



HONG KONG MONETARY AUTHORITY
香港金融管理局



2021 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 policy objectives are:

- ◆ to maintain currency stability within the framework of the Linked Exchange Rate System;
- ◆ to promote the stability and integrity of the financial system, including the banking system;
- ◆ to help maintain Hong Kong's status as an international financial centre, including the maintenance and development of Hong Kong's financial infrastructure; and
- ◆ to manage 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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The HKMA Information Centre is located at 55/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong and is open from 10:00 a.m. to 6:00 p.m. Monday to Friday and 10:00 a.m. to 1:00 p.m. on 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.

The HKMA's bilingual website (www.hkma.gov.hk) provides comprehensive information about the HKMA including its main publications and many other materials.

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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 2021 submitted by the Monetary Authority to the Financial Secretary in accordance with section 9 of the Banking Ordinance.

The full text of this Report is available on the HKMA website.



Chief Executive's Statement



The year 2021 was a year of concurrent consolidation and development.

In 2021, the pandemic entered its second year unabated: global supply chains were disrupted, inflation pressures were on the rise, risk of premature tightening of global financial conditions increased. Adding to the unpredictability were the emergence of mutant variants of COVID-19 and the intensification of geopolitical tensions. Despite such a macro environment filled with uncertainties, we continued to safeguard monetary and financial stability and maintain operational resilience.

2021 also brought hope for recovery with the successful rollout of COVID-19 vaccines together with the accommodative monetary and fiscal policies introduced in multiple economies. The global economy began to recover from the severe contraction in 2020. Locally, after having endured economic contraction in 2019 and 2020, the Hong Kong economy grew by 6.3% in 2021, thanks to the rollout of the vaccination programme and the Government's pandemic relief measures which have lent crucial support to our economic recovery.

With financial and monetary stability maintained, as well as a steady macro environment, 2021 gave us some room to pursue more development work. We seized the opportunity and pressed ahead with developmental initiatives that will help our financial sector remain highly competitive. Significant progress has been made across our three strategic priorities, namely fintech, green finance and Mainland market opportunities arising from Hong Kong's gateway role.

As we entered 2022, the global environment took a turn for the worse. But as the saying goes, when the going gets tough, the tough get going. We will continue to be proactive and pursue our developmental goals and priorities to be better prepared for the next challenge and to cement our status as an international financial centre. We will also remain steadfast in our commitment to ensure the soundness of Hong Kong monetary and financial systems, as we have risen to the many challenges time and again as in the past.

Chief Executive's Statement

Monetary and financial stability: foundation of an international financial centre

Since its establishment in 1983, the Linked Exchange Rate System (LERS) has been a strong anchor of Hong Kong's financial system and has helped Hong Kong withstand numerous shocks and challenges. Despite the lingering uncertainties surrounding the COVID-19 pandemic and market concerns about the pace of US monetary tightening, the Hong Kong dollar exchange and money markets continued to function in an orderly manner throughout the year, reflecting the robustness of the LERS.

This confidence in our systems did not happen overnight, but is based on the solid foundation which has been built up over the years. In its *2021 External Sector Report*, the International Monetary Fund once again reiterated that the credibility of the LERS has been assured by a transparent set of rules, ample fiscal and foreign reserves, strong financial regulation and supervision, a flexible economy, and a prudent fiscal framework.

The confidence is also a result of our efforts in public and market engagement, as well as effective surveillance. On the latter, we have leveraged technology and data analytics to strengthen our capability for more timely and comprehensive analysis on financial stability and macroprudential surveillance.

The robustness of the banking system is of paramount importance to financial stability in Hong Kong. Two years into the COVID-19 pandemic, our banks remained resilient with liquidity positions and capitalisation faring very well by international standards. As at end-2021, the capital adequacy ratio of local banks stood at 20.2%, well above the minimum requirement of 8%, while the average Liquidity Coverage Ratio of large banks was 151.9% in the fourth quarter of 2021, also well above the statutory minimum requirement of 100%. Despite a challenging credit landscape amid the pandemic, the asset quality of the banking sector remained largely stable during the year. The classified loan ratio of the industry was 0.88% at the end of 2021, down from 0.90% at the end of 2020, well below the long-run historical average of 1.8% since 2000.

Banking sector: a pillar of support to the economy

As always, the banking sector is an important pillar of support to economic activity. This is ever more crucial in the face of economic fallout from the COVID-19 outbreak. In the past year, a main challenge was to strike a balance between managing credit risk in the banking sector and maintaining the sector's support for the real economy. With our supervisory work over the years, banks continued to manage credit risks effectively. At the same time, we worked closely with banks to provide the much needed relief to corporate and personal customers through the Pre-approved Principal Payment Holiday Scheme (PPPHS) and other relief measures. The PPPHS, launched together with the Banking Sector Small and Medium-sized Enterprise (SME) Lending Coordination Mechanism in 2020 allowing eligible corporate customers to defer loan principal payments by six months on a pre-approval basis, was again further extended twice during 2021 until April 2022 recognising that some economic sectors were still hard-pressed by the lingering pandemic and were in need of continued credit relief. Subsequently, in light of a resurgence of local coronavirus infections, in February 2022, the PPPHS was further extended until the end of October 2022. It is encouraging to see that the banking sector has joined forces with the HKMA to help relieve cash-flow pressures on corporate and individual borrowers, even whilst the sector itself is experiencing its own difficult operating conditions due to the outbreak of the pandemic.

Apart from the challenging credit landscape, the pandemic also brought about a more difficult operating environment and a digital landscape with escalating cyber threat. We have stepped up our efforts to enhance operational and cyber resilience of the banking sector, as well as consumer and investor protection amid increasing digitalisation and a surge in phishing scams. In particular, the Code of Banking Practice was revised to enhance consumer protection in digital financial services.

Chief Executive's Statement

Besides supervisory work, we are dedicated to promoting financial inclusion and customer-centric culture in the banking sector. Enhancing accessibility to banking services by customers in need has been one of our priority areas and we have been working closely with the industry to develop industry guidelines. Further to the guidance on barrier-free banking services and provision of banking services for persons with intellectual disabilities, the industry, with the support of the HKMA, published in December 2021 a guideline to set out the principles and good practices for the banking industry in providing banking services to persons with dementia and customers in need.

To support the continued development of the banking sector in the future where the new growth opportunities and challenges require a new set of skills from the workforce, the HKMA has formulated a holistic talent development strategy — “Connecting Talent to the Future” — to groom future talent and upskill existing practitioners in a more systematic and targeted manner. Our new strategy is built on three “connect” directions: connecting students to the banking industry, connecting practitioners to the future of banking, and connecting the key stakeholders together to enhance collaboration in implementing the strategy. We have launched a series of outreach and promotional campaigns to attract more students to enter the banking industry. To better prepare university students to be “future ready”, we have launched the Future Banking Bridging Programme jointly with the Hong Kong Institute of Bankers, which comprises a series of courses that cover practical banking knowledge and useful soft skills that are highly in demand in the banking industry. For the existing banking practitioners, we have been working closely with the industry on developing opportunities for upskilling through providing more in-demand training programmes. In December 2021, the new Fintech module under the Enhanced Competency Framework for banking practitioners was launched.

Financial talent is crucial to the future development of Hong Kong as an international financial centre. We will work hand in hand with all stakeholders with a view to strengthening the talent pool for the further development of the industry.

International financial centre: strong position underpinned by an unparalleled access to opportunities

The competitiveness of Hong Kong as an international financial centre is underpinned by the unparalleled access to opportunities it offers. There is general consensus that global fintech adoption, opening-up of Mainland’s financial markets, and the mainstreaming of green and sustainable finance present huge opportunities for the future development of Hong Kong’s financial sector. At the HKMA, we have dedicated substantial efforts in leveraging Hong Kong’s unique edge to capture these opportunities. Let me talk about the fintech and Mainland opportunities first.

Comprehensive adoption of fintech

The pandemic has clearly demonstrated the power of fintech and permanently changed customers’ behaviour towards financial services. To make sure we continue to stay at the forefront of the global fintech scene and are ready to tap all of the potential of fintech, we must build an ecosystem where the value of fintech is experienced across all levels and by all groups of people.

This vision has driven us to formulate a new strategy, “Fintech 2025”, which was unveiled in June 2021. As its name suggests, it aspires to help the financial sector adopt technology comprehensively by 2025. The strategy comprises five focus areas which cover the required elements to achieve a successful ecosystem, and also the right factors for the ecosystem to grow further in a virtuous cycle. The first two parts of the strategy, namely “all banks go fintech” and “future-proofing Hong Kong for Central Bank Digital Currencies (CBDCs)” mainly sought to create more demand for fintech adoption. The other parts of the strategy relate to data, infrastructure, talent and funding, which are vital to the growth of the ecosystem.

Chief Executive's Statement

Under this strategy, a number of new initiatives were introduced, such as the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) fintech pilot trial facility which allows financial institutions and technology firms to conduct pilot trials and obtain early feedback from regulators and users on their cross-boundary fintech initiatives, and the pilot launch of the Commercial Data Interchange which leverages the use of alternative data to facilitate SME financing. We have also stepped up research on the application of wholesale CBDC to cross-border payments, and explored the prospect of e-HKD, which will increase Hong Kong's readiness in terms of adopting CBDCs and in turn future-proof our city's financial infrastructure in the decades ahead.

While we capitalise on the new opportunities presented by technological advancement, we also continue to build on our existing achievements as well as watch out for new risks that may arise. For example, the Faster Payment System (FPS) introduced in 2018 has grown rapidly over the years, with the number of registrations reaching 9.6 million at the end of 2021, up 40% year on year. The average daily turnover also increased 90% from 2020, reaching about 673,000 real-time transactions in 2021. Meanwhile, in view of the rapid development of crypto-assets particularly payment-related stablecoins, we have issued a discussion paper earlier this year to invite market feedback on the development of an appropriate regulatory framework.

Our new, forward-thinking strategy will set the scene for a healthy growth of the fintech ecosystem. As the banking sector increasingly adopts fintech to capture the opportunities it offers, this will ultimately benefit both financial institutions and Hong Kong people, while strengthening Hong Kong's competitiveness as an international financial centre.

Hong Kong as the dominant gateway to the Mainland

Hong Kong has always played a strategic role in linking the Mainland market with international financial markets, providing international investors with a familiar regime and platform to conduct various kinds of financial, investment and

wealth management activities. The National 14th Five-Year Plan strengthens Hong Kong's position as an international financial centre, a global offshore renminbi business hub, as well as asset management and risk management centres. This together with global economic trends has reinforced our conviction that Hong Kong should continue to enhance its unique value as a bridge connecting the Mainland and international markets.

In 2021, we reached a milestone in enhancing connectivity, adding two new members to our family of Connect schemes, namely the Cross-boundary Wealth Management Connect (Cross-boundary WMC) Scheme in the GBA, and Southbound Trading under Bond Connect, essentially completing the two-way loop of mutual access in a wide spectrum of financial markets including equities, debts and wealth management. The launch of the two schemes will bring new opportunities for Hong Kong in various aspects. By meeting the increasing diversification needs of Mainland investors, the two schemes will enlarge the customer base of our bond market and wealth management industry. I am pleased to see that these two schemes have been operating smoothly. The HKMA will continue to engage the Mainland authorities to further enhance these schemes over time.

As a global offshore renminbi business hub, 2021 was also a year of stellar performance with offshore renminbi businesses registering solid growth across bank deposits, trade settlement, payments and bond issuance. Just to quote a few examples. At the end of 2021, renminbi deposits grew by 25% to RMB944.7 billion compared to 2020, partly benefitting from the strong growth in the turnover of the Stock and Bond Connect schemes. As for the amount of offshore renminbi bonds issued in Hong Kong, it recorded an impressive year-on-year growth of 87%, reaching RMB109.6 billion. In particular, the Shenzhen Municipal People's Government issued RMB5 billion offshore renminbi bonds in Hong Kong in October. This marks the first time a Mainland municipal government has issued renminbi bonds outside the Mainland, and sets a precedent for other Mainland local governments to use Hong Kong as a fundraising platform. The Northbound Bond Connect, which

Chief Executive's Statement

began trading in July 2017, is getting increasingly popular among foreign investors seeking to participate in the Mainland onshore bond market. Since then, daily turnover saw a 17-fold increase to RMB26 billion and currently, more than half of international investors' turnover in onshore bonds is traded through this Connect scheme. I could go on further but suffice it to say, all these figures point to the fact that Hong Kong continues to maintain a firm foothold as the global hub for offshore renminbi business.

Exchange Fund: investing prudently for long-term return

In 2021, the global financial markets embarked on the track to recovery while market volatility heightened. The Exchange Fund recorded an investment income of HK\$191.9 billion, representing an investment return of 4.1%. Bearing in mind our duty to preserve the long-term purchasing power of the Exchange Fund, we have also been diversifying our investments to strive for higher returns in the long run. In 2021, our Long-term Growth Portfolio, which invests in private equity and real estate, has continued to do well, achieving an annualised internal rate of return of 15.4% since inception.

Looking ahead, the global investment environment will continue to be volatile. Risks on the radar include rising inflation pressure, the path of monetary normalisation, lingering concerns over new virus variants and geopolitical tensions. We will remain flexible, implement defensive measures as appropriate, and maintain a high degree of liquidity to buffer against any adverse economic scenarios. As always, we will adhere to the principle of "capital preservation first while maintaining long-term growth" in managing the Exchange Fund, and continue to invest prudently for the people of Hong Kong.

Sustainability: shaping a greener financial system and a more sustainable future

Climate change is one of the most pressing challenges facing the world today. To the financial sector, climate change is both a source of risk and opportunity. Hong Kong can leverage on, and in turn strengthen, its role as an international financial centre in supporting Hong Kong's 2050 carbon neutrality goal and mobilising capital towards sustainable activities.

For some time now, the HKMA has been prioritising its efforts in strengthening Hong Kong's financial system to support a greener and more sustainable future. Hong Kong is the first Asian jurisdiction that has committed to specifically aligning disclosure requirements with recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) by 2025 across relevant sectors. In 2021, we have also issued a statement to support the Central Banks and Supervisors Network for Greening the Financial System (NGFS) Glasgow Declaration, reaffirming our commitment to delivering on the NGFS recommendations in taking the necessary measures to foster a greener financial system.

