,776	408,343	842,962	563,215	366,067	101,593	2,755,956	640,231
Interest-bearing assets	830,597	417,709	845,303	563,215	366,067	101,593	3,124,484	
Liabilities								
Placements by banks and other financial institutions	99,455	–	–	–	–	–	99,455	–
Placements by Fiscal Reserves with interest payable at market-based rates[1]	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates[1]	1,618	–	–	–	–	–	1,618	–
Exchange Fund Bills and Notes issued	327,020	627,986	232,272	10,824	2,221	–	1,200,323	–
Interest-bearing liabilities	428,097	627,986	232,272	10,824	2,221	–	1,301,400	
Net interest-bearing assets/(liabilities)	402,500	(210,277)	613,031	552,391	363,846	101,593	1,823,084	
Interest rate derivatives (net position, notional amounts)	3,870	(10,356)	3,536	1,463	1,120	367	–	
Interest rate sensitivity gap	406,370	(220,633)	616,567	553,854	364,966	101,960	1,823,084	

1 Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies, and subsidiaries with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24, 25 and 26). As at 31 December 2022, such placements amounted to HK$1,243,196 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2021 Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	Non-interest-bearing financial instruments
Assets								
Cash and money at call	172,626	–	–	–	–	–	172,626	6,603
Placements with banks and other financial institutions	106,004	15,592	–	–	–	–	121,596	–
Financial assets measured at fair value through income and expenditure account	465,881	479,296	1,120,233	683,105	390,681	131,437	3,270,633	764,378
Interest-bearing assets	744,511	494,888	1,120,233	683,105	390,681	131,437	3,564,855	
Liabilities								
Placements by Fiscal Reserves with interest payable at market-based rates[1]	3	–	–	–	–	–	3	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates[1]	4,187	–	–	–	–	–	4,187	–
Exchange Fund Bills and Notes issued	301,076	595,914	234,742	13,088	3,749	–	1,148,569	–
Interest-bearing liabilities	305,266	595,914	234,742	13,088	3,749	–	1,152,759	
Net interest-bearing assets/(liabilities)	439,245	(101,026)	885,491	670,017	386,932	131,437	2,412,096	
Interest rate derivatives (net position, notional amounts)	2,077	(12,359)	(1,792)	7,511	4,845	(282)	–	
Interest rate sensitivity gap	441,322	(113,385)	883,699	677,528	391,777	131,155	2,412,096	

1 Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies, and subsidiaries with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24, 25 and 26). As at 31 December 2021, such placements amounted to HK$1,389,599 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Currency risk

The currency exposure of the Group is summarised below:

	Group			
	2022		2021	
	Assets	**Liabilities**	Assets	Liabilities
Hong Kong dollar	**295,385**	**2,857,596**	316,604	3,203,584
US dollar	**3,527,562**	**676,908**	4,071,465	657,291
	3,822,947	**3,534,504**	4,388,069	3,860,875
Others[1]	**652,554**	**71,377**	672,196	47,670
TOTAL	**4,475,501**	**3,605,881**	5,060,265	3,908,545

	Fund			
	2022		2021	
	Assets	**Liabilities**	Assets	Liabilities
Hong Kong dollar	**171,602**	**2,761,877**	202,295	3,121,865
US dollar	**3,266,400**	**663,801**	3,790,135	639,974
	3,438,002	**3,425,678**	3,992,430	3,761,839
Others[1]	**570,036**	**25,119**	577,725	1,533
TOTAL	**4,008,038**	**3,450,797**	4,570,155	3,763,372

1 Other currencies included mainly euro, renminbi, pound sterling and yen.

(c) Equity price risk

As at 31 December 2022 and 2021, the majority of equity investments were reported as "financial assets measured at fair value through income and expenditure account" as shown in note 10.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.4.4 Sensitivity analysis

The VaR positions of the Fund as at 31 December and during the year, based on a 95% confidence level and one-month time horizon, are as follows:

	Fund	
	2022	2021
Value-at-Risk		
At 31 December[1]	**68,113**	40,177
During the year		
Average	**64,703**	43,508
Maximum	**79,199**	51,572
Minimum	**43,550**	36,518

[1] The amount represented 1.7% of the Fund's investments which were subject to VaR measurement as at 31 December 2022 (2021: 0.9%).

37.5 Liquidity risk

Liquidity risk refers to the risk that the Group may not have sufficient funds available to meet its liabilities as they fall due. In addition, the Group may not be able to liquidate its financial assets at a price close to fair value within a short period of time.

37.5.1 Management of liquidity risk

To ensure sufficient liquidity to meet liabilities and the ability to raise funds to meet exceptional needs, the Group invests primarily in liquid financial markets and instruments that are readily saleable to meet liquidity needs. There are internal investment restrictions to prevent undue concentrations in individual debt securities issues, debt securities issuers, and groups of closely related debt securities issuers. There are also limitations on the maximum proportion of assets that can be placed in fixed term deposits and less liquid assets, and requirements regarding the ability to convert foreign currency assets into cash. In addition, prudent liquidity control measures are imposed on the Fund's investments in less liquid credit assets such as asset-backed securities. All these restrictions and limits are designed to promote the liquidity of assets and consequently minimise the liquidity risk. The liquidity risk for the Fund's investment is monitored on an aggregate basis through appropriate portfolio mix with sufficient liquid assets to offset investments of less liquid assets. Compliance with these limits is monitored by the Risk and Compliance Department and any breaches are reported to the ISC and are promptly followed up.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.5.2 *Exposure to liquidity risk*

The remaining contractual maturities at the reporting date of major financial liabilities, commitments and derivative financial liabilities, which are based on contractual undiscounted cash flows and the earliest date on which the Group can be required to pay, are shown below:

	Group – 2022 Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total
Non-derivative cash outflows							
Certificates of Indebtedness	605,959	–	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	–	96,251
Placements by banks and other financial institutions	99,919	–	–	–	–	–	99,919
Placements by Fiscal Reserves	509,962	–	–	–	255,227	–	765,189
Placements by HKSAR Government funds and statutory bodies	306,495	2,100	9,280	112,350	18,816	–	449,041
Exchange Fund Bills and Notes issued	327,192	630,827	236,149	11,754	2,468	–	1,208,390
Bank loans	59	58	362	15,777	–	–	16,256
Other debt securities issued	2,462	21,845	43,761	66,493	2,804	3,208	140,573
Lease liabilities	11	25	101	307	41	1,789	2,274
Other liabilities (excluding lease liabilities)	48,031	14,013	869	3,822	139,508	13,326	219,569
Loan commitments, guarantees and other credit related commitments	246,690	–	–	–	–	–	246,690
TOTAL	2,256,191	668,868	290,522	210,503	418,864	18,323	3,863,271
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	330	605	1,009	775	405	117	3,241
– on gross basis							
Total outflows	35,982	78,905	13,534	32,844	2,875	–	164,140
Total inflows	(35,349)	(77,771)	(12,694)	(31,787)	(2,898)	–	(160,499)
TOTAL	963	1,739	1,849	1,832	382	117	6,882

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021 Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total
Non-derivative cash outflows							
Certificates of Indebtedness	592,364	–	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	–	377,516
Placements by Fiscal Reserves	755,636	–	–	217,667	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	253,147	3,622	12,550	94,930	30,000	–	394,249
Exchange Fund Bills and Notes issued	301,082	596,157	235,084	13,426	3,730	–	1,149,479
Bank loans	63	37	331	10,223	7,411	–	18,065
Other debt securities issued	3,561	12,382	46,590	49,249	3,838	3,388	119,008
Lease liabilities	10	23	97	403	57	2,021	2,611
Other liabilities (excluding lease liabilities)	80,797	3,942	768	172,278	3,525	10,831	272,141
Loan commitments, guarantees and other credit related commitments	244,462	–	–	–	–	–	244,462
TOTAL	2,621,764	616,163	295,420	558,176	48,561	16,240	4,156,324
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	315	176	24	96	136	47	794
– on gross basis							
Total outflows	60,759	39,522	22,542	16,446	918	–	140,187
Total inflows	(59,941)	(39,599)	(23,184)	(16,610)	(892)	–	(140,226)
TOTAL	1,133	99	(618)	(68)	162	47	755

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022 Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total
Non-derivative cash outflows							
Certificates of Indebtedness	605,959	–	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	–	96,251
Placements by banks and other financial institutions	99,919	–	–	–	–	–	99,919
Placements by Fiscal Reserves	509,962	–	–	–	255,227	–	765,189
Placements by HKSAR Government funds and statutory bodies	306,495	2,100	9,280	112,350	18,816	–	449,041
Placements by subsidiaries	5,243	–	–	10,400	14,945	–	30,588
Exchange Fund Bills and Notes issued	327,192	630,827	236,149	11,754	2,468	–	1,208,390
Lease liabilities	8	16	68	199	–	–	291
Other liabilities (excluding lease liabilities)	36,531	13,811	66	1,524	135,233	–	187,165
Credit related commitments	317,492	–	–	–	–	–	317,492
TOTAL	2,318,212	646,754	245,563	136,227	426,689	–	3,773,445
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	194	125	184	290	327	117	1,237
– on gross basis							
Total outflows	30,263	70,995	230	–	–	–	101,488
Total inflows	(29,734)	(70,085)	(229)	–	–	–	(100,048)
TOTAL	723	1,035	185	290	327	117	2,677

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2021 Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total
Non-derivative cash outflows							
Certificates of Indebtedness	592,364	–	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	–	377,516
Placements by Fiscal Reserves	755,636	–	–	217,667	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	253,147	3,622	12,550	94,930	30,000	–	394,249
Placements by subsidiaries	5,799	–	–	7,900	12,538	–	26,237
Exchange Fund Bills and Notes issued	301,082	596,157	235,084	13,426	3,730	–	1,149,479
Lease liabilities	7	14	61	259	5	–	346
Other liabilities (excluding lease liabilities)	60,579	3,768	129	171,290	–	–	235,766
Credit related commitments	317,815	–	–	–	–	–	317,815
TOTAL	2,677,071	603,561	247,824	505,472	46,273	–	4,080,201
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	305	37	1	7	136	47	533
– on gross basis							
Total outflows	57,986	31,044	–	–	–	–	89,030
Total inflows	(57,146)	(30,735)	–	–	–	–	(87,881)
TOTAL	1,145	346	1	7	136	47	1,682

37.6 Insurance risk

The Group, through its life insurance subsidiary, offers annuity product to personal customers. Insurance risk arises from an inaccurate assessment of the risks entailed in writing and pricing an insurance policy. The major insurance risk is the longevity risk which arises from the possibility that actual life expectancy of annuitants being longer than expected.

Insurance risk is managed by adopting a prudent set of assumptions and conducting regular experience studies. Asset-liability mismatch risk inherent to the annuity product is due to asset volatility, uncertain annuity liabilities, cash flow mismatch and currency mismatch between assets and liabilities. To mitigate such risk, the Group actively monitors the performance and steadfastly maintains control over asset allocation.