This year, we have opened a new chapter in our sustainability journey. And I also mean it literally — we are adding a new chapter in our *Annual Report 2021*, as our inaugural sustainability report which sets out our strategy on sustainability and how the HKMA embeds sustainability considerations across its key roles and functions, whether as a banking supervisor, a market facilitator, a responsible investor, or as an organisation. In this new chapter, you will read about the notable advancements and enhanced disclosures we have made in these key areas.

Chief Executive's Statement

First, as a banking supervisor, to strengthen resilience of the banking system against climate risks, we have formulated a regulatory framework setting out supervisory requirements for banks to manage and disclose climate risks. The pilot exercise on climate risk stress test with 27 participating banks, which concluded in 2021, has confirmed the resilience of Hong Kong's banking sector even in the face of extreme climate-related shocks, and helped banks enhance their capabilities for measuring and assessing climate risks.

Secondly, on the market development front, we are focusing our efforts in enhancing Hong Kong's role as a green and sustainable finance hub in the region, including the GBA. Significant progress was achieved in 2021, with the establishment of the world's first government Global Medium Term Note Programme dedicated to green bond issuances, which issued close to US\$6.5 billion equivalent of institutional green bonds in multiple currencies and tenors, as well as the launch of the Centre for Green and Sustainable Finance which co-ordinates cross-sectoral efforts in capacity building and data. In 2021, Hong Kong witnessed a fourfold increase in green and sustainable debt instruments issuance, totalling US\$57 billion.

Thirdly, as a responsible investor, the HKMA makes its inaugural disclosures on climate scenario analysis and carbon footprint metrics of the Exchange Fund's portfolios, aligning with recommendations of the TCFD. The weighted average carbon intensity of the public equities portfolios as at the end of 2020 was 128 tCO₂e/US\$ million revenue, representing an overall 42% reduction compared to the 2017 level. This sharp reduction is testament to our determination in seeking climate friendlier investments.

Finally, we at the HKMA also aim to be a responsible and sustainable organisation. We have established the Corporate Social Responsibility & Sustainability Committee, which I chair, to steer our sustainability strategies covering the environment, our people and social responsibility. I am pleased to share with you that, in terms of reducing carbon footprint of our daily operations, the HKMA has as a start established its carbon profile and made corresponding

disclosures. In 2021, we have achieved double-digit reduction across our greenhouse gas emissions, total paper consumption, and non-hazardous waste generated, compared with the 2017 level. We also strive to promote greener solutions in the broader community. For example, our online platform for banks' submission of regular reports, the use of FPS as an alternative to cash and to give out electronic lai sees, and Coin Carts, are all successful in helping to minimise resource consumption while enhancing operational efficiency.

Serving Hong Kong with professionalism and dedication

The year 2021 provided a window for us to refocus priorities and capture opportunities to strengthen the resilience and further the development of the financial system. Although the global environment has deteriorated quite dramatically in the first few months of 2022, our financial system is traversing this rougher terrain on a stronger footing. We will continue to stay alert to emerging risks and respond nimbly. We have the capability, resources and commitment to safeguard monetary and financial stability. We will also continue to seize opportunities to bolster Hong Kong's status as an international financial centre.

The HKMA is committed to delivering the above objectives and to serving Hong Kong and its people with integrity, professionalism and collaboration. There may be obstacles and challenges ahead but my colleagues and I, as a team, will be ready to tackle them. Some say the best view comes after the hardest climb. I agree and am confident that Hong Kong's financial system will continue to grow in strength and vibrancy.



Eddie Yue
Chief Executive

Highlights of 2021

Economic and Financial Environment



In 2021, the Hong Kong economy resumes positive growth on the back of strong merchandise exports, reviving domestic demand and a boost from the Government's supportive policy measures. The labour market also improves, while inflation remains moderate albeit having edged up.

The Hong Kong banking sector remains stable with robust capital and liquidity positions. Asset quality stays at a healthy level by both historical and international standards.

Monetary Stability



The Hong Kong dollar markets continue to function in a smooth and orderly manner, despite lingering uncertainties surrounding the COVID-19 pandemic and market concerns about the pace of US monetary tightening. The Linked Exchange Rate System continues to work well.

Reserves Management



With global financial markets having embarked on a recovery path in 2021, the Exchange Fund records an investment income of HK\$191.9 billion, representing an investment return of 4.1%.

The HKMA continues its effort in supporting responsible investments and asset diversification. The Long-Term Growth Portfolio records an annualised internal rate of return of 15.4% since its inception in 2009.

Banking Stability



The HKMA remains focused on the supervision of banks' risk management. In view of escalating cyber threats and accelerating digitalisation, the HKMA has stepped up supervision of banks' operational and cyber resilience. The Code of Banking Practice has also been revised to enhance consumer protection in digital financial services.

Kong–Macao Greater Bay Area is launched smoothly. The HKMA provides guidance to banks on distributing investment and insurance products through non-face-to-face channels in a way that is customer-friendly while according protection.

On anti-money laundering and counter-financing of terrorism (AML/CFT), the HKMA's priority has been to further strengthen banks' ability to prevent and detect illicit fund flows associated with increased online financial crimes during the pandemic. The HKMA has also scaled up information sharing via public-private partnerships, while supporting remote customer on-boarding and encouraging adoption of other technologies including network analytics through the launch of the first AML Regtech Lab.

Further efforts are made in the area of soft infrastructure, including on bank culture and talent development fronts.

Good progress is achieved in implementing international supervisory standards locally, including those on capital adequacy and disclosure. The HKMA also advances its work in establishing resolution standards, undertaking resolution planning and developing resolution execution capability to ensure a credible resolution regime for banks.

Highlights of 2021

International Financial Centre



The HKMA unveils its "Fintech 2025" strategy to promote wide adoption of fintech by the financial sector and strengthen Hong Kong's position as a fintech hub in Asia. On the Faster Payment System, its registrations and turnover have grown significantly and the usage continues to expand.

On enhancing connectivity, the Cross-boundary WMC and Southbound Trading under Bond Connect are launched, further consolidating Hong Kong's role as an offshore renminbi business hub.

Notable efforts are also devoted to creating new business opportunities to strengthen the competitiveness of Hong Kong's financial platform, including in areas of bond issuance, asset and wealth management, corporate treasury centres, as well as green and sustainable finance.

To promote Hong Kong's financial services, the HKMA steps up market outreach to various stakeholders to keep them informed about the resilience of Hong Kong's financial system and the prospects it presents. The Hong Kong Academy of Finance also launches a new Financial Leaders Programme designed to inspire Hong Kong's future financial leaders.

Corporate Functions



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

Sustainability



The HKMA is committed to strengthening Hong Kong's financial system to support a greener and more sustainable future, driving actions to support the Government's climate goal and contributing to the global agenda. This year, the HKMA publishes its first sustainability report as an integral part of its *Annual Report 2021*, setting out how it embeds sustainability considerations across its main functions and in running its operations.

As a banking supervisor, the HKMA has formulated a regulatory framework setting out supervisory requirements for banks to manage and disclose climate risks, shared sound practices supporting transition to carbon neutrality, and undertaken a pilot exercise on climate risk stress test.

On an ongoing basis, the HKMA takes into account climate change in monitoring financial stability risks through various means including empirical analyses that assess the implications of climate change for the financial system.

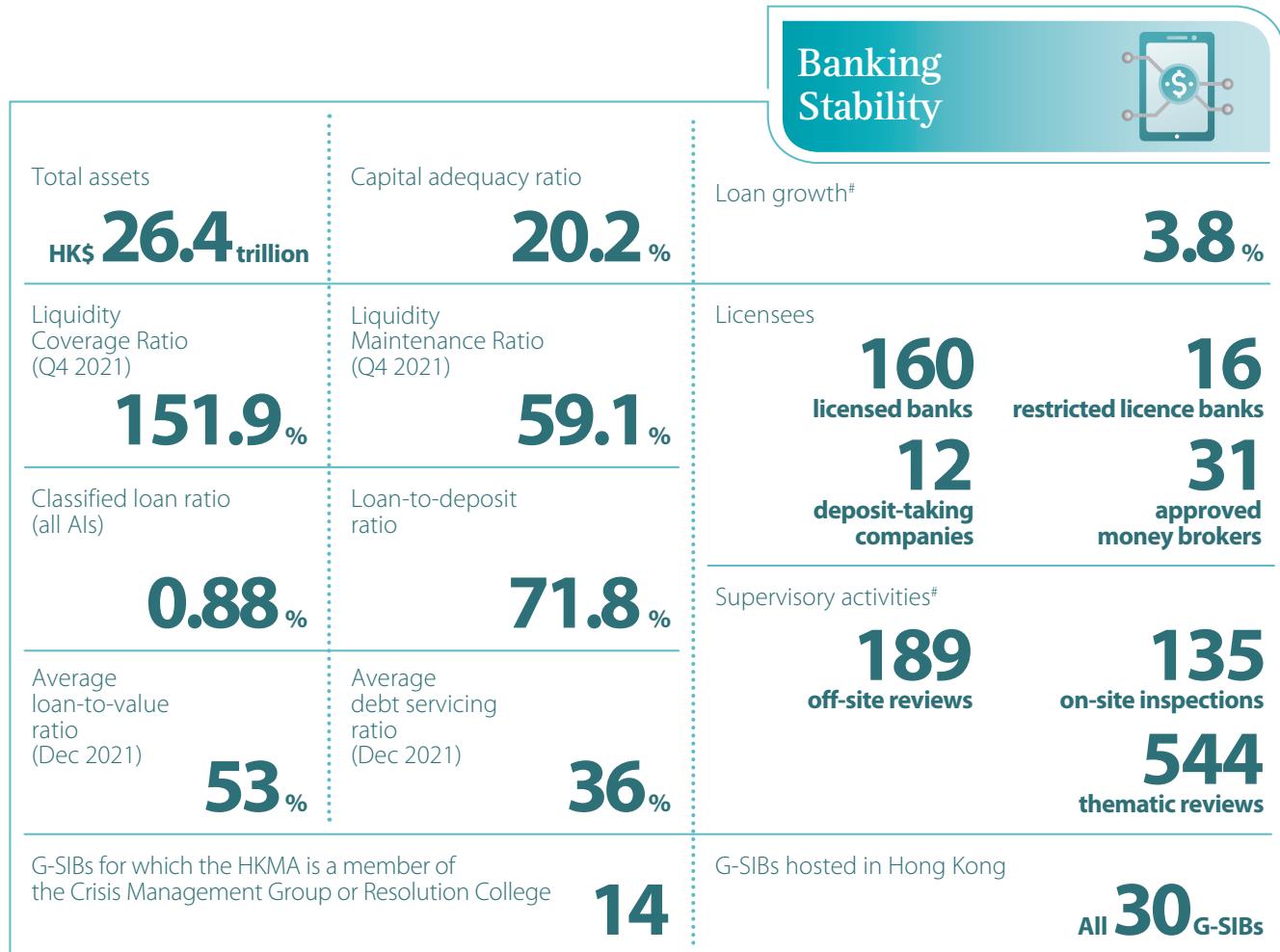
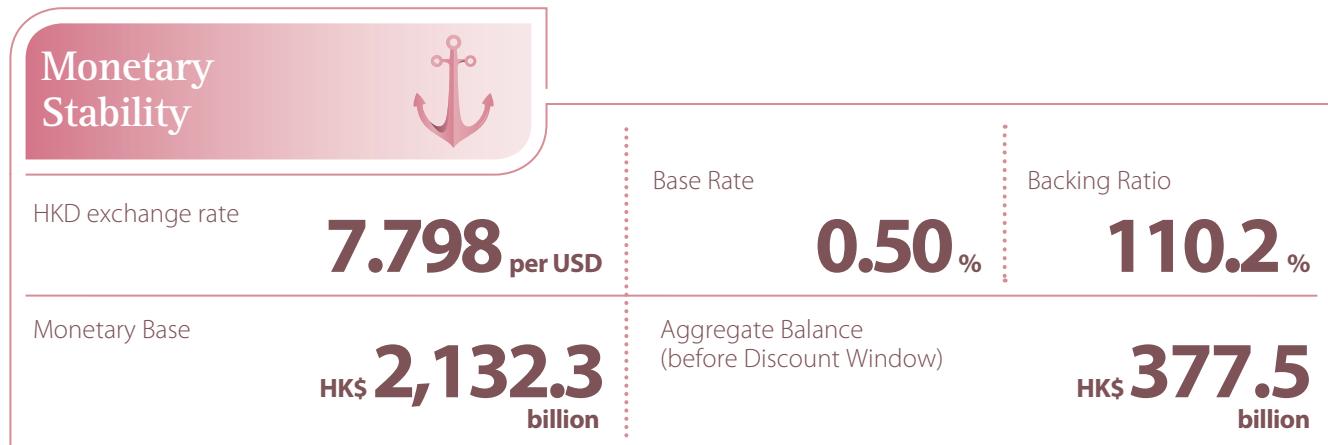
On the market development front, the HKMA has steered the launch of the Centre for Green and Sustainable Finance which co-ordinates cross-sector efforts in capacity building and policy development, and serves as a repository for resources and data. The Alliance for Green Commercial Banks, jointly launched by the HKMA and International Finance Corporation, helps banks develop solutions to address climate change across emerging markets. The HKMA has also assisted the Government in the issuance of close to US\$6.5 billion equivalent of institutional green bonds in 2021.

As a responsible investor, the HKMA makes its inaugural disclosures on climate scenario analysis and carbon footprint metrics of the Exchange Fund's portfolios aligning with recommendations of the Task Force on Climate-related Financial Disclosures.

The HKMA also steps up its own green office initiatives, and enhances corresponding disclosures. In addition, the HKMA holds itself to high standards of corporate social responsibility, and continues to promote a sustainable, financially inclusive and environmentally friendly marketplace, support the wider community, protect the environment and nurture a caring workplace.

Highlights of 2021

KEY FIGURES FOR 2021



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

Unless specified, figures are as at the end of 2021.

[#] Figures for the year of 2021 as a whole.