The Group established Longevity Risk Committee to manage longevity risk of the Group. Its duties include approving longevity risk management policies and hedging transactions and reviewing longevity experiences and exposures of the Group. It also monitors and analyses the general trend, technological changes and their implications for human longevity.

The Group, through its general insurance subsidiary, provides mortgage insurance cover in respect of mortgage loans and reverse mortgage loans originated by participating lenders and secured on residential properties in Hong Kong, life insurance policies and, if applicable, other assets; and operates a scheme for the HKSAR Government providing financial guarantee on loans advanced by participating lenders for local SMEs. The Group faces insurance risk of the possibility of the insured event occurring and the uncertainty of the amount of the resulting claim.

Under the Mortgage Insurance Programme, the Group offers mortgage insurance that covers participating lenders for first credit losses, in general, of up to 40% of the value of properties financed under mortgage loans with loan-to-value ratio 90% or below at origination. The Group reinsures the exposure with approved reinsurers. As at 31 December 2022, the total risk-in-force was HK$110.6 billion (2021: HK$88.9 billion), of which HK$99.1 billion (2021: HK$80.6 billion) was retained by the Group after reinsurance.

The Group also provides financial guarantee cover to participating authorized institutions up to 50% to 70% of the banking facilities granted to SMEs in Hong Kong, and insurance cover in respect of reverse mortgage loans originated by participating lenders and secured on residential properties, life insurance policies and, if applicable, other assets. As at 31 December 2022, the total risk-in-force of the reverse mortgage loans was HK$23.3 billion (2021: HK$18.7 billion), of which HK$16.3 billion (2021: HK$14.0 billion) was retained by the Group after reinsurance.

For a portfolio of insurance contracts where the theory of probability is applied to pricing and provisioning, the principal risk that the Group faces under its insurance contracts is that the actual claims exceed the carrying amount of the insurance liabilities. This could occur because the frequency or severity of claims is greater than estimated. Insurance events are random and the actual number and amount of claims and benefits will vary from year to year from the estimate established using statistical techniques.

Experience shows that the larger the portfolio of similar insurance contracts, the smaller the relative variability about the expected outcome will be. In addition, a more diversified portfolio is less likely to be affected across the board by a change in any subset of the portfolio. The Group has developed a business strategy to diversify the type of insurance risks accepted and within each of the key categories to achieve a sufficiently large population of risks to reduce the variability of the expected outcome.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The frequency and severity of claims can be affected by several factors. The most significant factors are a downturn in the economy, a slump in local property market and a low mortality rate of reverse mortgage borrowers. Economic downturn, which may cause a rise in defaulted payment, affects the frequency of claims and collateral value. A drop in property prices, where the collateral values fall below the outstanding balance of the mortgage loans, will increase the severity of claims. Low mortality rate of reverse mortgage borrowers means longer payout period and larger loan balance will be over time. This will affect the frequency and severity of claims as there is a risk of the property value being insufficient to cover the outstanding loan balance in the future.

The Group manages these risks by adopting a set of prudent insurance underwriting eligibility criteria. To ensure sufficient provision is set aside for meeting future claim payments, the Group calculates technical reserves on prudent liability valuation assumptions and the methods prescribed in the regulatory guidelines. The Group also takes out quota-share reinsurance from its approved mortgage reinsurers in an effort to limit its risk exposure under the mortgage insurance business and reverse mortgage business. The Group conducts comprehensive assessment including the financial strength and credit ratings of the reinsurers in accordance with the approved selection framework. The approved mortgage reinsurers are subject to periodic reviews. For financial guarantee cover provided to participating lenders, the Group relies on the lenders' prudent credit assessment on the borrowers to mitigate default risk and any loss in the loan facility will be shared proportionately between the Group and the lender on a pari passu basis to minimise moral hazards. The mortality assumptions of reverse mortgages are also reviewed on a regular basis, to assess the risk of larger deviation between the actual and expected operating results.

37.7 Operational risk

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk is inherent in all aspects of the Group's operations covering all business segments.

The Group's objective is to cost-effectively manage operational risk to prevent financial losses or damage to the Group's reputation.

The primary responsibility for the development and implementation of controls to address operational risk rests with line management, with oversight by an internal high-level Risk Committee. The Committee is chaired by the Chief Executive of the HKMA with the Deputy Chief Executives as members. The Risk Committee provides direction and guidance for line management in managing operational risk.

Operational risk management is supported by a formal risk assessment process. This is conducted annually and supplemented with quarterly updates. It requires each division to assess and rank the potential impact and likelihood of occurrence of financial and operational risks. It also requires divisions to review the procedures and controls in place for addressing the identified risks. This risk and control self-assessment is reviewed by the Internal Audit Division of the HKMA to ensure consistency and reasonableness before submission to the Risk Committee, which has the responsibility for ensuring that the identified risks are properly addressed. Results of this risk assessment are also taken into account, in conjunction with other risk factors, for the development of an annual Internal Audit work plan. The Internal Audit Division will audit the risk areas at various frequencies depending on the levels of risks and the results of past audits. It reports its findings regularly to the EFAC Audit Sub-Committee and the Chief Executive of the HKMA and follows up on outstanding issues to ensure that they are resolved in a proper manner.

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Operational risk is also inherent in the investment activities and processes of the EFIO. To enhance its operational risk oversight, the Risk and Compliance Department formalised its operational risk management framework for the EFIO. The key elements of the framework include identification and monitoring of key risk indicators; reporting to the senior management of the HKMA on the operational risk profile of the EFIO; handling of operational risk incidents; and issuing monthly operational risk reports to relevant senior executives.

38 FAIR VALUE MEASUREMENT OF FINANCIAL INSTRUMENTS

38.1 Fair value of financial instruments measured at fair value on a recurring basis

38.1.1 Fair value hierarchy

The carrying values of financial instruments measured at fair value at the reporting date across the three levels of the fair value hierarchy are shown below:

	Group – 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	147,867	885,822	–	1,033,689
Certificates of deposit	–	141,029	–	141,029
Other debt securities	1,537,584	61,065	–	1,598,649
Equity securities	493,374	77,552	61,560	632,486
Investment funds	–	–	424,870	424,870
	2,178,825	1,165,468	486,430	3,830,723
Financial assets measured at fair value through other comprehensive income				
Debt securities	1,244	–	–	1,244
Equity securities	–	–	1,264	1,264
	1,244	–	1,264	2,508
Derivative financial instruments	240	2,711	–	2,951
TOTAL	2,180,309	1,168,179	487,694	3,836,182
Liabilities				
Exchange Fund Bills and Notes issued	–	1,200,323	–	1,200,323
Derivative financial instruments	193	6,982	–	7,175
TOTAL	193	1,207,305	–	1,207,498

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	28,585	1,146,871	–	1,175,456
Certificates of deposit	–	180,789	–	180,789
Other debt securities	1,861,622	72,127	–	1,933,749
Equity securities	584,635	102,287	73,153	760,075
Investment funds	–	–	442,827	442,827
	2,474,842	1,502,074	515,980	4,492,896
Financial assets measured at fair value through other comprehensive income				
Debt securities	2,358	1,289	–	3,647
Equity securities	–	–	1,336	1,336
	2,358	1,289	1,336	4,983
Derivative financial instruments	341	4,255	–	4,596
TOTAL	2,477,541	1,507,618	517,316	4,502,475
Liabilities				
Exchange Fund Bills and Notes issued	–	1,148,569	–	1,148,569
Derivative financial instruments	282	2,010	–	2,292
TOTAL	282	1,150,579	–	1,150,861

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	147,867	885,822	–	1,033,689
Certificates of deposit	–	141,029	–	141,029
Other debt securities	1,537,574	61,065	–	1,598,639
Equity securities	493,374	77,552	51,904	622,830
	2,178,815	1,165,468	51,904	3,396,187
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,264	1,264
Derivative financial instruments	240	1,294	–	1,534
TOTAL	2,179,055	1,166,762	53,168	3,398,985
Liabilities				
Exchange Fund Bills and Notes issued	–	1,200,323	–	1,200,323
Derivative financial instruments	193	2,640	–	2,833
TOTAL	193	1,202,963	–	1,203,156

	Fund –2021			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	28,585	1,146,871	–	1,175,456
Certificates of deposit	–	180,789	–	180,789
Other debt securities	1,861,611	72,127	–	1,933,738
Equity securities	584,635	102,287	58,106	745,028
	2,474,831	1,502,074	58,106	4,035,011
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,336	1,336
Derivative financial instruments	341	3,287	–	3,628
TOTAL	2,475,172	1,505,361	59,442	4,039,975
Liabilities				
Exchange Fund Bills and Notes issued	–	1,148,569	–	1,148,569
Derivative financial instruments	282	1,385	–	1,667
TOTAL	282	1,149,954	–	1,150,236

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Group's policy is to recognise transfers between levels of fair value hierarchy as at the reporting date in which they occur. During the year, there were no transfers of financial instruments between Level 1 and Level 2 of the fair value hierarchy (2021: Nil).

An analysis of the movement between opening and closing balances of Level 3 financial assets, measured at fair value using a valuation technique with significant unobservable inputs, is shown below:

	2022			
	Group		Fund	
	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income
At 1 January 2022	515,980	1,336	58,106	1,336
Net (losses)/gains recognised in the income and expenditure account	(58,105)	–	1,739	–
Net losses recognised in other comprehensive loss	–	(72)	–	(72)
Purchases	66,931	–	3,947	–
Sales	(40,048)	–	(13,746)	–
Exchange differences	(186)	–	–	–
Transfers into Level 3	2,695	–	2,695	–
Transfers out of Level 3	(837)	–	(837)	–
At 31 December 2022	486,430	1,264	51,904	1,264
Net (losses)/gains recognised in the income and expenditure account relating to revaluation of those assets held at the reporting date	(57,924)	–	1,834	–

	2021			
	Group		Fund	
	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income
At 1 January 2021	419,955	1,370	65,829	1,370
Net gains recognised in the income and expenditure account	63,721	–	4,636	–
Net losses recognised in other comprehensive loss	–	(34)	–	(34)
Purchases	90,292	–	10,452	–
Sales	(56,472)	–	(21,500)	–
Exchange differences	(205)	–	–	–
Transfers into Level 3	2,141	–	2,141	–
Transfers out of Level 3	(3,452)	–	(3,452)	–
At 31 December 2021	515,980	1,336	58,106	1,336
Net gains recognised in the income and expenditure account relating to revaluation of those assets held at the reporting date	62,230	–	3,133	–

In 2022 and 2021, certain financial instruments were transferred between Level 2 and Level 3 of the fair value hierarchy reflecting changes in transparency of observable market data for these instruments.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

38.1.2 Valuation techniques and key inputs

The fair value of financial instruments classified under Level 1 is based on quoted market prices in active markets for identical assets or liabilities at the reporting date.