CMU – Central Moneymarkets Unit
CPI – Consumer Price Index
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
SVF – Stored value facility
USD – US dollar

Highlights of 2021

International Financial Centre				
RMB deposits (incl. outstanding certificates of deposit)	#1 largest offshore RMB liquidity pool	RMB 944.7 billion (+25%)	Registered Limited Partnership Funds	Availability of four RTGS systems and CMU ¹ 100% ¹
Hong Kong's share of RMB SWIFT payments globally [#]	#1 in the world	> 70%	RMB RTGS average daily turnover [#] RMB 1,522.6 billion (+28%)	HKD RTGS average daily turnover [#] HK\$ 939.7 billion
Asian international bond issuance [#]	#1 largest arranging hub	us\$ 206.8 billion equivalent	Outstanding RMB loans RMB 163.6 billion	Offshore RMB bond issuance [#] RMB 109.6 billion (+87%)
Asian international green and sustainable bond issuance [#]	#1 largest arranging hub	us\$ 31.3 billion equivalent	FPS registrations 9.6 million (+40%)	Average daily real-time transactions of FPS [#] 673,000 (+90%)
Northbound Bond Connect investors	Average daily turnover under Northbound Bond Connect [#]	RMB 25.8 billion	IFFO partners 95	SVF accounts 66.4 million
				Value of SVF transactions [#] HK\$ 275.6 billion

Reserves Management	
EF investment income [#]	EF investment return [#]
HK\$ 191.9 billion	4.1%
EF assets	Market value of LTGP investments
HK\$ 4,570.2 billion	HK\$ 515.3 billion
	EF compounded annual investment return (since 1994) 4.8% (>2.0% increase in HK composite CPI over the same period)
	LTGP annualised internal rate of return (since 2009) 15.4%

¹ About 99.98% if including downtime caused by external factors.

Calendar of Events 2021

Monetary Stability

30 Jul

The HKMA announces the conversion of the temporary US Dollar Liquidity Facility to a standing arrangement, with the key operational parameters remaining unchanged.

25 Aug

The HKMA announces an increase in the issuance of 91-day Exchange Fund Bills by a total of HK\$40 billion in September and October 2021.

20 Oct

The HKMA announces an increase in the issuance of 91-day Exchange Fund Bills by a total of HK\$40 billion in November and December 2021.

18 Nov

The Government issues HK\$1 billion inaugural one-year Floating Rate Notes indexed to the Hong Kong Dollar Overnight Index Average under the Institutional Bond Issuance Programme.

13 Dec

The HKMA announces an increase in the issuance of 91-day Exchange Fund Bills by a total of HK\$40 billion in January and February 2022.

Banking

21 Jan

The HKMA releases a report titled *AML/CFT Regtech: Case Studies and Insights*, which highlights how Regtech enhances the effectiveness and efficiency of Anti-Money Laundering and Counter-Financing of Terrorism (AML/CFT) efforts, and shares end-to-end approaches implemented in real-life examples.

29 Jan

The HKMA, together with the Banking Sector Small and Medium-sized Enterprise (SME) Lending Coordination Mechanism, announces a 90-day repayment deferment for trade facilities under the Pre-approved Principal Payment Holiday Scheme (PPPHS) for eligible corporate customers.

8 Feb

In view of the ongoing impact of the COVID-19 pandemic on the Hong Kong's economy and the labour market, the HKMA extends the Banking Talent Programme to cover fresh graduates in 2021 and the employment period of graduates in the 2020 Programme by six months.

24 Feb

To further alleviate the cash-flow pressure faced by SMEs, HKMC Insurance Limited (HKMCI) announces the enhancement as well as an extension of the application period of the Special 100% Loan Guarantee of the SME Financing Guarantee Scheme (SFGS).

4 Mar

The HKMA, together with the Banking Sector SME Lending Coordination Mechanism, announces that the PPPHS will be extended for another six months to October 2021, except for repayment of trade loans which will be deferred by 90 days.

25 Mar

The HKMA organises the "Global Regtech Challenge" competition to raise the Hong Kong banking industry's awareness of the potential of Regtech adoption.

Calendar of Events 2021

Banking

28
Apr

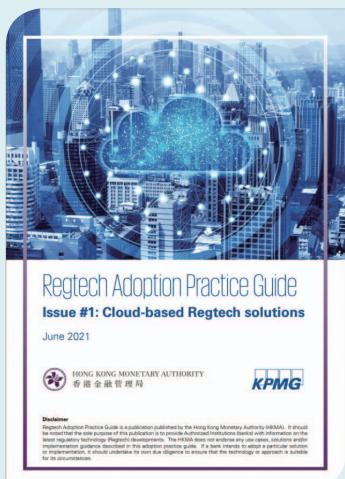
The 100% Personal Loan Guarantee Scheme (PLGS), administered by the HKMCI, starts receiving applications, to provide a source of financing to unemployed individuals suffering from cessation of main recurrent incomes from employment in Hong Kong during the COVID-19 pandemic.

3
May

The HKMA concludes a consultation on implementing the Mandatory Reference Checking Scheme to address the “rolling bad apples” phenomenon in the banking industry (i.e. bank employees with a misconduct record obtaining subsequent employment at another bank).

17
Jun

The HKMA releases a new *Regtech Adoption Practice Guide* series to provide banks with detailed practical guidance on the implementation of Regtech solutions.



25
Jun

The Financial Institutions (Resolution) (Contractual Recognition of Suspension of Termination Rights — Banking Sector) Rules, commonly referred to as the Stay Rules, are gazetted.

30
Jun

The HKMA hosts its flagship Regtech virtual conference *Unlocking the Power of Regtech*.

The HKMA also publishes Hong Kong’s inaugural *Regtech Adoption Index*, which indicates that the majority of banks in Hong Kong have embarked on their Regtech journeys and there are enormous opportunities for growth and collaboration within the Regtech ecosystem.



30
Jun

The Banking (Capital) (Amendment) Rules 2020, which have been made to implement the revised Basel counterparty credit risk framework, come into operation.

6
Jul

The Hong Kong Mortgage Corporation Limited (HKMC) announces the launch of promotion for the “HKMC Retire 3” brand which covers its retirement planning products, namely the Reverse Mortgage Programme (RMP), the HKMC Annuity Plan and the Policy Reverse Mortgage Programme (PRMP).

6
Jul

The HKMA and the Hong Kong Association of Banks (HKAB) jointly launch a campaign themed “Protect your Personal Digital Keys; Beware of Fraudulent Links!” to raise public awareness against rising numbers of phishing attacks.

15
Jul

Repayment for trade facilities will be deferred by a further 90 days under the PPPHS.

Calendar of Events 2021

Banking

19
Jul

The HKMC announces the launch of an enhanced fixed-rate mortgage plan under the RMP, as well as product enhancements made to the RMP and the PRMP.

27
Aug

The Stay Rules come into operation.

21
Sep

The PPPHS is extended for another six months to end-April 2022, except for repayment of trade loans which is deferred by 90 days.

21
Sep

The Government announces further enhancements to the support measures under the SFGS to extend the maximum duration of principal moratorium from 18 months to 24 months for the 80% Guarantee Product, the 90% Guarantee Product and the Special 100% Loan Guarantee under the SFGS, and the application period for principal moratorium is also extended to end-June 2022.

21
Sep

The Government announces that the application period of the PLGS is to be extended to end-April 2022.

24
Sep

The HKMA provides guidance to banks on distributing investment and insurance products through non-face-to-face channels in a customer-friendly manner while according protection to customers.

30
Sep

The Insurance Authority and the HKMA issue a circular outlining key findings of their first joint inspection on premium financing activities carried out by long term insurers and licensed insurance intermediaries (including banks).

7
Oct

The Securities and Futures Commission (SFC) and the HKMA release the findings of their first joint survey on the Sale of Non-exchange Traded Investment Products by licensed corporations (LCs) and registered institutions (RIs). A total of 308 LCs and 64 RIs reported selling investment products with an aggregate transaction amount of HK\$5,700 billion during 2020, with a participation of over 700,000 investors.

11
Oct

The HKMA and the SFC issue a joint circular to remind intermediaries of the key investor protection measures in distributing insurance-linked securities and related products.

21
Oct

The HKMA and the People's Bank of China (PBoC) announce the signing of a memorandum of understanding (MoU) to link up the PBoC's Fintech Innovation Regulatory Facility with the HKMA's Fintech Supervisory Sandbox, in the form of a network.

Calendar of Events 2021

Banking

25 Oct

The HKMA shares the Regtech Skills Framework with the banking industry and the tech community, together with a series of recommendations to develop Regtech talents in Hong Kong.



29 Oct

The HKMC announces the conversion of the Fixed Rate Mortgage Scheme from a pilot programme to a permanent product starting from 1 November 2021.

5 Nov

The HKMA, in collaboration with Cyberport, launches the first Anti-Money Laundering Regtech Lab (AMLab) to further encourage the use of Regtech under the "Fintech 2025" strategy.



18 Nov

The HKMA issues a circular to improve banks' handling of dormant accounts and unclaimed deposits.

23 Nov

The HKMA publishes the *Interim Report on Focused Review on Incentive Systems of Front Offices in Retail Banks* to share the preliminary observations and insights with the industry.

3 Dec

The HKMA launches a new Fintech module under the Enhanced Competency Framework to promote talent development and enhance the professional competence of existing banking practitioners whose duties involve technological innovations for financial services in the banking industry.

10 Dec

With the active participation of the HKMA, HKAB and the DTC Association (DTCA) complete a review and launch the revised Code of Banking Practice to enhance protection for bank consumers.

10 Dec

With the support of the HKMA, HKAB issues the *Guideline on Banking Services for Persons with Dementia*, setting out the good practices recommended for the industry in providing banking services to customers in need.

21 Dec

The HKMA issues a circular to set out enhanced measures for real-time fund transfers to help reduce incorrect fund transfers made by bank customers.

Calendar of Events 2021

Banking

29 Dec

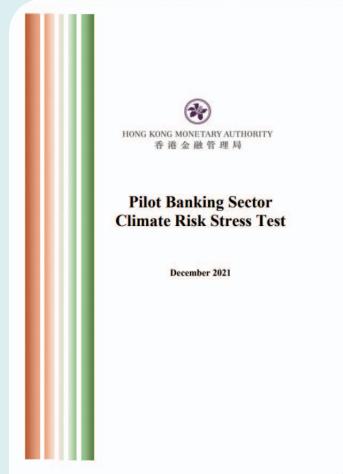
The Insurance Authority, the Mandatory Provident Fund Schemes Authority and the HKMA announce a joint mystery shopping programme for understanding the selling practices of intermediaries in respect of Qualifying Deferred Annuity Policies and Tax-deductible Voluntary Contributions.

29 Dec

With the support of the HKMA, HKAB and DTCA launch an industry consultation on the Payment Arrangements for Property Transactions proposal.

30 Dec

The HKMA publishes the results of its pilot climate risk stress test.



International Financial Centre

26 Jan

The HKMC signs its first MoU on an infrastructure loan sales framework with a commercial bank, which will further the mandates of the HKMC's Infrastructure Financing and Securitisation business to fill the infrastructure financing market gaps and to consolidate Hong Kong's position as an infrastructure financing hub.

27 Jan

The Government's US\$2.5 billion green bond offering, with 5-, 10- and 30-year tenors, is well received by the global investment community and helps to build a comprehensive benchmark curve for potential issuers in Hong Kong and the region. The 30-year tranche is the first 30-year green bond issued by an Asian government, and the longest tenor issued by the Government. The green bonds are issued under a newly-established Global Medium Term Note Programme dedicated to green bond issuances.

3 Feb

The HKMC launches a two-year Hong Kong dollar and a three-year offshore renminbi public bond issues under the US\$12 Billion Medium Term Note Programme in the institutional market. The HK\$10 billion-equivalent public bond issues are the largest public corporate bond offering with book-building and pricing conducted in Hong Kong.

5 Feb

The HKMA, the PBoC, China Banking and Insurance Regulatory Commission, China Securities Regulatory Commission, State Administration of Foreign Exchange, the SFC and Monetary Authority of Macao (AMCM) agree on the principles of supervisory co-operation under the Cross-boundary Wealth Management Connect (Cross-boundary WMC), and sign the MoU on the Launch of the Cross-boundary WMC Pilot Scheme in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA).

Calendar of Events 2021

International Financial Centre

23
Feb

The Central Bank of the United Arab Emirates (CBUAE) and the Digital Currency Institute of the PBoC join the second phase of Project Inthanon-LionRock, a Central Bank Digital Currency (CBDC) project for cross-border payments initiated by the HKMA and the Bank of Thailand. The project has been renamed as the Multiple Central Bank Digital Currency Bridge (mBridge) Project.

23
Feb

The HKMA and the CBUAE jointly announce the exchange of an MoU to enhance collaboration on fintech between the two authorities, strengthening co-operation between the two jurisdictions in promoting innovative financial services and regulatory development.

22
Mar

The HKMC signs MoUs on infrastructure loans framework with five partner banks.

1
Apr

The HKMA establishes the delivery-versus-payment link for cross-currency securities transactions between the Hong Kong dollar Clearing House Automated Transfer System and the Bank of Japan Financial Network System for Japanese Government Bond Services.

8
Apr

The Hong Kong Academy of Finance (AoF) kicks off the Thematic Programme on Fintech and Digitalisation. Consisting of four webinars, the Programme covers the core elements of artificial intelligence and machine learning, cryptography, algo-trading, Regtech, and their practical applications. Leading industry experts share with participants their insights of fintech transformation in the financial services industry while renowned academics enrich participants' understanding of the key elements of digital innovation.

27
Apr

The Alliance for Green Commercial Banks, co-launched by the HKMA and International Finance Corporation (IFC), a member of the World Bank Group, hosts the first virtual roundtable on *CEO Talk: Opportunities for Green Bank Transformation*.

10
May

The Green and Sustainable Finance Grant Scheme is launched to provide subsidy for eligible green and sustainable bond issuers and loan borrowers to cover their expenses on bond issuance and external review services.

8
Jun

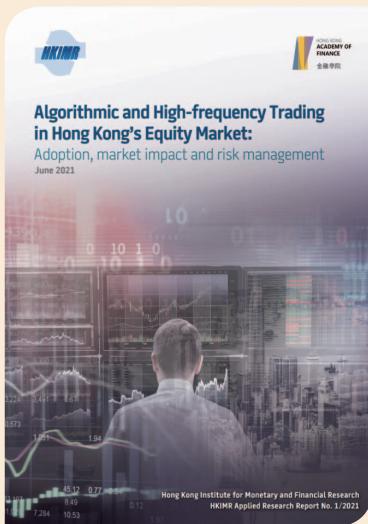
The HKMA unveils its new "Fintech 2025" strategy for driving fintech development of Hong Kong. The five focus areas under the strategy are: 1) All banks go fintech; 2) Future-proofing Hong Kong for CBDCs; 3) Creating the next-generation data infrastructure; 4) Expanding the fintech-savvy workforce; and 5) Nurturing the ecosystem with funding and policies.