In the absence of quoted market prices in active markets, the fair value of financial instruments classified under Level 2 is estimated using present value or other valuation techniques, with inputs based on market conditions existing at the reporting date. Specific valuation techniques and key inputs used to value these financial instruments include:

(a) quoted market price or broker quotes for similar instruments;

(b) derivative financial instruments are priced using models with observable market inputs including interest rate swap and foreign exchange contracts; and

(c) commercial papers and debt securities are priced using discounted cash flow techniques with observable yield curves.

For unlisted investment funds and certain unlisted equity securities which are classified under Level 3, their fair values are estimated by making reference to valuation reports provided by external investment managers. It is not practicable to quote a range of key unobservable inputs.

For certain unlisted equity securities valued by the Group, which are classified under Level 3, their fair values are derived from Comparable Company Valuation Model, which derives the valuation of an investment through the product of its earnings, earning multiples of comparable public companies and a discount factor for a lack of liquidity. Significant unobservable inputs used under this valuation method include earning multiples of similar companies and liquidity discount:

Significant unobservable inputs	**Quantitative amount**	
	2022	2021
Earning multiples of similar companies	**3.4 – 18.0**	5.8 – 25.9
Liquidity discount	**20%**	20%

The shareholding in the Bank for International Settlements (note 11) is also classified under Level 3. Its fair value is estimated based on the Group's interest in the net asset value of the Bank at the reporting date, discounted at 30% to reflect the discount rate used by the Bank for share repurchases.

If the fair values of these investments had increased/decreased by 10%, it would have resulted in a decrease/an increase in the Group's deficit for the year of HK$48,643 million (2021: an increase/a decrease in the Group's surplus for the year of HK$51,598 million) and a decrease/an increase in other comprehensive loss of HK$126 million (2021: HK$134 million).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

38.2 Fair value of debt securities not measured at fair value on a recurring basis

The fair values of debt securities measured at amortised cost and other debt securities issued that were not measured at fair value are shown below:

		Group – 2022			
		Carrying value	**Fair value**		
	Note		**Level 1**	**Level 2**	**Total**
Financial assets					
Debt securities measured at amortised cost	13	**13,143**	**9,730**	**2,872**	**12,602**
Financial liabilities					
Other debt securities issued	29	**131,683**	**–**	**131,400**	**131,400**

		Group – 2021			
		Carrying value	Fair value		
	Note		Level 1	Level 2	Total
Financial assets					
Debt securities measured at amortised cost	13	11,207	9,964	1,814	11,778
Financial liabilities					
Other debt securities issued	29	116,334	–	116,991	116,991

In the absence of quoted market prices in active markets, the fair values of debt securities classified under Level 2 are estimated using present value or other valuation techniques, with inputs based on market conditions existing at the reporting date. The valuation technique for other debt securities issued is the use of discounted cash flow model based on a current yield curve appropriate for their remaining term to maturity.

All other financial instruments of the Group and the Fund are measured at fair value or carried at amounts not materially different from their fair values as at 31 December 2022 and 2021.

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

39 POSSIBLE IMPACT OF AMENDMENTS, NEW STANDARDS AND INTERPRETATIONS ISSUED BUT NOT YET EFFECTIVE FOR THE YEAR ENDED 31 DECEMBER 2022

Up to the date of issue of these financial statements, the HKICPA has issued a number of amendments, new standards and interpretations which are not yet effective for the year ended 31 December 2022 and which have not been adopted in these financial statements. The new standards include:

	Effective for accounting periods beginning on or after
HKFRS 17 "Insurance Contracts"	1 January 2023

The Group plans to complete the full implementation of HKFRS 17 in 2023, and the implementation project is currently progressing as planned.

HKFRS 17 "Insurance Contracts"

HKFRS 17 establishes a comprehensive global insurance standard which provides guidance on the recognition, measurement, presentation and disclosure of insurance contracts. This standard sets out the requirements that the Group should apply in accounting for insurance contracts it issues and reinsurance contracts it holds. It is effective for annual periods beginning on or after 1 January 2023 and will be applied retrospectively with comparatives restated from 1 January 2022 unless impracticable.

40 APPROVAL OF FINANCIAL STATEMENTS

The financial statements were approved by the Financial Secretary on the advice of the Exchange Fund Advisory Committee on 11 April 2023.

Annex and Tables

Annex Authorized Institutions and Local Representative Offices

at 31.12.2022

Licensed Banks

Incorporated in Hong Kong

Airstar Bank Limited
Ant Bank (Hong Kong) Limited
Bank of China (Hong Kong) Limited
BANK OF COMMUNICATIONS (HONG KONG) LIMITED
Bank of East Asia, Limited (The)
China CITIC Bank International Limited
China Construction Bank (Asia) Corporation Limited
Chiyu Banking Corporation Limited
Chong Hing Bank Limited
CITIBANK (HONG KONG) LIMITED
CMB WING LUNG BANK LIMITED
DAH SING BANK, LIMITED
DBS BANK (HONG KONG) LIMITED
FUBON BANK (HONG KONG) LIMITED
Fusion Bank Limited
Hang Seng Bank, Limited
Hongkong and Shanghai Banking Corporation Limited (The)
Industrial and Commercial Bank of China (Asia) Limited
Livi Bank Limited
Morgan Stanley Bank Asia Limited
Mox Bank Limited
Nanyang Commercial Bank, Limited
OCBC Wing Hang Bank Limited
Ping An OneConnect Bank (Hong Kong) Limited
PUBLIC BANK (HONG KONG) LIMITED
Shanghai Commercial Bank Limited
Standard Chartered Bank (Hong Kong) Limited
Tai Sang Bank Limited
Tai Yau Bank, Limited
Welab Bank Limited
ZA Bank Limited

Incorporated outside Hong Kong

ABN AMRO Bank N.V.
AGRICULTURAL BANK OF CHINA LIMITED
Australia and New Zealand Banking Group Limited
Banco Bilbao Vizcaya Argentaria S.A.
Banco Santander, S.A.
Bangkok Bank Public Company Limited
Bank J. Safra Sarasin AG
also known as:
Banque J. Safra Sarasin SA
Banca J. Safra Sarasin SA
Bank J. Safra Sarasin Ltd
Bank Julius Baer & Co. Ltd.
Bank of America, National Association
Bank of China Limited
Bank of Communications Co., Ltd.
BANK OF DONGGUAN CO., LTD.
Bank of India
Bank of Montreal
BANK OF NEW YORK MELLON (THE)
Bank of Nova Scotia (The)
BANK OF SINGAPORE LIMITED
BANK OF TAIWAN
BANK SINOPAC
Banque Pictet & Cie SA
Barclays Bank PLC
BDO UNIBANK, INC.
also known as:
BDO
BDO Unibank
Banco De Oro
Banco De Oro Unibank
BDO Banco De Oro
BNP PARIBAS
CA Indosuez (Switzerland) SA
Canadian Imperial Bank of Commerce
CATHAY BANK
CATHAY UNITED BANK COMPANY, LIMITED
Chang Hwa Commercial Bank, Ltd.
Chiba Bank, Ltd. (The)
CHINA BOHAI BANK CO., LTD.
China Construction Bank Corporation
China Development Bank
China Everbright Bank Co., Ltd.
CHINA GUANGFA BANK CO., LTD.
China Merchants Bank Co., Ltd.
CHINA MINSHENG BANKING CORP., LTD.
China Zheshang Bank Co., Ltd.
Chugoku Bank, Ltd. (The)
CIMB Bank Berhad
Citibank, N.A.
Commerzbank AG
Commonwealth Bank of Australia
Coöperatieve Rabobank U.A.
CREDIT AGRICOLE CORPORATE AND INVESTMENT BANK
CREDIT INDUSTRIEL ET COMMERCIAL
Credit Suisse AG
CTBC Bank Co., Ltd
DBS BANK LTD.
Deutsche Bank Aktiengesellschaft
DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main

Deletion in 2022

BNP PARIBAS SECURITIES SERVICES
CANARA BANK

Annex Authorized Institutions and Local Representative Offices at 31.12.2022 (continued)

E.Sun Commercial Bank, Ltd.
EAST WEST BANK
EFG Bank AG
also known as:
EFG Bank SA
EFG Bank Ltd
ERSTE GROUP BANK AG
FAR EASTERN INTERNATIONAL BANK
First Abu Dhabi Bank PJSC
First Commercial Bank, Ltd.
Hachijuni Bank, Ltd. (The)
HDFC BANK LIMITED
HONG LEONG BANK BERHAD
HSBC Bank plc
HSBC Bank USA, National Association
Hua Nan Commercial Bank, Ltd.
HUA XIA BANK CO., Limited
ICICI BANK LIMITED
Indian Overseas Bank
Industrial and Commercial Bank of China Limited
Industrial Bank Co., Ltd.
Industrial Bank of Korea
ING Bank N.V.
INTESA SANPAOLO SPA
JPMorgan Chase Bank, National Association
KBC Bank N.V.
KEB Hana Bank
Kookmin Bank
Land Bank of Taiwan Co., Ltd.
LGT Bank AG
also known as:
LGT Bank Ltd.
LGT Bank SA
MALAYAN BANKING BERHAD
Mashreq Bank - Public Shareholding Company
also known as Mashreqbank psc
MEGA INTERNATIONAL COMMERCIAL BANK CO., LTD.
MELLI BANK PLC
Mitsubishi UFJ Trust and Banking Corporation
Mizuho Bank, Ltd.
MUFG Bank, Ltd.
National Australia Bank Limited
National Bank of Pakistan
NATIXIS
NATWEST MARKETS PLC
NongHyup Bank
O-Bank Co., Ltd.
Oversea-Chinese Banking Corporation Limited
Philippine National Bank
Ping An Bank Co., Ltd.
PT. Bank Negara Indonesia (Persero) Tbk.
Qatar National Bank (Q.P.S.C.)
Royal Bank of Canada
Shanghai Commercial & Savings Bank, Ltd. (The)
Shanghai Pudong Development Bank Co., Ltd.
Shiga Bank, Ltd. (The)
Shinhan Bank
Shizuoka Bank, Ltd. (The)
Skandinaviska Enskilda Banken AB
Societe Generale
Standard Chartered Bank
State Bank of India
State Street Bank and Trust Company
Sumitomo Mitsui Banking Corporation
Sumitomo Mitsui Trust Bank, Limited
TAIPEI FUBON COMMERCIAL BANK CO., LTD.
TAISHIN INTERNATIONAL BANK CO., LTD
Taiwan Business Bank, Ltd.
Taiwan Cooperative Bank, Ltd.
Taiwan Shin Kong Commercial Bank Co., Ltd.
Toronto-Dominion Bank
UBS AG
UCO Bank
UniCredit Bank AG
UNION BANCAIRE PRIVÉE, UBP SA
also known as UNITED PRIVATE BANK, UBP LTD
Union Bank of India
United Overseas Bank Ltd.
Wells Fargo Bank, National Association
Westpac Banking Corporation
Woori Bank
Yuanta Commercial Bank Co., Ltd

Deletion in 2022

MACQUARIE BANK LIMITED
Pictet & Cie (Europe) S.A.
Punjab National Bank

Annex Authorized Institutions and Local Representative Offices at 31.12.2022 (continued)

Restricted Licence Banks

Incorporated in Hong Kong

ALLIED BANKING CORPORATION (HONG KONG) LIMITED

Banc of America Securities Asia Limited

Bank of China International Limited

Bank of Shanghai (Hong Kong) Limited

Citicorp International Limited

Goldman Sachs Asia Bank Limited

Habib Bank Zurich (Hong Kong) Limited

J.P. MORGAN SECURITIES (ASIA PACIFIC) LIMITED

KDB Asia Limited

ORIX ASIA LIMITED

Deletion in 2022

SCOTIABANK (HONG KONG) LIMITED

Incorporated outside Hong Kong

EUROCLEAR BANK

Korea Development Bank (The)

PT. BANK MANDIRI (PERSERO) Tbk

Siam Commercial Bank Public Company Limited (The)

Thanakharn Kasikorn Thai Chamkat (Mahachon) also known as KASIKORNBANK PUBLIC COMPANY LIMITED

Deposit-taking Companies

Incorporated in Hong Kong

BCOM Finance (Hong Kong) Limited

BPI International Finance Limited

Chau's Brothers Finance Company Limited

Chong Hing Finance Limited

Commonwealth Finance Corporation Limited

Corporate Finance (D.T.C.) Limited

FUBON CREDIT (HONG KONG) LIMITED

KEB Hana Global Finance Limited

KEXIM ASIA LIMITED

PUBLIC FINANCE LIMITED

Vietnam Finance Company Limited

WOORI GLOBAL MARKETS ASIA LIMITED

Incorporated outside Hong Kong

NIL

Annex Authorized Institutions and Local Representative Offices at 31.12.2022 (continued)

Local Representative Offices

ABC BANKING CORPORATION LTD
Ashikaga Bank, Ltd. (The)
BANCO BPM SOCIETA' PER AZIONI
Banco Bradesco S.A.
Banco Security
BANK OF BEIJING CO., LTD.
Bank of Fukuoka, Ltd. (The)
Bank of Kyoto, Ltd. (The)
Bank of Yokohama, Ltd. (The)
Banque Cantonale de Genève
Banque Transatlantique S.A.
BENDURA BANK AG
CAIXABANK S.A.
Citco Bank Nederland N.V.
CLEARSTREAM BANKING S.A.
Doha Bank Q.P.S.C.
Dukascopy Bank SA
Export-Import Bank of China (The)
  also known as China Exim Bank
Gunma Bank, Ltd. (The)
Habib Bank A.G. Zurich
Iyo Bank, Ltd. (The)
Manulife Bank of Canada
Metropolitan Bank and Trust Company
National Bank of Canada
Nishi-Nippon City Bank, Ltd. (The)
Norinchukin Bank (The)
Oita Bank, Ltd. (The)
P.T. Bank Central Asia
P.T. Bank Rakyat Indonesia (Persero)
Resona Bank, Limited
Shinkin Central Bank
Shoko Chukin Bank, Ltd. (The)
Silicon Valley Bank
Swissquote Bank SA
  also known as:
  Swissquote Bank AG
  Swissquote Bank Inc.
  Swissquote Bank Ltd
Union Bank of Taiwan
VP Bank Ltd
  also known as:
  VP Bank AG
  VP Bank SA
Yamaguchi Bank, Ltd. (The)

Deletion in 2022

Bank of Baroda
JIH SUN INTERNATIONAL Bank, Ltd.

Table A Five-year Financial Summary

(HK$ billion)	2018	2019	2020	2021	**2022**
For the year					
Total income	15.8	267.4	255.3	198.6	**(199.4)**
Total expenditure	97.4	92.2	101.8	122.4	**74.9**
Of which include interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	*74.0*	*62.8*	*81.3*	*109.9*	***48.1***
Surplus/(Deficit)	(79.4)	177.6	150.3	79.6	**(279.3)**
At year end					
Total assets	4,242.0	4,431.2	4,811.0	5,060.3	**4,475.5**
Total liabilities	3,498.9	3,510.6	3,737.5	3,908.5	**3,605.9**
Of which include:					
Certificates of Indebtedness	*485.7*	*516.1*	*556.2*	*592.4*	***606.0***
Balance of the banking system	*78.6*	*67.7*	*457.5*	*377.5*	***96.3***
Exchange Fund Bills and Notes issued	*1,129.6*	*1,152.3*	*1,068.9*	*1,148.6*	***1,200.3***
Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	*1,494.0*	*1,465.9*	*1,224.3*	*1,367.6*	***1,214.2***
Accumulated surplus	742.9	920.3	1,070.8	1,150.0	**871.1**

Table B Major Economic Indicators

		2018	2019	2020	2021	**2022**
I.	**Gross Domestic Product**					
	Real GDP growth (%)	2.8	(1.7)	(6.5)	6.4	**(3.5)**[a]
	Nominal GDP growth (%)	6.6	0.3	(5.9)	7.2	**(1.4)**[a]
	Real growth of major expenditure components of GDP (%)					
	– Private consumption expenditure	5.3	(0.8)	(10.6)	5.6	**(1.0)**[a]
	– Government consumption expenditure	4.2	5.1	7.9	5.9	**8.1** [a]
	– Gross domestic fixed capital formation	1.7	(14.9)	(11.1)	8.3	**(8.5)**[a]
	of which					
	– Building and construction	(0.5)	(10.8)	(9.1)	(0.5)	**4.3** [a]
	– Machinery, equipment and intellectual property products	8.8	(20.8)	(16.0)	15.2	**(16.1)**[a]
	– Exports[b]	3.7	(6.1)	(6.7)	17.0	**(12.6)**[a]
	– Imports[b]	4.5	(7.2)	(6.9)	15.8	**(12.2)**[a]
	GDP at current market prices (US$ billion)	361.7	363.1	344.9	368.9	**361.0** [a]
	Per capita GDP at current market prices (US$)	48,537	48,360	46,110	49,764	**49,138** [a]
II.	**External Trade (HK$ billion)** [b]					
	Trade in goods [c]					
	– Exports of goods	4,453.4	4,255.1	4,198.3	5,236.0	**4,814.1** [a]
	– Imports of goods	4,706.3	4,375.6	4,239.7	5,211.3	**4,859.3** [a]
	– Balance of trade in goods	(253.0)	(120.5)	(41.3)	24.7	**(45.2)**[a]
	Trade in services					
	– Exports of services	886.9	799.1	519.2	615.1	**654.6** [a]
	– Imports of services	639.9	634.2	426.3	480.0	**493.1** [a]
	– Balance of trade in services	246.9	164.9	92.9	135.0	**161.4** [a]
III.	**Fiscal Expenditure and Revenue (HK$ million, fiscal year)**					
	Total government expenditure[d]	531,825	609,330	816,074	693,338	**809,591** [a]
	Total government revenue[e]	599,774	598,755	583,534	722,700	**669,796** [a]
	Consolidated surplus/(deficit)	67,949	(10,575)	(232,541)	29,361	**(139,795)**[a]
	Reserve balance as at end of fiscal year [f]	1,170,882	1,160,308	927,767	957,128	**817,333** [a]
IV.	**Prices (annual change, %)**					
	Consumer Price Index (A)	2.7	3.3	(0.6)	2.9	**2.2**
	Composite Consumer Price Index	2.4	2.9	0.3	1.6	**1.9**
	Trade Unit Value Indices					
	– Domestic exports	1.8	1.1	0.3	4.9	**2.7**
	– Re-exports	2.4	1.1	(0.6)	5.4	**7.9**
	– Imports	2.6	1.3	(0.7)	5.5	**8.1**
	Property Price Indices					
	– Residential flats	13.0	1.5	(0.5)	3.0	**(5.9)**
	– Office premises	13.9	(2.1)	(13.7)	7.2	**(1.3)**[a]
	– Retail premises	5.9	(7.1)	(5.6)	4.7	**(3.7)**[a]
	– Flatted factory premises	14.1	(0.0)	(7.0)	6.4	**0.1** [a]

Table B Major Economic Indicators (continued)

		2018	2019	2020	2021	**2022**
V.	**Labour**					
	Labour force (annual change, %)	1.0	(0.2)	(1.7)	(1.2)	**(2.4)**
	Employment (annual change, %)	1.4	(0.3)	(4.7)	(0.6)	**(1.6)**
	Unemployment rate (annual average, %)	2.8	2.9	5.8	5.2	**4.3**
	Underemployment rate (annual average, %)	1.1	1.1	3.3	2.6	**2.3**
	Employment ('000)	3,884.6	3,871.4	3,690.9	3,670.2	**3,613.2**
VI.	**Money Supply (HK$ billion)**					
	HK$ money supply					
	– M1	1,555.7	1,533.1	1,972.7	2,078.9	**1,708.4**
	– M2 (g)	7,262.5	7,438.8	7,922.1	8,044.0	**8,096.0**
	– M3 (g)	7,284.3	7,454.7	7,937.0	8,057.4	**8,108.5**
	Total money supply					
	– M1	2,421.6	2,484.7	3,231.9	3,490.9	**2,769.3**
	– M2	14,348.1	14,745.9	15,606.6	16,272.6	**16,536.1**
	– M3	14,403.7	14,786.4	15,644.0	16,310.9	**16,568.9**
VII.	**Interest Rates (end of period, %)**					
	Three-month interbank rate (h)	2.33	2.43	0.35	0.26	**4.99**
	Savings deposit	0.13	0.00	0.00	0.00	**0.55**
	One-month time deposit	0.14	0.12	0.02	0.02	**0.23**
	Banks' 'Best lending rate'	5.13	5.00	5.00	5.00	**5.63**
	Banks' 'Composite rate' (i)	0.89	1.09	0.28	0.21	**2.11**
VIII.	**Exchange Rates (end of period)**					
	USD/HKD	7.834	7.787	7.753	7.798	**7.808**
	Trade-weighted Effective Exchange Rate Index (Jan 2020=100)	99.0	100.1	95.3	95.3	**102.0**
IX.	**Foreign Currency Reserve Assets (US$ billion)** (j)	424.6	441.4	491.9	496.9	**424.0** (a)
X.	**Stock Market (end of period figures)**					
	Hang Seng Index	25,846	28,190	27,231	23,398	**19,781**
	Average price/earnings ratio	10.5	13.3	17.6	15.1	**10.3**
	Market capitalisation (HK$ billion)	29,723.2	38,058.3	47,392.2	42,272.8	**35,581.7**

(a) The estimates are preliminary.
(b) Compiled based on the change of ownership principle in recording goods sent abroad for processing and merchanting.
(c) Includes non-monetary gold.
(d) Includes repayment of bonds and notes issued in July 2004.
(e) Includes net proceeds from issuance of green bonds under the Government Green Bond Programme.
(f) Includes changes in provision for loss in investments with the Exchange Fund.
(g) Adjusted to include foreign currency swap deposits.
(h) Refers to three-month Hong Kong Dollar Interest Settlement Rates.
(i) Calculated based on the new local "Interest Rate Risk in the Banking Book" (IRRBB) framework since June 2019. As such, the figures since 2019 are not strictly comparable with those for previous years.
(j) Excludes unsettled forward transactions but includes gold.