Calendar of Events 2021

International Financial Centre

28 Jun

The Hong Kong Institute for Monetary and Financial Research (HKIMR), the research arm of the AoF, releases an applied research report titled *Algorithmic and High-frequency Trading in Hong Kong's Equity Market: Adoption, market impact and risk management*.



6 Jul

The AoF hosts a webinar on *Economic Recovery from COVID-19 and Beyond*.



14 Jul

The Alliance for Green Commercial Banks hosts the second virtual roundtable on *CEO Talk: BUILDING a Green Future*.

15 Jul

The Green and Sustainable Finance Cross-Agency Steering Group, co-chaired by the HKMA and the SFC, announces the next steps to advance its collaborative strategy to bolster Hong Kong's position as a leader in green and sustainable finance and help transition the financial ecosystem towards carbon neutrality.

16 Jul

The HKMA's certification of funds under the Inland Revenue (Amendment) (Tax Concessions for Carried Interest) Ordinance 2021 comes into operation.

21 Jul

The Alliance for Green Commercial Banks hosts the virtual roundtable *Practitioner Talk: BUILDING a Green Future*.

22 Jul

The HKMA hosts a virtual symposium on the *Commercial Data Interchange* (CDI), which highlights its current status and development roadmap, and the support the HKMA will offer along the way.

The HKMA also launches the CDI Innovation Hub to further facilitate the CDI development and adoption, as well as to assist in matchmaking between potential data providers and data users.

Calendar of Events 2021

International Financial Centre

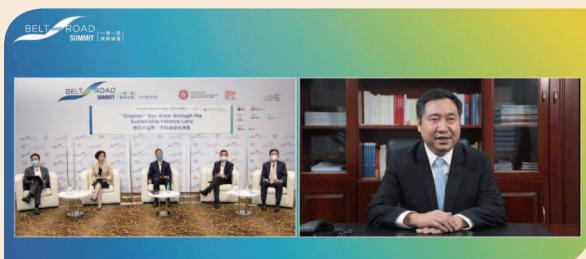
17 Aug

The HKIMR and the AoF co-host a webinar on *Renminbi Exchange Rate Formation Mechanism and Exchange Rate Outlook*.



1 Sep

The HKMA Infrastructure Financing Facilitation Office hosts a panel discussion on '*Greener*' Bay Area: through the Sustainable Finance Lens at the sixth Belt and Road Summit, delving into sustainable development and related financing in the GBA, with a focus on green supply chain and infrastructure financing.



10 Sep

The HKMA, the PBoC and the AMCM promulgate the respective implementation details for the Cross-boundary WMC Pilot Scheme in the GBA applicable to Hong Kong, the Mainland and Macao, providing supervisory guidance for the industry. This marks the completion of the supervisory framework required for the formal launch of the scheme.



24 Sep

Southbound Trading under Bond Connect is launched and operates smoothly on its first trading day, with more than 150 transactions totalling around RMB4 billion.



28 Sep

The HKMA and other mBridge project partners publish a report titled *Inthanon-LionRock to mBridge: Building a multi CBDC platform for international payments* to deliver the interim findings of the mBridge project.

Calendar of Events 2021

International Financial Centre

4 Oct

The HKMA releases a technical white paper on retail CBDC, titled *e-HKD: A technical perspective*, to explore potential architectures and technical design options for issuing and distributing retail CBDCs, as well as to solicit feedback on the proposed architecture from academia and industry.

19 Oct

Eligible Hong Kong banks, together with their respective Mainland partner banks, start providing Cross-boundary WMC services.

28 Oct

The HKIMR releases a new applied research report titled *Artificial Intelligence and Big Data in the Financial Services Industry: A Regional Perspective and Strategies for Talent Development*.



Artificial Intelligence and Big Data in the Financial Services Industry
A Regional Perspective and Strategies for Talent Development
October 2021

Hong Kong Institute for Monetary and Financial Research
HKIMR Applied Research Report No.2/2021

1 Nov

The new fund re-domiciliation mechanisms take effect. These arrangements enable existing funds set up in corporate or limited partnership form outside of Hong Kong to re-locate their registrations and operations to Hong Kong.

1–5 Nov

The HKMA co-organises with InvestHK Hong Kong FinTech Week 2021, which attracts over 20,000 attendees and more than four million online views.

The HKMA and the Bank for International Settlements Innovation Hub Hong Kong Centre conclude Project Genesis, which, among other things, concept-tests the potential issuance of tokenised green bonds to retail investors. The HKMA will look further into the feasibility of piloting the issuance of tokenised green bonds under the Government Green Bond Programme.



Calendar of Events 2021

International Financial Centre

3
Nov

The IFC announces that it will partner with the HKMA and another institutional investor to create a new US\$3 billion global platform for climate-smart investment aligned with the Paris Agreement.

The new program, Managed Co-Lending Portfolio Program (MCP) One Planet, combines institutional investor contributions with IFC's own funds to scale up climate-responsible financing for private companies in emerging markets. MCP One Planet will create the world's first cross-sectoral portfolio of emerging-market loans aligned with the Paris Agreement.

3
Nov

The HKMA issues a statement to support the Central Banks and Supervisors Network for Greening the Financial System Glasgow Declaration, which sets out how the HKMA will incorporate climate considerations in carrying out its main functions, and demonstrates its commitment to tackle climate change through building climate resilience and enriching the green and sustainable finance ecosystem.

8
Nov

The AoF launches the Financial Leaders Programme to nurture the next generation of financial leaders through inspiring talents with considerable experience in the financial industry, equipping them with a mindset to lead, enhancing their understanding of financial issues from macro and systemic perspectives, as well as expanding their professional network.

11
Nov

The HKIMR organises its 11th Annual International Conference on the Chinese Economy titled *On the Path to Common Prosperity: China's Economic Development in Dual Circulation* in hybrid format. The conference discusses recent policy issues related to common prosperity, dual circulation, anti-monopoly regulation, property market, Cross-boundary WMC and GBA financial developments. Speakers also give in-depth analyses of the impact of population ageing, sustainability of social security fund and China's contribution to the global financial stability and world economy.



Calendar of Events 2021

International Financial Centre

16 Nov

The Alliance for Green Commercial Banks hosts the third virtual roundtable on *Climate Risk in Action: A Conversation with Practitioners*.

18 Nov

The Government successfully offers US\$3 billion worth of green bonds denominated in US dollar and euro to global institutional investors. It is the Government's inaugural offering of euro-denominated bonds, setting an important new benchmark for potential issuers in Hong Kong and the region.

23–25 Nov

The HKMA leads the HKAB delegation in a series of annual meetings with relevant agencies of the Central Government via video conference, discussing economic and financial conditions in Hong Kong and the Mainland, future development of Hong Kong as an international financial centre and issues of mutual interest.

24 Nov

The Government successfully offers RMB5 billion offshore renminbi green bonds to global institutional investors. It is the Government's inaugural offering of renminbi-denominated bonds, setting an important new benchmark for the offshore renminbi market.

9 Dec

The PBoC and the HKMA co-organise a joint seminar *Hong Kong's Positioning and Prospect as an International Financial Centre*, with thematic discussions focusing on the positioning and future development of Hong Kong as an international financial centre and an offshore renminbi business hub, attracting around 300 participants attending physically in Hong Kong and Beijing venues. The meeting is also opened virtually to invited guests.



16 Dec

The Green and Sustainable Finance Cross-Agency Steering Group announces the progress made and the way forward to advance Hong Kong's position as a leader in green and sustainable finance, with focus on the Centre for Green and Sustainable Finance, taxonomies, climate-related disclosures and sustainability reporting as well as carbon market opportunities.

Calendar of Events 2021

Corporate Functions

13
Jul

The HKMA launches the video series titled "Four Faces of Talents in Central" to introduce four growing areas of the financial industry to raise the young generation's interest in pursuing a career in the industry.



31
Dec

During 2021, an additional four sets of financial data published on the HKMA website are made available via Open Application Programming Interface for free use by the public.



"Four Faces of Talents in Central" video series

Priorities for 2022 and Beyond

Global and local conditions deteriorated notably entering 2022. On the one hand, the escalation of the Ukraine situation and expectations of rate hikes by the US Federal Reserve triggered market volatility. On the other hand, the local economy took a hit from the new wave of COVID-19 pandemic. That said, Hong Kong's financial system remains well-positioned to withstand adverse shocks given its resilience and buffers built up over the years. Looking ahead, the HKMA will continue to attach high importance to safeguarding monetary and financial stability. In doing so, we will endeavour to stay ahead of the curve by identifying emerging risks and responding to them in an agile manner. At the same time, the HKMA will seek opportunities that would help bolster Hong Kong's status as a leading international financial centre. In managing the Exchange Fund in this complicated investment environment, the HKMA will continue to invest prudently, while remaining flexible, implementing defensive measures as appropriate, and maintaining a high degree of liquidity.



Priorities for 2022 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

Looking ahead, markets may be subject to heightened volatilities amid increased uncertainties on various fronts. On the one hand, the US Federal Reserve's monetary policy normalisation, if continuing at a fast pace, may tighten global financial conditions visibly ahead and increase the global debt-servicing burden. On the other hand, following the escalation of the Ukraine situation in early 2022, geopolitical uncertainties including the China-US tension may continue to stay high and trigger bouts of financial market volatility again. Last but not least, with the evolving pandemic developments, there might be a potential downside scenario where lockdowns were to be re-imposed at a large scale, leading to persistent global supply bottlenecks and adversely affecting global growth and inflation. Having said that, 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 stand ready to deploy appropriate measures where necessary to maintain Hong Kong's monetary and financial stability. Research programmes in 2022 will study issues affecting the Hong Kong economy and assess their potential risks. Meanwhile, the HKMA's ongoing Digitalisation Programme will help enhance its surveillance capabilities to support more holistic surveillance and comprehensive analysis of the financial system.

Maintaining banking stability

As developed markets tighten monetary policies and the impact of the pandemic lingers, the credit landscape facing the banking sector is expected to remain challenging. At the same time, rapid technological advancement and digitalisation present 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 risk

In 2022, the HKMA will step up the surveillance of banks' credit risk exposures and take proactive steps to ensure that overall risk levels remain well contained.

The HKMA will also continue to monitor the development of the pandemic and its effect on the operating conditions of corporates, as well as maintain close dialogue with the banking and commercial sectors while keeping the various relief measures under review.

Operational and technology risks

With the issuance of the new Supervisory Policy Manual (SPM) module on "*Operational Resilience*" in May 2022, the HKMA will continue to engage the industry and understand authorized institutions' (AIs') progress in developing their operational resilience frameworks. In parallel, the HKMA will seek to raise the banking sector's cyber resilience by following up with AIs on issues revealed by the assessments under the Cyber Resilience Assessment Framework 2.0 and monitoring AIs' implementation of secure tertiary data backup. Another key supervisory focus will be evaluating and addressing the risks from AIs' growing dependency on technology service providers.

With enhanced digital capabilities and extensive remote working experience accumulated during the pandemic, some AIs are planning to transition to a hybrid working model on a business-as-usual basis. The HKMA will keep track of this development and assess whether the associated risks are adequately addressed by the industry.

Priorities for 2022 and Beyond

Liquidity and market risks

The HKMA will focus on the supervision of AIs' liquidity and market risk management in 2022. In particular, the HKMA will continue to monitor AIs' progress in transitioning away from the remaining London Interbank Offered Rate (LIBOR) settings before these settings cease to be published by 30 June 2023.

Combating money laundering and terrorist financing

In 2022, the HKMA's work on anti-money laundering and counter-financing of terrorism (AML/CFT) will continue to focus on strengthening response to fraud and financial crime through collaboration and information sharing, pursuing closer co-operation with various stakeholders in the AML/CFT ecosystem. Other priorities are to implement a wider range of risk-sensitive supervisory techniques, by leveraging enhanced data and supervisory technology (Suptech) capabilities, and promote the use of Regtech by banks, including transaction monitoring systems.

The HKMA will also keep working closely with the Government, the banking and stored value facility (SVF) sectors to publish an updated Hong Kong money laundering and terrorist financing risk assessment, and assist the industry in combatting new and emerging risks. Work will also continue on understanding evolving money laundering and terrorist financing risks, implementing changes to AML law and related guidance to align with international standards, and maintaining proactive engagement with other regulators and international standard setters.

Wealth management and mandatory provident fund-related businesses

In 2022, the HKMA will carry out 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, with a focus on the Cross-boundary Wealth Management Connect (Cross-boundary WMC) Scheme in the Guangdong–Hong Kong–Macao Greater Bay Area, digital advisory platforms, complex products, virtual assets and non-investment-linked long term insurance products.

While maintaining close communication with other regulators and the banking industry, the HKMA will provide further guidance on regulatory standards in relation to the sale of investment, insurance and MPF products. This will cover, among other things, investment services related to virtual assets and the selling of Protection Linked Plans, a new subset of investment-linked assurance scheme products with high level of insurance protection. The HKMA, the Insurance Authority and the Mandatory Provident Fund Schemes Authority will jointly launch a mystery shopping programme on the selling practices of intermediaries in respect of Qualifying Deferred Annuity Policies and Tax-deductible Voluntary Contributions.

Following the smooth launch of the Cross-boundary WMC, the HKMA will continue engaging the industry and relevant regulatory authorities to enhance the scheme.

Moreover, the HKMA will embark on preparation work for supervising AIs' trust business under a new SPM module and a new Code of Practice.

Oversight of financial market infrastructures

The HKMA will continue 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)¹, and the various guidances issued by the Committee on Payments and Market Infrastructures (CPMI). It will fine-tune the FMI oversight framework taking into account the latest technological and market developments.

The HKMA will work with the FMIs on their observance of the PFMI, conducting and updating assessments as appropriate. In addition, the HKMA will continue to participate in the CPMI-IOSCO PFMI implementation monitoring and assessment exercise. The HKMA will also participate in the work of international standard setting bodies and strengthen its oversight requirements in response to market and technology developments and in line with international practices. The HKMA will work with relevant authorities to further strengthen co-operative oversight arrangements where appropriate.

¹ The PFMI are promulgated by the Committee on Payments and Market Infrastructures (CPMI) and the Technical Committee of the International Organization of Securities Commissions (IOSCO), and constitute the latest international standards for the oversight of FMIs, including systemically important payment systems, central securities depositaries, securities settlement systems, central counterparties and trade repositories.