Table C Performance Ratios of the Banking Sector[(a)]

	All Authorized Institutions 2018 %	2019 %	2020 %	2021 %	**2022 %**	Retail Banks 2018 %	2019 %	2020 %	2021 %	**2022 %**
Asset Quality [(b)]										
As % of total credit exposures [(c)]										
Total outstanding provisions/impairment allowances	0.49	0.49	0.62	0.60	**0.76**	0.34	0.36	0.51	0.51	**0.69**
Classified [(d)] exposures:										
– Gross	0.39	0.39	0.66	0.66	**0.97**	0.34	0.29	0.57	0.59	**0.95**
– Net of specific provisions/individual impairment allowances	0.19	0.19	0.37	0.38	**0.55**	0.20	0.15	0.34	0.35	**0.56**
– Net of all provisions/impairment allowances	(0.10)	(0.10)	0.04	0.07	**0.21**	(0.00)	(0.07)	0.07	0.08	**0.27**
As % of total loans [(e)]										
Total outstanding provisions/impairment allowances	0.70	0.70	0.87	0.85	**1.10**	0.52	0.56	0.77	0.77	**1.05**
Classified [(d)] loans:										
– Gross	0.55	0.57	0.90	0.89	**1.38**	0.51	0.48	0.82	0.85	**1.41**
– Net of specific provisions/individual impairment allowances	0.26	0.28	0.50	0.50	**0.79**	0.30	0.25	0.45	0.49	**0.82**
– Net of all provisions/impairment allowances	(0.15)	(0.13)	0.03	0.04	**0.29**	(0.02)	(0.08)	0.05	0.07	**0.36**
Overdue > 3 months and rescheduled loans	0.36	0.34	0.57	0.56	**0.85**	0.32	0.32	0.49	0.50	**0.79**
Profitability										
Return on assets (operating profit)	0.97	0.95	0.65	0.62	**0.66**	1.27	1.19	0.77	0.59	**0.67**
Return on assets (post-tax profit)	0.84	0.83	0.58	0.55	**0.55**	1.10	1.05	0.69	0.53	**0.57**
Net interest margin	1.20	1.24	0.97	0.86	**1.10**	1.62	1.63	1.18	0.98	**1.31**
Cost-to-income ratio	45.0	45.6	50.7	55.3	**50.6**	38.7	39.5	47.0	54.7	**48.0**
Loan impairment charges to total assets	0.06	0.09	0.14	0.07	**0.17**	0.05	0.08	0.12	0.08	**0.20**
Liquidity										
Loan to deposit ratio (all currencies)	72.6	75.3	72.3	71.8	**68.5**	60.1	62.3	59.6	60.8	**59.5**
Loan to deposit [(f)] ratio (Hong Kong dollar)	86.9	90.3	83.5	86.7	**88.4**	77.5	81.1	75.9	79.0	**80.1**

	Surveyed Institutions 2018 %	2019 %	2020 %	2021 %	**2022 %**
Asset Quality					
Delinquency ratio of residential mortgage loans	0.02	0.03	0.04	0.04	**0.06**
Credit card receivables					
– Delinquency ratio	0.21	0.25	0.27	0.20	**0.23**
– Charge-off ratio	1.51	1.57	2.18	1.75	**1.49**

	Locally Incorporated Licensed Banks 2018 %	2019 %	2020 %	2021 %	**2022 %**
Profitability					
Operating profit to shareholders' funds	12.9	11.6	7.7	6.0	**7.0**
Post-tax profit to shareholders' funds	11.2	10.2	6.9	5.4	**5.9**
Capital Adequacy					
Equity to assets ratio [(b)]	9.3	9.7	9.3	8.9	**8.7**

	All Locally Incorporated Authorized Institutions 2018 %	2019 %	2020 %	2021 %	**2022 %**
Capital Adequacy [(g)]					
Common Equity Tier 1 capital ratio	16.0	16.5	16.7	16.2	**16.2**
Tier 1 capital ratio	17.9	18.5	18.7	18.2	**18.1**
Total capital ratio	20.3	20.7	20.7	20.2	**20.1**

(a) Figures are related to Hong Kong offices only unless otherwise stated.
(b) Figures are related to Hong Kong offices. For locally incorporated AIs, figures include their overseas branches.
(c) Credit exposures include loans and advances, acceptances and bills of exchange held, investment debt securities issued by others, accrued interest, and commitments and contingent liabilities to or on behalf of non-banks.
(d) Denotes loans or exposures graded as "substandard", "doubtful" or "loss" in the HKMA's Loan Classification System.
(e) Figures are related to Hong Kong offices. For locally incorporated AIs, figures include their overseas branches and major overseas subsidiaries.
(f) Includes swap deposits.
(g) The ratios are on a consolidated basis.

Table D Authorized Institutions: Domicile and Parentage

	2018	2019	2020	2021	**2022**
Licensed Banks					
(i) Incorporated in Hong Kong	22	31	31	31	**31**
(ii) Incorporated outside Hong Kong	130	133	130	129	**124**
Total	152	164	161	160	**155**
Restricted Licence Banks					
(i) Subsidiaries of licensed banks:					
(a) incorporated in Hong Kong	1	1	1	–	**–**
(b) incorporated outside Hong Kong	4	4	4	4	**3**
(ii) Subsidiaries or branches of overseas banks which are not licensed banks in Hong Kong	7	7	7	8	**8**
(iii) Bank related	3	3	3	2	**2**
(iv) Others	3	2	2	2	**2**
Total	18	17	17	16	**15**
Deposit-taking Companies					
(i) Subsidiaries of licensed banks:					
(a) incorporated in Hong Kong	3	3	3	3	**3**
(b) incorporated outside Hong Kong	3	3	3	3	**3**
(ii) Subsidiaries of overseas banks which are not licensed banks in Hong Kong	6	4	3	3	**3**
(iii) Bank related	–	–	–	–	**–**
(iv) Others	4	3	3	3	**3**
Total	16	13	12	12	**12**
All Authorized Institutions	186	194	190	188	**182**
Local Representative Offices	48	43	43	39	**37**

Table E Authorized Institutions: Region/Economy of Beneficial Ownership

Region/Economy	Licensed Banks					Restricted Licence Banks					Deposit-taking Companies				
	2018	2019	2020	2021	**2022**	2018	2019	2020	2021	**2022**	2018	2019	2020	2021	**2022**
Asia & Pacific															
Hong Kong, China	7	9	9	9	**9**	–	–	–	–	**–**	2	1	1	1	**1**
Australia	5	5	5	5	**4**	–	–	–	–	**–**	–	–	–	–	**–**
Mainland China	22	30	32	32	**32**	2	2	2	2	**2**	2	2	2	2	**2**
India	12	12	10	9	**7**	–	–	–	–	**–**	1	1	1	1	**1**
Indonesia	1	1	1	1	**1**	1	1	1	1	**1**	–	–	–	–	**–**
Japan	10	10	10	10	**10**	2	2	2	1	**1**	1	1	–	–	**–**
Malaysia	4	4	4	4	**4**	–	–	–	–	**–**	1	1	1	1	**1**
Pakistan	1	1	1	1	**1**	1	1	1	1	**1**	1	–	–	–	**–**
Philippines	2	2	2	2	**2**	1	1	1	1	**1**	2	2	2	2	**2**
Republic of Korea	5	5	5	6	**6**	1	1	1	2	**2**	4	3	3	3	**3**
Singapore	6	6	6	6	**6**	–	–	–	–	**–**	–	–	–	–	**–**
Taiwan, China	20	20	20	20	**20**	–	–	–	–	**–**	1	1	1	1	**1**
Thailand	1	1	1	1	**1**	2	2	2	2	**2**	–	–	–	–	**–**
Vietnam	–	–	–	–	**–**	–	–	–	–	**–**	1	1	1	1	**1**
Sub-Total	96	106	106	106	**103**	10	10	10	10	**10**	16	13	12	12	**12**
Europe															
Austria	1	1	1	1	**1**	–	–	–	–	**–**	–	–	–	–	**–**
Belgium	1	1	1	1	**1**	1	1	1	1	**1**	–	–	–	–	**–**
France	7	7	7	7	**6**	–	–	–	–	**–**	–	–	–	–	**–**
Germany	3	3	3	3	**3**	–	–	–	–	**–**	–	–	–	–	**–**
Italy	3	3	2	2	**2**	–	–	–	–	**–**	–	–	–	–	**–**
Liechtenstein	1	1	1	1	**1**	–	–	–	–	**–**	–	–	–	–	**–**
Netherlands	3	3	3	3	**3**	–	–	–	–	**–**	–	–	–	–	**–**
Spain	2	2	2	2	**2**	–	–	–	–	**–**	–	–	–	–	**–**
Sweden	2	2	2	1	**1**	–	–	–	–	**–**	–	–	–	–	**–**
Switzerland	6	6	7	7	**6**	–	–	–	–	**–**	–	–	–	–	**–**
United Kingdom	9	9	6	6	**6**	–	–	–	–	**–**	–	–	–	–	**–**
Sub-Total	38	38	35	34	**32**	1	1	1	1	**1**	0	0	0	0	**0**
Middle East															
Iran	1	1	1	1	**1**	–	–	–	–	**–**	–	–	–	–	**–**
Qatar	–	1	1	1	**1**	–	–	–	–	**–**	–	–	–	–	**–**
United Arab Emirates	2	2	2	2	**2**	–	–	–	–	**–**	–	–	–	–	**–**
Sub-Total	3	4	4	4	**4**	0	0	0	0	**0**	0	0	0	0	**0**
North America															
Canada	5	5	5	5	**5**	2	2	2	1	**0**	–	–	–	–	**–**
United States	9	10	10	10	**10**	5	4	4	4	**4**	–	–	–	–	**–**
Sub-Total	14	15	15	15	**15**	7	6	6	5	**4**	0	0	0	0	**0**
Brazil	1	1	1	1	**1**	–	–	–	–	**–**	–	–	–	–	**–**
Grand Total	152	164	161	160	**155**	18	17	17	16	**15**	16	13	12	12	**12**

Table F Presence of World's Largest 500 Banks in Hong Kong

Positions at 31.12.2022	Number of Overseas Banks [b]					Licensed Banks [c]					Restricted Licence Banks [c]					Deposit-Taking Companies [c]					Local Representative Offices				
	2018	2019	2020	2021	**2022**	2018	2019	2020	2021	**2022**	2018	2019	2020	2021	**2022**	2018	2019	2020	2021	**2022**	2018	2019	2020	2021	**2022**
World Ranking [a]																									
1-20	20	20	19	19	**19**	33	33	30	30	**29**	4	4	4	4	**4**	1	1	–	1	**1**	–	–	–	–	**–**
21-50	27	27	28	28	**28**	28	30	30	29	**28**	4	3	3	2	**1**	–	–	1	–	**–**	2	2	2	2	**3**
51-100	30	31	30	31	**30**	24	27	27	28	**29**	2	1	1	1	**1**	3	2	2	2	**2**	8	6	5	5	**3**
101-200	36	37	36	36	**33**	24	25	23	24	**23**	2	3	4	4	**4**	1	1	2	2	**2**	10	10	11	10	**8**
201-500	42	39	35	34	**36**	27	26	20	23	**23**	1	1	1	1	**1**	4	4	2	2	**2**	12	10	12	8	**10**
Sub-total	155	154	148	148	**146**	136	141	130	134	**132**	13	12	13	12	**11**	9	8	7	7	**7**	32	28	30	25	**24**
Others	31	27	30	25	**20**	16	23	31	26	**23**	5	5	4	4	**4**	7	5	5	5	**5**	16	15	13	14	**13**
Total	186	181	178	173	**166**	152	164	161	160	**155**	18	17	17	16	**15**	16	13	12	12	**12**	48	43	43	39	**37**

(a) Top 500 banks/banking groups in the world ranked by total assets. Figures are extracted from The Banker, July 2022 issue.

(b) The sum of the number of licensed banks, restricted licence banks, deposit-taking companies and local representative offices exceeds the number of overseas banks with presence in Hong Kong due to the multiple presence of some of the overseas banks.

(c) Consist of branches and subsidiaries of overseas banks.

Table G Balance Sheet: All Authorized Institutions and Retail Banks

All Authorized Institutions

	2018[d]			2019			2020			2021			**2022**		
(HK$ billion)	HK$	F/CY	Total	HK$	F/CY	Total	HK$	F/CY	Total	HK$	F/CY	Total	**HK$**	**F/CY**	**Total**
Assets															
Loans to customers	5,836	3,886	9,723	6,219	4,157	10,377	6,107	4,392	10,499	6,426	4,471	10,897	**6,602**	**3,968**	**10,571**
– Inside Hong Kong [a]	4,988	1,788	6,776	5,312	1,928	7,240	5,262	2,095	7,357	5,537	2,175	7,712	**5,719**	**1,991**	**7,710**
– Outside Hong Kong [b]	849	2,099	2,947	908	2,229	3,137	845	2,297	3,142	889	2,296	3,184	**884**	**1,977**	**2,861**
Interbank lending	692	5,906	6,598	648	5,128	5,776	528	5,149	5,678	486	5,036	5,522	**516**	**5,134**	**5,649**
– Inside Hong Kong	338	764	1,102	311	604	915	290	590	880	246	584	830	**238**	**510**	**747**
– Outside Hong Kong	354	5,142	5,496	337	4,524	4,861	238	4,560	4,798	240	4,453	4,692	**278**	**4,624**	**4,902**
Negotiable certificates of deposit (NCDs)	168	394	562	146	373	519	171	343	514	123	336	459	**136**	**398**	**534**
Negotiable debt instruments, other than NCDs	1,358	3,441	4,799	1,395	3,690	5,086	1,306	4,076	5,383	1,452	4,279	5,731	**1,598**	**4,080**	**5,678**
Other assets	875	1,487	2,361	1,033	1,672	2,705	1,453	2,338	3,792	1,189	2,569	3,758	**1,287**	**3,310**	**4,597**
Total assets	8,929	15,114	24,043	9,442	15,020	24,462	9,566	16,299	25,865	9,676	16,691	26,367	**10,139**	**16,890**	**27,029**
Liabilities															
Deposits from customers [c]	6,715	6,671	13,386	6,884	6,887	13,772	7,311	7,202	14,514	7,414	7,772	15,186	**7,468**	**7,971**	**15,439**
Interbank borrowing	945	4,849	5,794	959	4,514	5,473	851	4,748	5,599	771	4,688	5,459	**792**	**3,944**	**4,736**
– Inside Hong Kong	517	776	1,293	499	606	1,105	464	605	1,069	373	628	1,002	**398**	**557**	**955**
– Outside Hong Kong	428	4,073	4,501	461	3,908	4,368	387	4,142	4,530	398	4,059	4,457	**394**	**3,387**	**3,781**
Negotiable certificates of deposit	220	595	815	181	623	803	229	655	884	176	597	773	**177**	**619**	**796**
Other liabilities	1,853	2,195	4,048	2,200	2,214	4,414	2,114	2,755	4,869	2,058	2,890	4,948	**2,457**	**3,600**	**6,057**
Total liabilities	9,733	14,310	24,043	10,224	14,238	24,462	10,505	15,359	25,865	10,420	15,947	26,367	**10,894**	**16,134**	**27,029**

Retail banks

	2018[d]			2019			2020			2021			**2022**		
(HK$ billion)	HK$	F/CY	Total	HK$	F/CY	Total	HK$	F/CY	Total	HK$	F/CY	Total	**HK$**	**F/CY**	**Total**
Assets															
Loans to customers	4,600	1,831	6,431	4,988	1,939	6,927	5,005	2,106	7,111	5,282	2,250	7,532	**5,400**	**2,040**	**7,440**
– Inside Hong Kong [a]	4,157	993	5,150	4,456	1,068	5,524	4,457	1,151	5,608	4,711	1,242	5,953	**4,845**	**1,095**	**5,940**
– Outside Hong Kong [b]	443	838	1,281	532	871	1,403	549	955	1,504	572	1,008	1,579	**556**	**945**	**1,500**
Interbank lending	445	2,364	2,809	407	2,039	2,445	316	2,237	2,553	265	2,204	2,469	**325**	**2,267**	**2,592**
– Inside Hong Kong	272	453	725	255	381	636	219	374	593	176	343	519	**195**	**269**	**465**
– Outside Hong Kong	173	1,911	2,084	152	1,657	1,809	97	1,863	1,960	88	1,861	1,950	**130**	**1,997**	**2,127**
Negotiable certificates of deposit (NCDs)	136	123	259	105	117	223	130	124	254	110	136	246	**108**	**133**	**241**
Negotiable debt instruments, other than NCDs	1,048	2,243	3,292	1,106	2,502	3,608	1,082	2,805	3,888	1,188	3,012	4,199	**1,343**	**2,901**	**4,244**
Other assets	722	1,116	1,838	871	1,272	2,143	1,166	1,699	2,865	951	2,088	3,039	**992**	**2,620**	**3,612**
Total assets	6,952	7,677	14,630	7,477	7,870	15,346	7,700	8,971	16,671	7,795	9,689	17,484	**8,168**	**9,961**	**18,129**
Liabilities															
Deposits from customers [c]	5,939	4,754	10,693	6,149	4,972	11,122	6,595	5,329	11,924	6,688	5,709	12,397	**6,741**	**5,754**	**12,495**
Interbank borrowing	354	714	1,068	373	635	1,008	373	857	1,230	323	1,014	1,338	**334**	**746**	**1,079**
– Inside Hong Kong	234	263	497	244	160	404	245	230	475	191	270	461	**210**	**211**	**421**
– Outside Hong Kong	120	451	572	129	475	604	128	626	754	132	744	876	**123**	**535**	**658**
Negotiable certificates of deposit	42	79	121	57	87	144	94	80	174	77	86	164	**92**	**65**	**157**
Other liabilities	1,528	1,220	2,748	1,815	1,257	3,072	1,711	1,632	3,343	1,704	1,881	3,586	**1,995**	**2,403**	**4,397**
Total liabilities	7,862	6,767	14,630	8,395	6,951	15,346	8,774	7,897	16,671	8,793	8,691	17,484	**9,161**	**8,968**	**18,129**

(a) Defined as loans for use in Hong Kong plus trade finance.
(b) Includes "others" (i.e. unallocated).
(c) Hong Kong dollar customer deposits include swap deposits.
(d) The 2018 figures for loans to customers inside/outside Hong Kong have been restated to reflect authorized institutions' reclassification of working capital loans.
Figures may not add up to total because of rounding.

Table H Major Balance Sheet Items by Region/Economy of Beneficial Ownership of Authorized Institutions

(HK$ billion)		Mainland China	Japan	US	Europe	Others	Total
Total Assets	2021	9,498	1,358	1,440	3,559	10,512	26,367
	2022	**9,603**	**1,267**	**1,577**	**3,498**	**11,084**	**27,029**
Deposits from Customers	2021	5,643	266	845	1,884	6,549	15,186
	2022	**5,815**	**331**	**841**	**1,861**	**6,591**	**15,439**
Loans to Customers	2021	4,229	552	370	1,515	4,231	10,897
	2022	**4,328**	**513**	**312**	**1,294**	**4,123**	**10,571**
Loans to Customers	2021	2,893	302	301	886	3,329	7,712
Inside Hong Kong (a)	**2022**	**3,030**	**314**	**252**	**814**	**3,300**	**7,710**
Loans to Customers	2021	1,336	250	69	628	902	3,184
Outside Hong Kong (b)	**2022**	**1,299**	**199**	**60**	**480**	**823**	**2,861**

(a) Defined as loans for use in Hong Kong plus trade finance.
(b) Includes "others" (i.e. unallocated).
Figures may not add up to total because of rounding.