Priorities for 2022 and Beyond

Policy development

The HKMA will continue to enhance 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 continue to enhance the capital framework with the implementation of the standards published by the Basel Committee on Banking Supervision (Basel Committee) in recent years, which include the following:

- ◆ The *Capital Requirements for Banks' Equity Investments in Funds* of December 2013 (EIF standard), which will come into effect on 1 July 2022 with the Banking (Capital) (Amendment) Rules 2022 commencing operation after negative vetting by the Legislative Council.
- ◆ 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, which are collectively referred to as the "Basel III final reform package". These revised capital standards set out the revised capital treatment of credit risk, market risk, credit valuation adjustment (CVA) risk and operational risk, introduce an output floor requirement, and enhance the leverage ratio framework. Amendments to the Banking (Capital) Rules (BCR) are being prepared in consultation with the industry with a view to them taking effect from 1 July 2023 as minimum requirements (except for those on market risk and CVA risk²).

Given that the capital treatment for sovereign concentration risk under the BCR was designed to complement the Basel Committee's large exposure framework as implemented by the Banking (Exposure Limits) Rules, the HKMA will propose amendments to the capital rules in parallel with relevant changes to the Banking (Exposure Limits) Rules.

Exposure limits

The HKMA will continue its work on the proposed amendments to the Banking (Exposure Limits) Rules in consultation with the industry and the Department of Justice with a target implementation date aligned with the one for the Basel III final reform package, i.e. 1 July 2023.

Disclosure standards

New or revised disclosure requirements associated with the revised capital standards in the Basel III final reform package are mainly set out in the *Pillar 3³ 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 amending the disclosure requirements for leverage ratio 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). Corresponding amendments to the Banking (Disclosure) Rules to implement these new or revised disclosure requirements are also being prepared, with a view to having them take effect in Hong Kong along the same timelines as their associated revised capital standards.

² These will initially take effect as a reporting requirement on that date pending their implementation as a minimum requirement on a date no earlier than 1 January 2024, having regard also to implementation timelines adopted in other major financial centres.

³ 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 2022 and Beyond

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, "*Countercyclical Capital Buffer – Approach to its Implementation*", "*Interest Rate Risk in the Banking Book*", "*New Share Subscription and Share Margin Financing*" and "*Stress Testing*". The HKMA will also continue to work on the revised SPM modules on "*Code of Conduct*" and "*Reporting Requirements Relating to Authorized Institutions' External Auditors under the Banking Ordinance*", with an aim to finalising the revisions within 2022. 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 be updated accordingly.

Balanced and responsive supervision

The HKMA will maintain close dialogue with the banking industry to explore areas for further refinement and streamlining of supervisory policies and practices to support sustainable development of the banking sector amid an ever-changing banking environment and evolving risk landscape. In particular, in view of the growing importance of private banks, the HKMA will extend this initiative to cover private banks in 2022.

Accounting standards

The International Accounting Standards Board (IASB) is carrying out a post-implementation review of the classification and measurement requirements in International Financial Reporting Standard 9 (IFRS 9). The HKMA will keep in view the outcome of the IASB's assessment, as well as the implementation of IFRS 9 by AIs in Hong Kong amid the evolving environment. The HKMA will maintain regular dialogue with AIs' external auditors and assess the implications of other impending accounting standards for the existing prudential requirements on AIs.

Enforcement

Pursuant to the objectives of market integrity and bank customer protection, the HKMA will follow up on and investigate cases which come to its attention through complaints or intelligence on possible breaches of requirements under various statutory regimes relevant to AIs and SVF licensees. The full range of supervisory and enforcement measures will be considered and deployed as appropriate. The HKMA will collaborate closely with other local financial regulators to achieve effective and co-ordinated enforcement outcomes. It will also maintain close communication with the banking industry and share the latest complaint trends and good practices in further promoting proper standards of conduct and prudent business practices among AIs.

Priorities for 2022 and Beyond

Resolution

The HKMA will continue its multi-year programme to build an operational resolution regime for AIs. For 2022, the HKMA will prioritise the following topics within its three core objectives (see Table 1 for details).

Table 1 Forward priorities on resolution in 2022

 Resolution standards	 Resolution planning	 International policy, regional co-operation and execution capability
<ul style="list-style-type: none"> ◆ Consult on and finalise a Financial Institutions (Resolution) Ordinance (FIRO) Code of Practice chapter on liquidity reporting and estimation capabilities ◆ Advance development of a FIRO Code of Practice chapter on continuity of access to FMs in resolution 	<ul style="list-style-type: none"> ◆ Lead regional resolution planning and co-ordinate with relevant authorities via Crisis Management Groups (CMGs), Resolution Colleges, and bilateral or multilateral engagement on home-host efforts to enhance the resolvability of global systemically important banks and crisis preparedness of authorities ◆ Continue to advance bilateral resolution planning programmes with domestic systemically important banks (D-SIBs), assessing resolvability and working with these banks to address impediments to an orderly resolution ◆ Foster build-up of loss-absorbing capacity resources at AIs for which preferred resolution strategies have been determined and implement expectations on operational continuity in resolution ◆ Advance development of preferred resolution strategies for locally incorporated AIs other than D-SIBs with total consolidated assets above HK\$300 billion 	<ul style="list-style-type: none"> ◆ Contribute to international policy developments and implementation monitoring at the Financial Stability Board (FSB) on its resolution-related priorities, including the implementation of total loss-absorbing capacity standard, bail-in execution and good practices of CMGs ◆ Chair and provide the secretariat function for the resolution-specific forum of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)⁴, the Study Group on Resolution ◆ Advance development of local mechanics to execute stabilization options ◆ Advance development of a crisis management framework to support co-ordination between Hong Kong resolution authorities

⁴ The EMEAP is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region.

Priorities for 2022 and Beyond

BANKING SECTOR DEVELOPMENT

In 2022, the HKMA will further promote the sound business conduct of banks, as well as foster healthy growth of the banking sector. These efforts contribute importantly 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 continue to participate in, and provide advice to, the Code of Banking Practice Committee of the Hong Kong Association of Banks (HKAB) in 2022 to further review the Code of Banking Practice 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 also their compliance with the Code in general.

To strengthen consumer protection, the HKMA will keep abreast of developments in innovative banking services and give guidance to the banking industry as appropriate. In particular, the HKMA plans to issue guidance in respect of new service models, such as "buy now, pay later" which has become popular in some jurisdictions.

Following the completion of the Focused Review on Incentive Systems of Front Offices in Retail Banks as part of its ongoing initiative to promote sound culture in the banking sector, the HKMA will continue to work closely with the banking industry regarding their culture efforts in tandem with their initiatives on incentive systems in reinforcing good customer and conduct outcomes. The HKMA will also continue to carry on culture dialogues with AIs, taking into account emerging themes. In parallel, the HKMA will maintain close communication with overseas regulators on the development of bank culture. The HKMA will monitor the implementation of the *Guidelines on the Mandatory Reference Checking Scheme* issued by the banking industry associations to address the "rolling bad apples"⁵ phenomenon in the local banking sector.

The HKMA has been working closely with the Industry Associations⁶ to introduce more than one consumer credit reference agency (CRA) in Hong Kong to enhance service quality of consumer CRAs and address the risk of single point of failure of having only one CRA. The Industry Associations are assessing the three shortlisted CRA tenderers. Meanwhile, the participating credit providers, the three shortlisted CRA tenderers and the platform operator will undergo system testing after completion of system development. The new platform is expected to be in operation by the end of 2022.

Working closely with the banking industry, the HKMA will fine-tune the proposal for payment arrangements for property transactions (PAPT) to improve the safety, certainty and speed of sizeable payments in property transactions, taking into account comments from the banking industry and other stakeholders. The HKMA will provide strong support to the implementation of the initiative in respect of the development of relevant documentation, conducting pilot transactions, as well as stakeholder engagement and public education.

Financial inclusion

The HKMA will further promote financial inclusion in Hong Kong through engaging the banking industry, business community and relevant stakeholders, taking into account market developments and opportunities in the digital age.

In addition, the HKMA will monitor the industry's implementation of measures recommended in guidelines issued by HKAB, namely the *Practical Guideline on Barrier-free Banking Services*, *Guideline on Banking Services for Persons with Intellectual Disabilities* and *Guideline on Banking Services for Persons with Dementia*.

⁵ "Rolling bad apples" are people with a record of misconduct who manage to obtain subsequent employment elsewhere without disclosing their earlier misconduct to the new employer, allowing them to potentially repeat their misbehaviour at another firm.

⁶ Namely HKAB, the Hong Kong Association of Restricted Licence Banks and Deposit-taking Companies and the Hong Kong S.A.R. Licensed Money Lenders Association Ltd.

Priorities for 2022 and Beyond

Deposit protection

The Hong Kong Deposit Protection Board periodically conducts a holistic review of the Deposit Protection Scheme (DPS) to ensure that it remains efficient and effective in serving its public policy objectives. In 2022, the Deposit Protection Board will complete a review of the modalities of the DPS. Annual self-assessments and on-site examinations will continue to ensure that DPS member banks make appropriate representations to depositors in respect of the protection status of deposits. To deepen public understanding of the DPS, the Deposit Protection Board will roll out a multimedia publicity campaign with a new television commercial theme to assure the public of the protection and peace-of-mind provided by the DPS, in addition to social media campaigns focusing on young people.

Future proofing the banking sector

Technology adoption

Technology is increasingly reshaping the way that banking business is carried out. The “All banks go fintech” initiative of the HKMA’s “Fintech 2025” strategy⁷ aims to promote the all-round adoption of fintech by banks in Hong Kong. In support of this initiative, the HKMA rolled out the Tech Baseline Assessment in June 2021 to develop a better understanding of the current fintech landscape in the banking sector, and identify which fintech areas may warrant the HKMA’s support. To this end, all licensed banks with significant operations in Hong Kong were requested to develop a three-year plan for fintech adoption by the end of 2021.

The HKMA is reviewing the banks’ submissions and conducting benchmarking with overseas markets to identify those fintech areas that may not be receiving sufficient attention. The HKMA will consider what policies or measures may be appropriate to support the industry in more actively embracing fintech.

As part of its two-year roadmap to promote Regtech adoption, the HKMA has rolled out a Regtech Knowledge Hub and will promote information and experience sharing within the Regtech ecosystem using this new platform. On the adoption of Suptech, the HKMA will continue its work on building an end-to-end digital supervisory platform. A series of proof-of-concept studies to explore the use of advanced analytics will be undertaken, with a view to improving the forward looking capability of the HKMA’s supervisory processes.

Capacity building in the banking sector

In line with the HKMA’s holistic talent development strategy, “Connecting Talent to the Future”, and building on positive feedback on initiatives launched in 2021, the HKMA will rerun the Future Banking Bridging Programme and university career talks in 2022 to enhance university students’ awareness of the skills and knowledge required by the banking industry, and to showcase career prospects and opportunities in the banking sector, particularly in fintech and green finance. As a further step to connect the younger generation to the banking industry, the HKMA will extend its outreach campaigns to cover secondary schools, and set up a virtual resource centre to provide a one-stop directory for various job types, career paths and training pathways in the banking industry.



HONG KONG MONETARY AUTHORITY
香港金融管理局

香港銀行學會
The Hong Kong Institute of Bankers



The Future Banking Bridging Programme 2021 will be rerun in 2022

⁷ The “Fintech 2025” strategy was unveiled in June 2021 as the HKMA’s new strategy for driving fintech development of Hong Kong.

Priorities for 2022 and Beyond

In addition, the HKMA and the banking industry are joining hands to upskill the existing workforce to ensure they can keep pace with the rapid development of the banking industry. In 2022, the HKMA will roll out a new module on Compliance under the Enhanced Competency Framework (ECF). At the same time, training programmes for the newly launched Fintech ECF module will be rolled out progressively. To drive the upskilling efforts of banks, the HKMA will conduct a new survey on talent development and share key observations and good practices with the industry.

The development of a large and deep talent pool to deliver professional and quality financial services contributes importantly to Hong Kong's competitiveness as an international financial centre.



Enhanced Competency Framework

2016	<input checked="" type="checkbox"/> Anti-Money Laundering and Counter-Financing of Terrorism (core level)
2017	<input checked="" type="checkbox"/> Cybersecurity <input checked="" type="checkbox"/> Treasury Management
2018	<input checked="" type="checkbox"/> Retail Wealth Management <input checked="" type="checkbox"/> Anti-Money Laundering and Counter-Financing of Terrorism (professional level)
2019	<input checked="" type="checkbox"/> Credit Risk Management
2020	<input checked="" type="checkbox"/> Operational Risk Management
2021	<input checked="" type="checkbox"/> Fintech
Upcoming	<input type="checkbox"/> Compliance <input type="checkbox"/> Green and Sustainable Finance

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 2022 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 as a whole, the HKMA will take forward all the initiatives under the multi-faceted "Fintech 2025" strategy. At the same time, the HKMA will continue to facilitate the digitalisation of banks' operations and adoption of Regtech, strengthen its research efforts on wholesale and retail Central Bank Digital Currencies, explore next-generation data infrastructure to enable more efficient financial intermediation, and enhance the fintech talent pool.

To explore the application of new technologies in financial services and facilitate financial innovation, the HKMA will carry on its research into emerging technologies such as federated learning and blockchain, and maintain close collaboration with its strategic partners and key stakeholders both locally and abroad.

Crypto-assets particularly payment-related stablecoins

The HKMA will actively participate in the relevant international discussions, monitor the developments of major markets, and draw up an appropriate regulatory regime in Hong Kong for crypto-assets particularly payment-related stablecoins. In doing so, the HKMA will take into account applicable factors including the feedback received on its *Discussion Paper on Crypto-assets and Stablecoins* released in January 2022.

Priorities for 2022 and Beyond

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

The National 14th Five-Year Plan (2021–2025)⁸, affirms support for Hong Kong to strengthen its status as a global offshore renminbi business hub. To further bolster this status, the HKMA will also continue to engage with Mainland authorities and the financial industry to deepen the liquidity of the offshore renminbi market, promote greater diversity of renminbi products and improve Hong Kong's infrastructure.

To capitalise on the growing preference for renminbi-denominated assets among international investors and the sustainable fund flow that takes place through the various Mainland–Hong Kong Connect schemes, the HKMA will work closely with Mainland authorities to enhance and expand the existing channels. Top priorities include the provision of diversified risk management tools under Northbound Bond Connect, including derivatives such as interest rate swaps, as well as enhancements of the various features of the Cross-boundary WMC.