Table I Flow of Funds for All Authorized Institutions and Retail Banks

All Authorized Institutions

Increase/(Decrease) in	2021			**2022**		
(HK$ billion)	HK$	F/CY	Total	**HK$**	**F/CY**	**Total**
Assets						
Loans to customers	319	79	398	**176**	**(503)**	**(326)**
– Inside Hong Kong [(a)]	275	81	355	**181**	**(184)**	**(3)**
– Outside Hong Kong [(b)]	44	(1)	43	**(5)**	**(318)**	**(323)**
Interbank lending	(42)	(113)	(155)	**30**	**97**	**127**
– Inside Hong Kong	(44)	(6)	(50)	**(9)**	**(74)**	**(83)**
– Outside Hong Kong	2	(107)	(105)	**38**	**172**	**210**
All other assets	(167)	426	259	**257**	**604**	**861**
Total assets	110	392	502	**463**	**199**	**662**
Liabilities						
Deposits from customers [(c)]	103	570	673	**53**	**200**	**253**
Interbank borrowing	(80)	(60)	(140)	**21**	**(744)**	**(723)**
– Inside Hong Kong	(91)	23	(68)	**24**	**(71)**	**(47)**
– Outside Hong Kong	11	(83)	(72)	**(3)**	**(673)**	**(676)**
All other liabilities	(109)	78	(31)	**400**	**732**	**1,132**
Total liabilities	(86)	588	502	**475**	**187**	**662**
Net Interbank Borrowing/(Lending)	(38)	53	15	**(9)**	**(841)**	**(850)**
Net Customer Lending/(Borrowing)	216	(490)	(275)	**123**	**(702)**	**(579)**

Retail Banks

Increase/(Decrease) in	2021			**2022**		
(HK$ billion)	HK$	F/CY	Total	**HK$**	**F/CY**	**Total**
Assets						
Loans to customers	277	144	421	**118**	**(210)**	**(92)**
– Inside Hong Kong [(a)]	254	92	345	**134**	**(147)**	**(13)**
– Outside Hong Kong [(b)]	23	52	75	**(16)**	**(63)**	**(79)**
Interbank lending	(51)	(33)	(84)	**60**	**63**	**123**
– Inside Hong Kong	(42)	(31)	(74)	**19**	**(73)**	**(54)**
– Outside Hong Kong	(9)	(2)	(10)	**41**	**136**	**178**
All other assets	(131)	608	477	**195**	**419**	**613**
Total assets	95	719	813	**373**	**272**	**645**
Liabilities						
Deposits from customers [(c)]	93	380	473	**53**	**45**	**98**
Interbank borrowing	(49)	157	108	**10**	**(269)**	**(258)**
– Inside Hong Kong	(53)	39	(14)	**19**	**(59)**	**(40)**
– Outside Hong Kong	4	118	122	**(9)**	**(210)**	**(218)**
All other liabilities	(24)	256	232	**305**	**500**	**805**
Total liabilities	19	794	813	**368**	**277**	**645**
Net Interbank Borrowing/(Lending)	2	190	192	**(50)**	**(332)**	**(381)**
Net Customer Lending/(Borrowing)	184	(237)	(53)	**65**	**(255)**	**(190)**

(a) Defined as loans for use in Hong Kong plus trade finance.
(b) Includes "others" (i.e. unallocated).
(c) Hong Kong dollar customer deposits include swap deposits.
Figures may not add up to total because of rounding.

Table J Loans to and Deposits from Customers by Category of Authorized Institutions

	Loans to Customers				Deposits from Customers [a]			
(HK$ billion)	HK$	F/CY	Total	%	HK$	F/CY	Total	%
2018								
Licensed banks	5,802	3,847	9,650	99	6,695	6,646	13,341	100
Restricted licence banks	22	33	55	1	15	25	40	–
Deposit-taking companies	12	5	18	–	6	1	6	–
Total	5,836	3,886	9,723	100	6,715	6,671	13,386	100
2019								
Licensed banks	6,192	4,118	10,310	99	6,869	6,871	13,740	100
Restricted licence banks	21	34	55	1	9	16	26	–
Deposit-taking companies	7	5	12	–	6	1	6	–
Total	6,219	4,157	10,377	100	6,884	6,887	13,772	100
2020								
Licensed banks	6,084	4,352	10,436	99	7,298	7,183	14,481	100
Restricted licence banks	17	35	52	–	8	19	27	–
Deposit-taking companies	6	5	10	–	5	1	6	–
Total	6,107	4,392	10,499	100	7,311	7,202	14,514	100
2021								
Licensed banks	6,402	4,430	10,832	99	7,401	7,754	15,155	100
Restricted licence banks	18	35	53	–	9	17	26	–
Deposit-taking companies	6	6	12	–	5	–	5	–
Total	6,426	4,471	10,897	100	7,414	7,772	15,186	100
2022								
Licensed banks	**6,578**	**3,927**	**10,505**	**99**	**7,457**	**7,957**	**15,414**	**100**
Restricted licence banks	**19**	**35**	**54**	**1**	**6**	**14**	**20**	**–**
Deposit-taking companies	**5**	**6**	**11**	**–**	**4**	**–**	**5**	**–**
Total	**6,602**	**3,968**	**10,571**	**100**	**7,468**	**7,971**	**15,439**	**100**

(a) Hong Kong dollar customer deposits include swap deposits.

The sign "–" denotes a figure of less than 0.5.

Figures may not add up to total because of rounding.

Table K Loans to Customers inside Hong Kong by Economic Sector

All Authorized Institutions

Sector	2018 [b]		2019		2020		2021		**2022**	
(HK$ billion)	HK$	%	HK$	%	HK$	%	HK$	%	**HK$**	**%**
Hong Kong's visible trade	456	7	453	6	425	6	485	6	**420**	**5**
Manufacturing	300	4	301	4	306	4	313	4	**313**	**4**
Transport and transport equipment	332	5	327	5	350	5	330	4	**292**	**4**
Building, construction and property development, and investment	1,526	23	1,618	22	1,618	22	1,710	22	**1,711**	**22**
Wholesale and retail trade	390	6	376	5	349	5	325	4	**312**	**4**
Financial concerns (other than authorized institutions)	858	13	909	13	918	12	908	12	**923**	**12**
Individuals:										
– to purchase flats in the Home Ownership Scheme, the Private Sector Participation Scheme and the Tenants Purchase Scheme	58	1	78	1	94	1	106	1	**106**	**1**
– to purchase other residential properties	1,340	20	1,466	20	1,580	21	1,735	22	**1,808**	**23**
– other purposes	663	10	779	11	777	11	830	11	**792**	**10**
Others	854	13	932	13	939	13	970	13	**1,033**	**13**
Total [a]	6,776	100	7,240	100	7,357	100	7,712	100	**7,710**	**100**

Retail Banks

Sector	2018 [b]		2019		2020		2021		**2022**	
(HK$ billion)	HK$	%	HK$	%	HK$	%	HK$	%	**HK$**	**%**
Hong Kong's visible trade	315	6	316	6	296	5	336	6	**280**	**5**
Manufacturing	213	4	211	4	206	4	192	3	**201**	**3**
Transport and transport equipment	217	4	211	4	237	4	224	4	**204**	**3**
Building, construction and property development, and investment	1,154	22	1,203	22	1,216	22	1,282	22	**1,290**	**22**
Wholesale and retail trade	260	5	256	5	227	4	220	4	**209**	**4**
Financial concerns (other than authorized institutions)	464	9	513	9	488	9	488	8	**443**	**7**
Individuals:										
– to purchase flats in the Home Ownership Scheme, the Private Sector Participation Scheme and the Tenants Purchase Scheme	58	1	78	1	94	2	106	2	**106**	**2**
– to purchase other residential properties	1,333	26	1,464	27	1,578	28	1,732	29	**1,806**	**30**
– other purposes	532	10	627	11	610	11	665	11	**675**	**11**
Others	604	12	644	12	656	12	706	12	**725**	**12**
Total [a]	5,150	100	5,524	100	5,608	100	5,953	100	**5,940**	**100**

(a) Defined as loans for use in Hong Kong plus trade finance.

(b) The 2018 figures for loans to customers inside Hong Kong by economic sector have been restated to reflect authorized institutions' reclassification of working capital loans.

Figures may not add up to total because of rounding.

Table L Deposits from Customers

(HK$ billion)	All Authorized Institutions				Retail Banks			
	Demand	Savings	Time	Total	Demand	Savings	Time	Total
Hong Kong Dollar [(a)]								
2018	1,093	2,806	2,817	6,715	988	2,757	2,193	5,939
2019	1,036	2,641	3,207	6,884	945	2,594	2,610	6,149
2020	1,432	3,373	2,507	7,311	1,302	3,302	1,991	6,595
2021	1,504	3,577	2,333	7,414	1,352	3,496	1,839	6,688
2022	**1,128**	**2,708**	**3,632**	**7,468**	**1,029**	**2,652**	**3,059**	**6,741**
Foreign currency								
2018	874	2,118	3,678	6,671	559	1,845	2,350	4,754
2019	952	2,295	3,641	6,887	612	2,013	2,347	4,972
2020	1,259	2,967	2,976	7,202	820	2,631	1,877	5,329
2021	1,412	3,251	3,109	7,772	894	2,848	1,968	5,709
2022	**1,061**	**2,696**	**4,215**	**7,971**	**756**	**2,340**	**2,658**	**5,754**
Total								
2018	1,967	4,924	6,495	13,386	1,547	4,602	4,543	10,693
2019	1,987	4,936	6,848	13,772	1,557	4,607	4,958	11,122
2020	2,691	6,340	5,483	14,514	2,122	5,934	3,868	11,924
2021	2,916	6,828	5,443	15,186	2,246	6,344	3,807	12,397
2022	**2,189**	**5,404**	**7,846**	**15,439**	**1,785**	**4,993**	**5,717**	**12,495**

(a) Hong Kong dollar customer deposits include swap deposits.
Figures may not add up to total because of rounding.

Table M Geographical Breakdown of Net External Claims/(Liabilities) of All Authorized Institutions