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, financing and investment activities to Hong Kong. Meanwhile, the HKMA will maintain its efforts to engage with stakeholders to keep abreast of latest market trends and learn about any concerns or suggestions they may have for Hong Kong's financial platforms.

In addition, the HKMA will explore ways to enhance the competitiveness of Hong Kong's financial sector, particularly in developing Hong Kong as an international asset and wealth management hub and a regional destination for corporate treasury centres and fund investment activities. The HKMA will reach out to the industry to promote the setting up of private equity funds in Hong Kong, and improve

the ecosystem to meet market requirements. To boost Hong Kong's attractiveness as a hub for family offices, the HKMA will also continue to collaborate with the Government and industry to take forward the Budget initiative to introduce relevant tax concessions.

Enhancing financial infrastructure

The HKMA will continue to maintain smooth and reliable operation of the various financial infrastructures to strengthen overall resilience and meet international standards. The continued enhancement of financial infrastructure is essential for supporting further market development and bolstering Hong Kong's status as an international financial centre more broadly.

Central Moneymarkets Unit

To help Hong Kong grasp the emerging opportunities from the further opening up of the Mainland financial markets, the Central Moneymarkets Unit (CMU) has reviewed its strategic position and has commenced enhancements on both system and business fronts. Some of the enhancements and services have been launched, like those for Southbound Bond Connect, and the rest would be rolled out by phases over the next few years. The long-term objective is to establish the CMU as a major international central securities depository in Asia.

Faster Payment System

Building on the successful experience of the Faster Payment System (FPS) in the past three years, the HKMA, in collaboration with the industry, will continue to explore more potential use cases to further promote e-payment in Hong Kong. In particular, more work will be done to promote the use of the FPS in merchant payments and business payments. The industry is implementing App-to-App and Web-to-App features to enhance customer experience in making online payments to merchant apps or websites on mobile phones. The HKMA also assists various Government departments, industry organisations, as well as public and private institutions in adopting the FPS for making and receiving payments.

⁸ The Outline of the 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Long-Range Objectives Through the Year 2035, commonly referred to as the National 14th Five-Year Plan.

Priorities for 2022 and Beyond

Based on the successful experience in 2021 and 2022, the HKMA will continue engaging banks and SVFs to encourage the public to give electronic lai sees (e-laisees) via the FPS during Chinese New Year⁹. To continue raising public awareness, the HKMA will launch an online video via different electronic channels to promote the use of the FPS.



Promotion of using the FPS to give out e-laisees during Chinese New Year

Apart from promoting the use of the FPS locally, the HKMA will explore leveraging the FPS' advantages of 24/7 operations and instantaneous payment to enhance efficiency in cross-boundary payments. For example, the FPS may support bank remittance services so that corporate and personal account holders in Hong Kong can receive overseas remittances or remit money to destinations abroad more speedily. Consideration will also be given to linkages with similar faster payment systems in other jurisdictions, thereby allowing Hong Kong people to make payments directly through the FPS at overseas tourist hot spots. Furthermore, in supporting the People's Bank of China on the technical testing of e-CNY for cross-boundary payments in Hong Kong, the possibility of using the FPS to top up e-CNY wallets will be explored.

Subject to market needs, the HKMA may pursue further enhancements of the FPS to facilitate its use for making payments.

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 Securities and Futures Commission, the HKMA will further develop and refine the implementation rules to implement an effective regulatory regime for the OTC derivatives market.

⁹ More information about the electronic lai sees can be found in the *Sustainability* chapter on page 198.

Priorities for 2022 and Beyond

Fostering financial thought leadership in Hong Kong

In 2022, the Hong Kong Academy of Finance (AoF)¹⁰ 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. In particular, the AoF's new flagship Financial Leaders Programme is designed to nurture senior financial leaders to sustain and propel the long-term development of Hong Kong's financial industry. Programme activities for the first cohort will run from April to December 2022.



Financial regulators come together to promote the AoF Financial Leaders Programme

The Hong Kong Institute for Monetary and Financial Research (HKIMR), which carries out AoF's research activity, will continue pursuing applied research and investigating topics relevant for Hong Kong's financial industry and regulators. Notable topics include a study of the impact of climate risk on Hong Kong's financial services industry, and an investigation of the implications of digitalisation of financial services for inclusiveness, sustainability and consumer protection. The HKIMR is also working in partnership with the Alliance for Green Commercial Banks, an initiative co-launched by the HKMA and the International Finance Corporation, to release a thought leadership paper on climate risk measurement, best practices in the financial services industry and regulatory oversight. The HKIMR will keep soliciting and exchanging views with the financial community and key stakeholders to identify relevant topics for future applied research.

International and regional co-operation

With the global environment still subject to notable 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 leadership roles in a number of FSB work priorities, including non-bank financial intermediation, financial innovations and benchmark transition. The HKMA will also actively contribute to other financial stability topics including cybersecurity, cross-border payments and climate-related financial risk.

¹⁰ The AoF is set up with full collaboration amongst the HKMA, the Securities and Futures Commission, the Insurance Authority and the Mandatory Provident Fund Schemes Authority. It brings together the strengths of the academia, the industry, professional training institutes and the regulatory community to develop financial leadership and promote research collaboration.

Priorities for 2022 and Beyond

SUSTAINABILITY

Combatting climate change and promoting sustainability require consistent effort. The HKMA will continue to work with like-minded peers and international organisations on this global agenda. In 2022, 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. Through participation in international and regional forums, the HKMA will also contribute to promoting the developments and best practices in green and sustainable finance more broadly.

Green and sustainable banking

The HKMA will step up its efforts to promote green and sustainable banking, including working with banks to understand their progress in implementing the supervisory requirements on climate risk management. The HKMA aims to review and revamp the common assessment framework on “greenness baseline” of banks within 2022¹¹. The HKMA is also working with other financial regulators to explore developing a local green classification framework.

The HKMA will develop a new module on Green and Sustainable Finance under the ECF to cater for the strong demand for green and sustainable finance knowledge and skill sets in the banking industry.

Hong Kong as a hub for green and sustainable finance

To promote Hong Kong’s green and sustainable finance market, the HKMA will continue to assist the Government in future green bond issuances under the Government Green Bond Programme (GGBP), and attract more green financing activities to Hong Kong through the Green and Sustainable Finance Grant Scheme. The HKMA will also continue to encourage more Mainland participants to raise their green funding through Hong Kong, explore the synergy between green finance and technology, and actively collaborate with other agencies under the Green and Sustainable Finance Cross-Agency Steering Group¹² to co-ordinate on cross-sectoral issues including capacity building, green and sustainable finance data, taxonomies, climate-related disclosures and sustainability reporting, as well as carbon market opportunities.

The Alliance for Green Commercial Banks

Through the Alliance for Green Commercial Banks¹³, the HKMA and International Finance Corporation will jointly launch targeted initiatives in the Asia region to undertake green finance research, provide unique market insights, tailor capacity building and training support, and provide practical guidance for banks in order to help the banks develop their own roadmap to mainstream green finance as their core business.

Looking ahead, the Alliance will work closely with its Cornerstone Members, as well as the Global and Knowledge Partners to (i) develop the membership programme¹⁴ first in Hong Kong and then in Asia; (ii) step up its efforts in promoting capacity building efforts and knowledge sharing; and (iii) spearhead thought leadership initiatives. The Alliance will serve as a platform to incubate and promote green investment and business.

¹¹ More information about the common assessment framework on “greenness baseline” of banks can be found in the *Sustainability* chapter on page 177.

¹² More information on the Green and Sustainable Finance Cross-Agency Steering Group can be found in the *Sustainability* chapter on page 180.

¹³ More information on the Alliance for Green Commercial Banks can be found in the *Sustainability* chapter on pages 181 to 182.

¹⁴ More details about the Alliance’s membership structure are available on its website www.allianceforgreencommercialbanks.org.

Priorities for 2022 and Beyond

**CEO Talk: Opportunities for Green Bank Transformation
Alliance Roundtable I**
April 27, 2021

**Alliance Roundtable II
CEO Talk: BUILDING a Green Future**
July 14, 2021

**Alliance Roundtable II
Practitioner Talk: BUILDING a Green Future**
July 21, 2021

**Alliance Roundtable III
Climate Risk in Action: A Conversation with Practitioners**
November 16, 2021

The Alliance for Green Commercial Banks hosts knowledge sharing events

Responsible investment

As the manager of the Exchange Fund, the HKMA will further advance on its responsible investment journey through incorporating environmental, social and governance factors into investment processes and continuously contributing to international efforts that facilitate green and sustainable finance development. Further to making the inaugural disclosures on climate scenario analysis and carbon footprint metrics of the Exchange Fund's portfolios, the HKMA will progress towards aligning its disclosures with recommendations of the Taskforce on Climate-related Financial Disclosures no later than 2025.

Sustainable HKMA

In fulfilling its role as a sustainable organisation, the HKMA plans to draw up a sustainability roadmap, covering its strategic directions, key initiatives and performance targets where appropriate. Efforts will be underpinned by the three pillars of environment, people and social responsibility. First, the HKMA will step up its own green office initiatives including implementation of energy-saving and waste management plans. Secondly, the HKMA will continue to safeguard health and safety of its staff while ensuring the continued delivery of its public services. Thirdly, the HKMA will maintain emphasis on corporate social responsibility through continual participation in community services, as well as embedding sustainability considerations in its procurement of goods and services, including by adopting the Government green procurement initiatives. Meanwhile, efforts in promoting financial inclusion and financial literacy will continue, including working with the banking industry to make banking services more accessible to different segments of the community.



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 pages 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 2021 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 offices.

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



Advisory Committees

Chairman

1 June 2022



The Honourable Paul CHAN Mo-po, 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, GBS, JP
President
Asia Financial Holdings Limited



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



Ms Agnes CHAN Sui-kuen
Managing Partner, Hong Kong and Macau
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**

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
(from 15 March 2021)

**Professor TAM Kar-yan, MH, JP**

Dean and Chair Professor, School of Business and Management
The Hong Kong University of Science and Technology
(from 11 October 2021)

**Mr Raymund CHAO Pak-ki**

Chairman of PwC Asia Pacific
Chairman & CEO of PwC China
(from 29 October 2021)

Advisory Committees



Dr the Honourable Victor FUNG Kwok-king, GBM, GBS
Chairman
Fung Group
(from 29 October 2021)



Mr David LIAO Yi-chien
Group Executive, HSBC Group
Co-Chief Executive, Asia-Pacific
The Hongkong and Shanghai Banking Corporation Limited
(from 29 October 2021)



Mr Peter WONG Tung-shun, GBS, JP
Chairman
The Hongkong and Shanghai Banking Corporation Limited
(until 6 June 2021)



Dr Silas YANG Siu-shun, JP
(until 31 August 2021)



Dr Anthony CHOW Wing-kin, SBS, JP
Senior Consultant
Guantao & Chow Solicitors and Notaries
(until 30 September 2021)



Dr David WONG Yau-kar, GBS, JP
(until 31 October 2021)



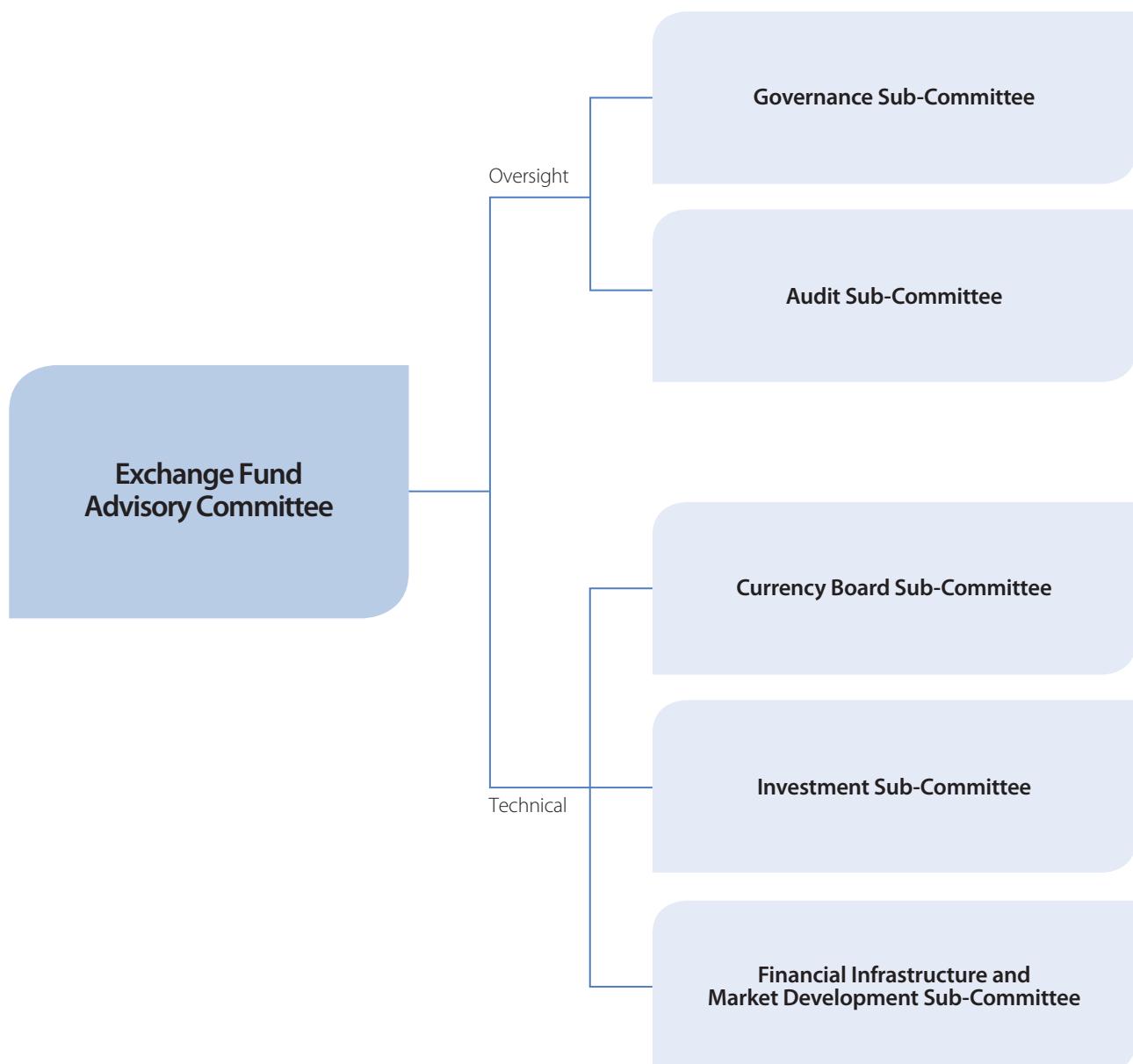
Dr the Honourable Moses CHENG Mo-chi, GBM, GBS, JP
Consultant
P. C. Woo & Co.
(until 31 January 2022)

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 2021 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

Managing Partner, Hong Kong and Macau
Ernst & Young

Mr Stephen YIU Kin-wah

Chairman
Insurance Authority

Mrs Ayesha MACPHERSON LAU, BBS, JP

Chairman
Mandatory Provident Fund Schemes Authority

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Chairman & CEO of PwC China
(from 29 October 2021)

Dr Anthony CHOW Wing-kin, SBS, JP

Senior Consultant
Guantao & Chow Solicitors and Notaries
(until 30 September 2021)

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

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
(from 11 October 2021)

Dr the Honourable Victor FUNG Kwok-king, GBM, GBS

Chairman
Fung Group
(from 29 October 2021)

Dr David WONG Yau-kar, GBS, JP

(until 31 October 2021)

Secretary

Ms Sarah KWOK

Advisory Committees

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 2021 and received reports on the work of the Risk Committee and the Internal Audit Division.