Region/Economy[a] (HK$ billion)	2021 Net Claims on/(Liabilities to) Banks Outside Hong Kong	2021 Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong	2021 Total Net Claims/ (Liabilities)	**2022 Net Claims on/(Liabilities to) Banks Outside Hong Kong**	**2022 Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong**	**2022 Total Net Claims/ (Liabilities)**
Developed economies	575	1,946	2,521	**1,240**	**2,222**	**3,462**
United States of America	367	741	1,107	**388**	**948**	**1,336**
Japan	(98)	735	637	**44**	**780**	**824**
United Kingdom	126	9	135	**238**	**81**	**319**
Australia	226	132	358	**197**	**105**	**302**
Canada	71	70	142	**168**	**75**	**243**
Luxembourg	49	30	80	**90**	**32**	**122**
France	(21)	45	24	**79**	**41**	**120**
Germany	(40)	31	(9)	**41**	**50**	**91**
Switzerland	25	0	25	**55**	**(2)**	**53**
New Zealand	26	15	42	**28**	**9**	**37**
Ireland	(1)	60	59	**(1)**	**31**	**30**
Netherlands	(67)	49	(18)	**(34)**	**63**	**29**
Sweden	1	23	24	**0**	**17**	**17**
Liechtenstein	11	(0)	11	**18**	**(1)**	**17**
Norway	6	2	8	**4**	**1**	**5**
Belgium	4	0	4	**5**	**(0)**	**5**
Finland	1	1	2	**2**	**1**	**3**
Portugal	1	(1)	0	**1**	**(1)**	**0**
Denmark	1	(0)	0	**1**	**(1)**	**(0)**
Cyprus	(0)	(2)	(2)	**(0)**	**(2)**	**(2)**
Austria	(8)	2	(7)	**(12)**	**1**	**(10)**
Spain	(62)	5	(57)	**(29)**	**(4)**	**(34)**
Italy	(44)	0	(43)	**(43)**	**(1)**	**(44)**
Others	(0)	(0)	(0)	**0**	**(0)**	**(0)**
Offshore centres	(87)	137	49	**55**	**5**	**60**
West Indies UK	1	186	187	**0**	**105**	**105**
Cayman Islands	(10)	69	58	**(3)**	**61**	**58**
Bahrain	7	3	10	**6**	**3**	**9**
Jersey	(0)	11	11	**(0)**	**7**	**7**
Mauritius	(4)	3	(0)	**2**	**2**	**4**
Panama	0	2	3	**2**	**1**	**3**
Bermuda	0	(1)	(1)	**0**	**2**	**2**
Guernsey	(0)	1	1	**(0)**	**1**	**1**
Bahamas	0	5	5	**(0)**	**1**	**1**
Barbados	0	(1)	(1)	**0**	**(2)**	**(2)**
Macao, China	(91)	(21)	(111)	**35**	**(39)**	**(4)**
Samoa	0	(23)	(23)	**0**	**(27)**	**(27)**
Singapore	9	(95)	(87)	**13**	**(109)**	**(96)**
Others	0	(0)	(0)	**0**	**(0)**	**(0)**
Developing Europe	(6)	(24)	(30)	**(7)**	**(5)**	**(12)**
Czech Republic	0	1	1	**0**	**1**	**1**
Hungary	(0)	(1)	(1)	**(0)**	**1**	**1**
Turkey	3	(1)	2	**2**	**(1)**	**1**
Russia	(5)	(25)	(30)	**(9)**	**(5)**	**(14)**
Others	(4)	(0)	(4)	**(0)**	**(1)**	**(1)**

Table M Geographical Breakdown of Net External Claims/(Liabilities) of All Authorized Institutions (continued)

Region/Economy[a] (HK$ billion)	2021 Net Claims on/(Liabilities to) Banks Outside Hong Kong	2021 Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong	2021 Total Net Claims/ (Liabilities)	**2022 Net Claims on/(Liabilities to) Banks Outside Hong Kong**	**2022 Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong**	**2022 Total Net Claims/ (Liabilities)**
Developing Latin America and Caribbean	16	(5)	11	**15**	**(5)**	**9**
Chile	1	8	8	**2**	**10**	**12**
Venezuela	13	(0)	13	**12**	**(0)**	**12**
Brazil	3	3	6	**3**	**4**	**7**
Peru	0	5	5	**0**	**2**	**2**
Jamaica	0	(0)	(0)	**0**	**1**	**1**
Honduras	0	0	0	**0**	**1**	**1**
Colombia	0	0	0	**0**	**(1)**	**(1)**
Argentina	(1)	0	(0)	**(1)**	**0**	**(1)**
Mexico	0	(15)	(15)	**0**	**(18)**	**(17)**
Others	(1)	(6)	(7)	**(1)**	**(5)**	**(6)**
Developing Africa and Middle East	154	30	184	**142**	**40**	**182**
United Arab Emirates	108	38	146	**89**	**37**	**126**
Qatar	63	20	83	**71**	**19**	**90**
Saudi Arabia	3	15	18	**4**	**35**	**39**
Egypt	4	1	5	**4**	**2**	**5**
Kenya	1	0	1	**2**	**0**	**3**
Côte d'Ivoire	0	(0)	(0)	**0**	**3**	**3**
South Africa	2	(0)	2	**2**	**(1)**	**1**
Israel	1	1	2	**0**	**(1)**	**(0)**
Algeria	(0)	(0)	(1)	**(3)**	**(0)**	**(3)**
Kuwait	(2)	(3)	(6)	**(7)**	**(7)**	**(14)**
Nigeria	(19)	(10)	(29)	**(12)**	**(3)**	**(15)**
Others	(5)	(29)	(35)	**(7)**	**(45)**	**(52)**
Developing Asia and Pacific	298	(300)	(2)	**180**	**(480)**	**(300)**
Republic of Korea	270	91	360	**231**	**89**	**320**
Malaysia	57	(2)	55	**53**	**(8)**	**45**
India	(65)	69	4	**(20)**	**64**	**45**
Thailand	89	(9)	80	**67**	**(24)**	**43**
Indonesia	7	14	20	**8**	**15**	**22**
Cambodia	4	8	13	**10**	**7**	**17**
Bangladesh	21	(3)	18	**12**	**1**	**13**
Sri Lanka	(1)	3	3	**(1)**	**3**	**2**
Mongolia	(0)	3	3	**(0)**	**2**	**1**
Myanmar	(1)	1	0	**(1)**	**0**	**(1)**
Fiji	0	(0)	(0)	**(1)**	**(0)**	**(1)**
Laos	(1)	0	(1)	**(1)**	**0**	**(1)**
Brunei Darussalam	1	(0)	1	**(1)**	**(0)**	**(1)**
Pakistan	(0)	(1)	(2)	**(0)**	**(1)**	**(1)**
Maldives	(2)	(0)	(2)	**(1)**	**(0)**	**(1)**
Nepal	(6)	(1)	(7)	**(4)**	**(2)**	**(5)**
Vietnam	(26)	22	(4)	**(29)**	**23**	**(6)**
Kazakhstan	1	(5)	(4)	**1**	**(8)**	**(7)**
Philippines	(15)	(13)	(28)	**(7)**	**(14)**	**(21)**
Mainland China	(85)	(188)	(273)	**(127)**	**(258)**	**(385)**
Taiwan, China	57	(301)	(244)	**(5)**	**(375)**	**(379)**
Others	(6)	12	6	**(4)**	**4**	**0**
International organisations	0	136	136	**0**	**150**	**150**
Overall total	949	1,919	2,868	**1,625**	**1,925**	**3,551**

(a) Regions/economies are classified according to the Bank for International Settlements' (BIS) Guidelines for Reporting the BIS International Banking Statistics issued in March 2013.

Figures may not add up to total because of rounding.

Abbreviations

AIs	–	Authorized institutions
AML/CFT	–	Anti-money laundering and counter-financing of terrorism
AMLab	–	Anti-Money Laundering Regtech Lab
AoF	–	Hong Kong Academy of Finance
bankCBCM	–	Cross-Border Crisis Management Group for banks
Basel Committee	–	Basel Committee on Banking Supervision
BCR	–	Banking (Capital) Rules
BIS	–	Bank for International Settlements
BP	–	Backing Portfolio
CBDC	–	Central Bank Digital Currency
CCP Expanded Group	–	Expanded Group on alternative financial resources for the resolution of central counterparties
CDD	–	Customer due diligence
CDI	–	Commercial Data Interchange
CHATS	–	Clearing House Automated Transfer System
CLS	–	Continuous Linked Settlement
CMGs	–	Crisis Management Groups
CMU	–	Central Moneymarkets Unit
COVID-19	–	Coronavirus disease 2019
Cross-boundary WMC	–	Cross-boundary Wealth Management Connect
CSDs	–	Central securities depositories
CSSs	–	Clearing and settlement systems
CUs	–	Convertibility Undertakings
DCMM	–	Dual Counter Market Making
D-SIBs	–	Domestic systemically important banks
DTC Association	–	Hong Kong Association of Restricted Licence Banks and Deposit-taking Companies
EFAC	–	Exchange Fund Advisory Committee
EFBNs	–	Exchange Fund Bills and Notes
EFIO	–	Exchange Fund Investment Office
EMEAP	–	Executives' Meeting of East Asia-Pacific Central Banks
ESG	–	Environmental, social and governance
FATF	–	Financial Action Task Force
FFO	–	Fintech Facilitation Office
fintech	–	Financial technology
FIRO	–	Financial Institutions (Resolution) Ordinance
FMIs	–	Financial market infrastructures
FPS	–	Faster Payment System
FS	–	Financial Secretary
FSB	–	Financial Stability Board
G20	–	Group of Twenty
GBA	–	Guangdong–Hong Kong–Macao Greater Bay Area
GDP	–	Gross domestic product
G-SIB	–	Global systemically important bank
GSC	–	Governance Sub-Committee
HIBOR	–	Hong Kong Interbank Offered Rate
HKAB	–	Hong Kong Association of Banks
HKEX	–	Hong Kong Exchanges and Clearing Limited
HKMA	–	Hong Kong Monetary Authority
HKMC	–	Hong Kong Mortgage Corporation Limited
HKMCI	–	HKMC Insurance Limited
HKSAR	–	Hong Kong Special Administrative Region
HKTR	–	Hong Kong Trade Repository
IA	–	Insurance Authority
IOSCO	–	International Organization of Securities Commissions
IP	–	Investment Portfolio
LAC	–	Loss-absorbing capacity
LERS	–	Linked Exchange Rate System
LIBOR	–	London Interbank Offered Rate
LTGP	–	Long-Term Growth Portfolio
MA	–	Monetary Authority
mBridge	–	Multiple Central Bank Digital Currency Bridge
MPF	–	Mandatory provident fund
OECD	–	Organisation for Economic Co-operation and Development
Open API	–	Open Application Programming Interface
OTC	–	Over-the-counter
PBoC	–	People's Bank of China
PSSVFO	–	Payment Systems and Stored Value Facilities Ordinance
Regtech	–	Regulatory technology
ReSG	–	Resolution Steering Group
RMB	–	Renminbi
RPSs	–	Retail payment systems
RTGS	–	Real Time Gross Settlement
SEACEN	–	South East Asian Central Banks
SFC	–	Securities and Futures Commission
SFO	–	Securities and Futures Ordinance
SGR	–	Study Group on Resolution
SME	–	Small and medium-sized enterprise
SPM	–	Supervisory Policy Manual
SVF	–	Stored value facility
TLAC	–	Total loss-absorbing capacity
TSPs	–	Third-party service providers
uTLAC	–	Unallocated total loss-absorbing capacity
WGFM	–	Working Group on Financial Markets

Reference Resources

The HKMA *Annual Report* is usually published in April each year. A number of other HKMA publications provide explanatory and background information on the HKMA's policies and functions. These include:

HKMA Sustainability Report (online publication)
(usually published in April each year)

HKMA Quarterly Bulletin (online publication)
(published in March, June, September and December each year)

Monthly Statistical Bulletin (online publication)
(published in two batches on the third and sixth business days of each month)

Most HKMA publications are available for downloading free of charge from the HKMA website (www.hkma.gov.hk).

The main texts of the regular briefings by the HKMA to the Legislative Council Panel on Financial Affairs are available online.

The HKMA website contains detailed and extensive information on the whole range of the HKMA's work. This information includes press releases, statistics, speeches, guidelines and circulars, research reports, and features on topical issues.

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