Chairman

Mr Stephen YIU Kin-wah

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

Managing Partner, Hong Kong and Macau

Ernst & Young

Mr Raymund CHAO Pak-ki

Chairman of PwC Asia Pacific

Chairman & CEO of PwC China

(from 29 October 2021)

Dr Silas YANG Siu-shun, JP

(until 31 August 2021)

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 2021, 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

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

Professor LIN Chen
Chair of Finance and Stelux Professor in Finance
Faculty of Business and Economics, The University of Hong Kong

Professor Heiwei TANG
Associate Director, Asia Global Institute
Professor of Economics, HKU Business School
(from 15 September 2021)

Professor CHEUNG Yin-wong
(until 31 August 2021)

Ms Diana CESAR
Chairperson
The Hong Kong Association of Banks
(from 1 January 2021 to 31 August 2021)

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

Dr John GREENWOOD, SBS
Fellow at the Johns Hopkins Institute for Applied Economics, Global Health,
and the Study of Business Enterprise

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

Mrs Helen CHAN, SBS, JP

Ms Mary HUEN Wai-yi
Chairperson
The Hong Kong Association of Banks
(from 1 January 2022)

Dr David WONG Yau-kar, GBS, JP
(until 31 October 2021)

Ms Luanne LIM
Chairperson
The Hong Kong Association of Banks
(from 1 September 2021 to 31 December 2021)

Secretary

Ms Sarah KWOK

Advisory Committees

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 2021.

Chairman

Mr Eddie YUE, JP
The Monetary Authority

Members

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

Mr Stephen YIU Kin-wah
Chairman
Insurance Authority

Mr Raymund CHAO Pak-ki
Chairman of PwC Asia Pacific
Chairman & CEO of PwC China
(from 29 October 2021)

Dr Silas YANG Siu-shun, JP
(until 31 August 2021)

Dr David WONG Yau-kar, GBS, JP
(until 31 October 2021)

Mr Nicky LO Kar-chun, SBS, JP

Professor TAM Kar-yan, MH, JP
Dean and Chair Professor, School of Business and Management
The Hong Kong University of Science and Technology
(from 11 October 2021)

Dr the Honourable Victor FUNG Kwok-king, GBM, GBS
Chairman
Fung Group
(from 29 October 2021)

Dr Anthony CHOW Wing-kin, SBS, JP
Senior Consultant
Guantao & Chow Solicitors and Notaries
(until 30 September 2021)

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 2021, 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

The Honourable Bernard Charnwut CHAN, GBM, GBS, JP

President
Asia Financial Holdings Limited

Mr Leong CHEUNG

Executive Director, Charities and Community
The Hong Kong Jockey Club

Mrs Ann KUNG YEUNG Yun-chi, JP

Deputy Chief Executive
Bank of China (Hong Kong) Limited

Ms Amy LO Choi-wan

Co-Head UBS Wealth Management APAC
Head and Chief Executive UBS Hong Kong Branch
UBS

Mr Howard LEE, JP

Deputy Chief Executive
Hong Kong Monetary Authority

Mrs Ayesha MACPHERSON LAU, BBS, JP

Chairman
Mandatory Provident Fund Schemes Authority

Mr Ericson CHAN

Group Chief Information & Digital Officer
Zurich Insurance

Ms Mary HUEN Wai-yi

Executive Director and Chief Executive Officer, Hong Kong
Cluster Chief Executive Officer (Hong Kong, Taiwan & Macau)
Standard Chartered Bank (Hong Kong) Limited

Ms Miranda KWOK Pui-fong

Non-Executive Director
China Construction Bank (Asia) Corporation Limited

Mr Dennis CHOW Chi-in

Chairman
Deloitte China

Advisory Committees

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

Mr CHEN Shuang, JP
Founding & Managing Partner
APlus Partners Management Co., Limited

Mr Jim LAI
Vice President of Tencent
Chairman of Fusion Bank

Ms Helen WONG Pik-kuen, JP
Group Chief Executive Officer
OCBC Bank
(until 31 July 2021)

Professor Kalok CHAN
Wei Lun Professor of Finance
Chairman, Department of Finance
The Chinese University of Hong Kong Business School
(until 30 September 2021)

Ms Jacqueline LEUNG, JP
President & Managing Director
Leighton Textiles Co., Ltd.
Leighton Investments Ltd.
(until 31 December 2021)

Ms Angel NG Yin-yeo
Chief Executive Officer, Citi Hong Kong & Macau and
Head of Asia Pacific, Global Wealth Management

Ms Diana CESAR
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
(from 11 October 2021)

Mr Joseph NGAI, JP
Senior Partner and Managing Partner, Greater China
McKinsey & Company, Inc. Hong Kong
(until 30 September 2021)

Mr Jack CHEUNG Tai-keung
Chief Executive Officer
Treasury Markets Association
(until 30 November 2021)

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 2021.

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, 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
(from 1 September 2021)

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

Ms KWANG Kam-shing
Chief Executive Officer
Asia Private Bank
JPMorgan Chase Bank, N.A.

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

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

Ms Diana CESAR
Group General Manager
Chief Executive, Hong Kong
The Hongkong and Shanghai Banking Corporation Limited
Representing The Hongkong and Shanghai Banking Corporation Limited
(until 31 August 2021)

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 a 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 2021.

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, 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 Andy POON Shiu-chung
Chief Executive Officer
First Abu Dhabi Bank Hong Kong Branch
(Former Chief Executive of Scotiabank (Hong Kong) Limited)

Mr Jack CHAN Hoi
Chairman, China
Regional Managing Partner, Greater China
Ernst & Young

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

Secretary

Ms Jasmin FUNG

Chief Executive's Committee

1 June 2022

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



Edmond LAU, JP
Deputy Chief Executive
(from 1 April 2021)
Senior Executive Director
(until 31 March 2021)



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

Chief Executive's Committee



Stefan GANNON, JP
Special Adviser to CE
(from 5 October 2021)
Commissioner, Resolution Office
(until 4 October 2021)



Francis CHU, JP
Deputy Chief Executive Officer
(Exchange Fund Investment Office)



Karen KEMP, JP
General Counsel



Carmen CHU, JP
Executive Director
(Enforcement and AML)



Darryl CHAN, JP
Executive Director
(External)



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

Chief Executive's Committee



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)

Chief Executive's Committee



Donald CHEN

Executive Director
(Corporate Services)
(from 1 November 2021)



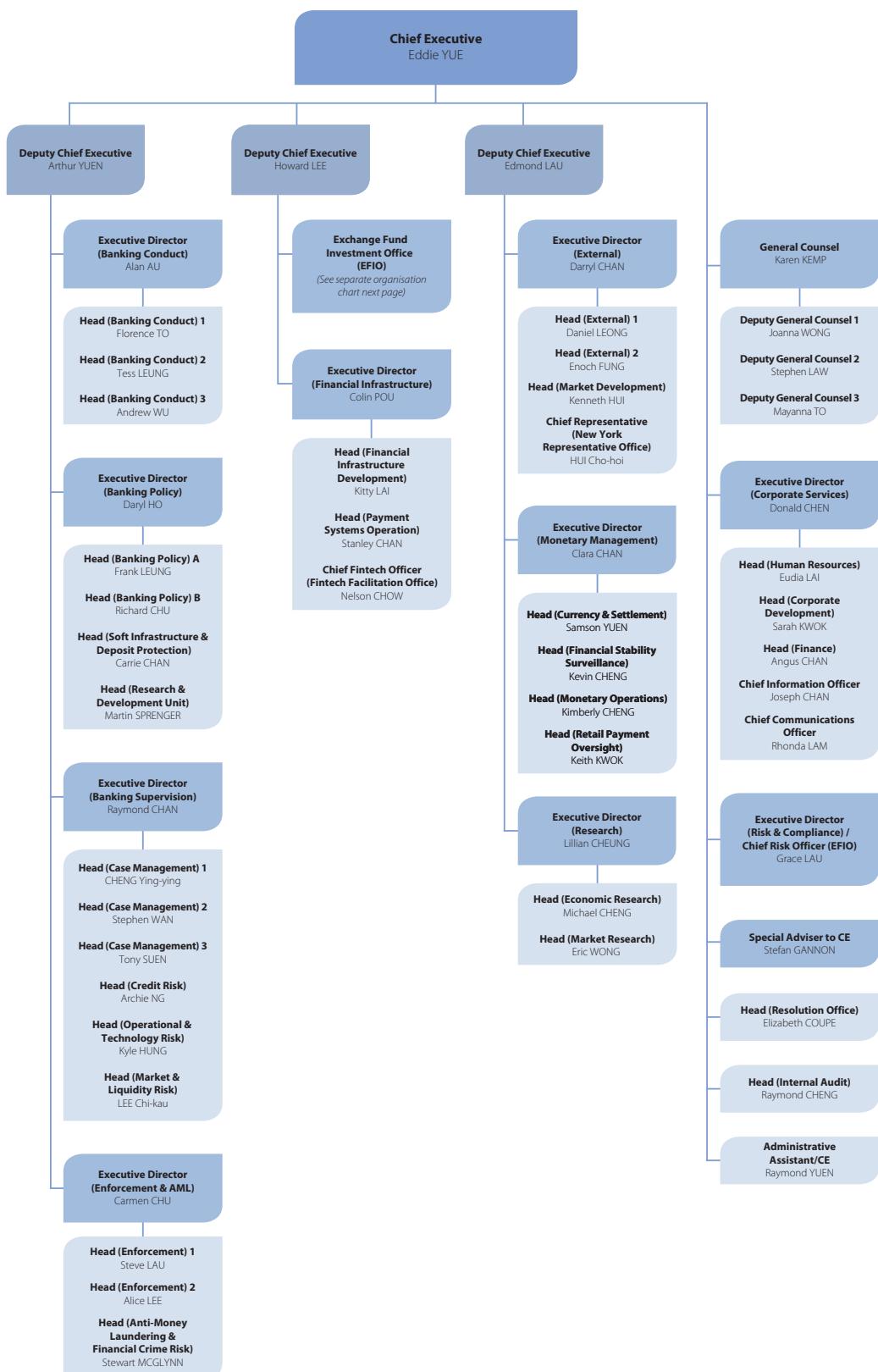
Linda SO

Executive Director
(Corporate Services)
(until 31 October 2021)

Organisation Chart

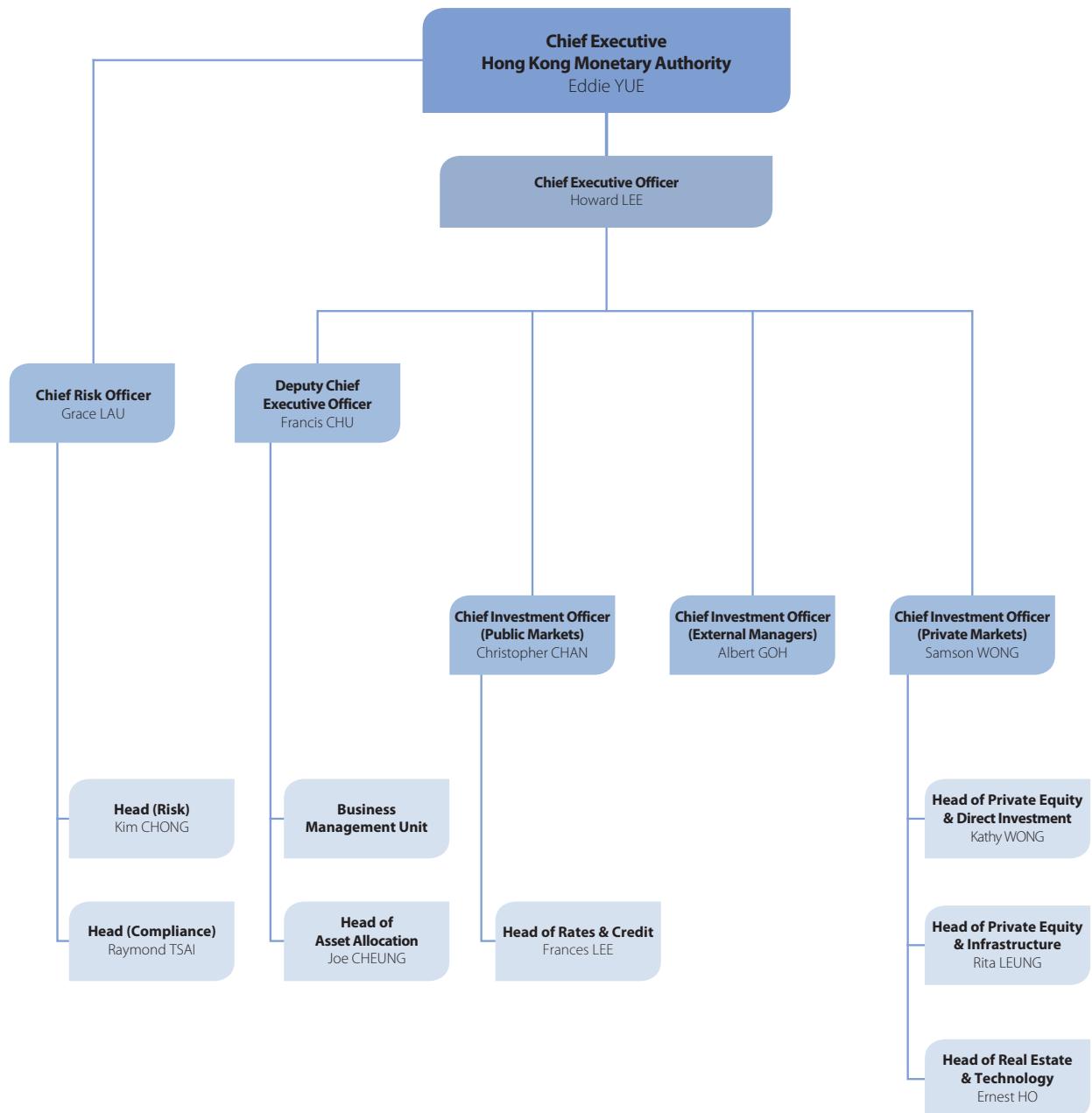
HONG KONG MONETARY AUTHORITY

1 June 2022



Organisation Chart

EXCHANGE FUND INVESTMENT OFFICE



Economic and Financial Environment

With strong merchandise exports, reviving domestic demand and a boost from the Government's supportive policy measures, the Hong Kong economy resumed positive growth in 2021, reversing the contraction experienced during 2019 and 2020. The labour market also improved, and inflation remained moderate albeit having edged up. While economic recovery is expected to continue after the fifth wave of COVID-19 subsides, its strength and speed are subject to uncertainties and risks, especially those surrounding the pandemic and the path of US monetary policy normalisation.



Economic and Financial Environment

THE ECONOMY IN REVIEW

Real activities

Driven by strong merchandise exports and improving domestic demand, the Hong Kong economy grew by 6.3% in 2021, ending the economic contraction in 2019 and 2020 (Table 1 and Chart 1). Private consumption recovered, thanks to improved labour market conditions and a boost from the Government's Consumption Voucher Scheme¹. Overall investment spending also rebounded as the business environment and outlook improved². Externally, Hong

Kong's exports of goods saw strong growth for the whole year, in part supported by the continued global economic recovery. Export of services recorded modest growth, reflecting active regional trade and cargo flows as well as stronger cross-border business and financial activities. Total imports rose appreciably, mainly because of greater domestic and re-export-induced demand. On a net basis, external trade contributed positively to real gross domestic product (GDP) growth in 2021 (Chart 1) as total exports grew faster than imports.

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

(% Period-over-period, unless otherwise specified)	2021					2020				
	Q1	Q2	Q3	Q4	2021	Q1	Q2	Q3	Q4	2020
Gross Domestic Product	5.8	(1.7)	0.7	0.0	6.3	(5.1)	(1.2)	2.7	0.6	(6.5)
(year-on-year growth)	8.0	7.6	5.4	4.7		(9.3)	(9.4)	(4.1)	(3.6)	
Private consumption expenditure	1.5	1.7	1.2	0.7	5.4	(8.1)	(3.0)	2.1	1.9	(10.5)
Government consumption expenditure	2.7	(0.9)	2.0	0.4	4.6	2.8	2.1	(0.1)	1.3	7.9
Gross domestic fixed capital formation	–	–	–	–	9.8	–	–	–	–	(11.5)
Exports										
Exports of goods	11.2	(1.2)	(0.1)	3.1	18.9	(9.7)	7.3	5.4	3.6	(1.4)
Exports of services	12.6	(5.4)	1.4	(1.3)	1.5	(11.5)	(16.4)	0.2	(2.5)	(34.8)
Imports										
Imports of goods	7.2	1.7	1.0	(0.4)	17.4	(6.2)	3.2	5.3	5.7	(3.2)
Imports of services	2.8	(1.5)	1.7	1.3	1.7	(20.0)	(21.5)	6.9	2.7	(32.2)

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 In response to the lingering pandemic, the Government introduced additional countercyclical fiscal measures in the 2021–22 Budget to support the economy. These measures include the distribution of electronic consumption vouchers worth HK\$5,000 to each eligible resident and the Special 100% Loan Guarantee Scheme for unemployed individuals.

² The HKMA has co-ordinated with the banking sector to extend the Pre-approved Principal Payment Holiday Scheme several times to ease cash-flow pressures of some corporate customers.

Economic and Financial Environment

Chart 1 Real GDP growth by contribution

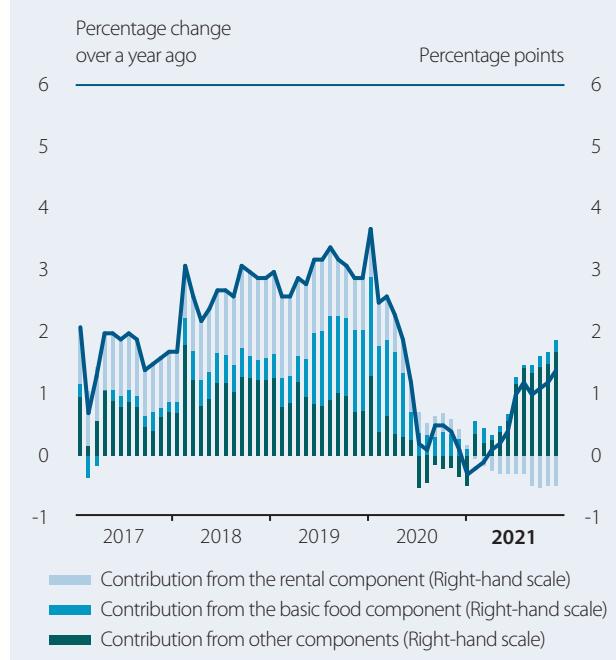


Inflation

Inflationary pressures edged up but remained moderate during the year. Netting out the effects of the Government's one-off relief measures, the year-on-year underlying inflation rate³ picked up gradually to a mild 1.4% in December (Chart 2)⁴. Prices of consumer items such as dining out, transport, clothing and footwear regained upward momentum as local consumption demand improved. Import prices also increased notably alongside bottlenecks in global supply chains and the surge in international energy

and commodity prices. By contrast, the housing component was a drag on overall inflation, reflecting the feed-through of the earlier decline in fresh-letting private residential rentals (Chart 2). More broadly, slow growth in nominal wage and commercial rentals helped keep domestic business cost pressures in check. For 2021 as a whole, the underlying and headline inflation rates⁵ stayed mild at 0.6% and 1.6% respectively.

Chart 2 Underlying consumer price inflation



³ The underlying inflation rate is the change in Composite Consumer Price Index after netting out the effects of all Government's one-off relief measures.

⁴ Inclusive of the effects of the Government's relevant one-off relief measures, the headline inflation rate also generally increased from 1.2% in the first quarter to 2.0% in the fourth quarter.

⁵ Headline inflation rate is the raw inflation figure reported through the Composite Consumer Price Index which is compiled by the Census and Statistics Department.

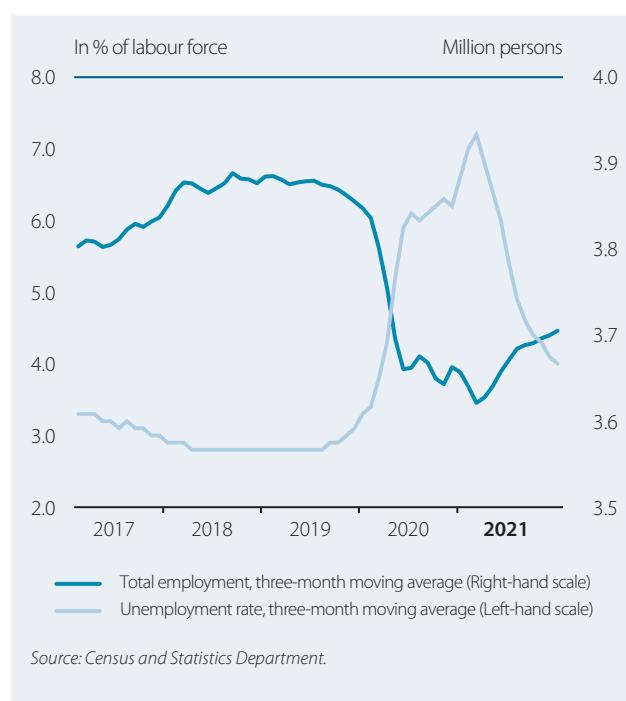
Economic and Financial Environment

Labour market

Alongside the domestic economic recovery, the labour market improved in 2021. After reaching a 17-year high of 7.2% in February, the unemployment rate declined visibly to 4.0% in December⁶ (Chart 3) and the decline was broad based across most economic sectors. Overall labour demand strengthened gradually as reflected by a pick-up in total employment (Chart 3) and private sector vacancies, though they were still below their pre-pandemic peaks. On the other hand, the labour force shrank slightly by 1.3% in December compared with a year earlier, partly due to a modest decline in the labour force participation rate.

The year-on-year growth in nominal wage and labour earnings, while moderate, showed signs of acceleration in the first three quarters of 2021, reversing the trend of deceleration during 2019–2020.

Chart 3 Labour market conditions



Stock market

The local stock market was broadly sluggish during the year, despite a continued rally in some major overseas equity markets (Chart 4). Extending its rebound in late 2020, the Hang Seng Index rose to a high of 31,085 on 17 February 2021, but market sentiment had turned sharply negative since then owing to a host of factors, including concerns about the new COVID-19 virus variants, potential monetary policy tightening by major central banks and reduced inflows from southbound trading under Stock Connect⁷. The Hang Seng Index closed the year at 23,398, down markedly by 14.1% from a year ago.

Chart 4 Asset prices



⁶ The underemployment rate also declined from a peak of 3.9% in February to 1.7% in December 2021.

⁷ Including Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect.

Economic and Financial Environment

Property market

The residential property market regained some upward momentum in the first half of 2021 alongside better economic prospects, but saw some consolidation in the second half amid weakened asset market sentiments (Chart 4). Overall, housing prices and transaction volume still recorded an increase of 3.7% and 24.1% respectively in 2021. Household affordability also became even more stretched, partly reflecting reduced household income. On the other hand, after going through sharp corrections in 2019 and 2020, the non-residential property markets generally improved, with prices and rentals of industrial properties generally rising to their pre-pandemic peaks, whereas those of retail and office spaces remained below their respective peaks.

See *Table B: Major Economic Indicators* on pages 326 to 327 for more details, including their trends during 2017–2021.

OUTLOOK FOR THE ECONOMY

Economic environment

In early 2022, the fifth wave of local COVID-19 infections has exerted pressures on domestic economic activities. In response, the Government introduced the fifth and the sixth rounds of the Anti-epidemic Fund and additional countercyclical measures under the 2022–23 Budget to help support the economy. The HKMA, together with the banking sector, also extended the Pre-approved Principal Payment Holiday Scheme to the end of October 2022.

For 2022 as a whole, economic recovery is expected to continue, albeit at a more moderate pace compared to 2021, partly reflecting the impact of the fifth wave of COVID-19, slower global economic growth, a less favourable base effect and US monetary policy normalisation. The Government forecasts real GDP growth for 2022 to be in the range of 1–2% and the latest growth estimates by international organisations and private sector analysts averaged 1.1%. That said, the strength and pace of the recovery are subject to a host of uncertainties and risks, especially those surrounding the pandemic, the Ukraine situation, and the path of US monetary policy normalisation.

Inflation and the labour market

Alongside rising import prices and pandemic-induced logistics disruptions, inflationary pressures are expected to edge up in the near term, but should stay broadly in check owing to soft rentals and mild local labour cost pressures. Market consensus forecasts a headline inflation rate of 2.4% in 2022, while the Government projects the headline and underlying inflation rates to be 2.1% and 2.0% respectively. The fifth wave of local COVID-19 infections has exerted pressures on the labour market in early 2022, especially for contact-intensive sectors. Further out, labour market conditions will depend on the pandemic developments and the pace of the domestic economic recovery.

Economic and Financial Environment

PERFORMANCE OF THE BANKING SECTOR

The Hong Kong banking sector continued to be stable in 2021. Total banking assets expanded moderately as both loans and deposits increased. The capital and liquidity positions of the banking sector remained robust. Asset quality stayed at a healthy level by both historical and international standards.

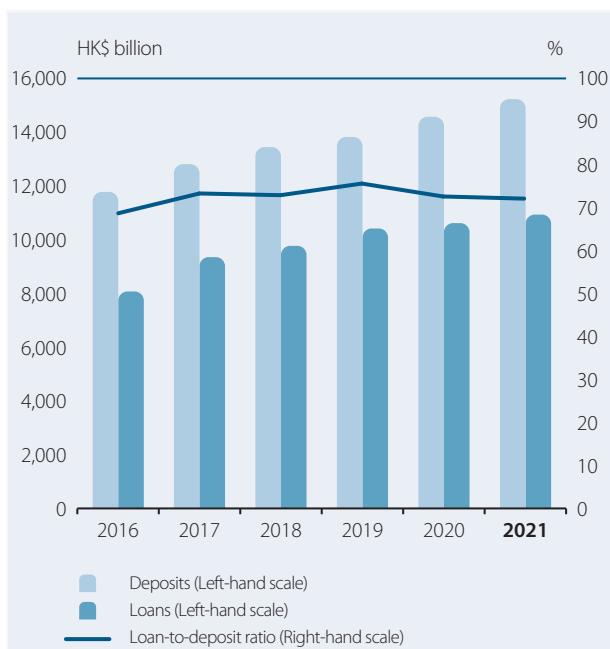
Balance sheet trends

The banking sector's balance sheet grew by 1.9% in 2021. Driven by the economic recovery, total loans recorded a growth of 3.8% during the year, compared with 1.2% in 2020. Among the total, loans for use in Hong Kong grew by 4.4%, loans for use outside Hong Kong grew by 1.1% and trade finance increased by 14.2%. Mainland-related lending expanded by 3.6% in 2021, after remaining largely stable in 2020.

On the liability side, total deposits rose by 4.6% in 2021, compared with 5.4% in 2020. As total deposits increased at a faster pace than total loans, the overall loan-to-deposit ratio edged down to 71.8% at the end of 2021 from 72.3% a year ago (Chart 5).

Chart 5

Loans and deposits of the banking sector



Source: HKMA.

Economic and Financial Environment

Capital adequacy

The banking sector remained well capitalised.

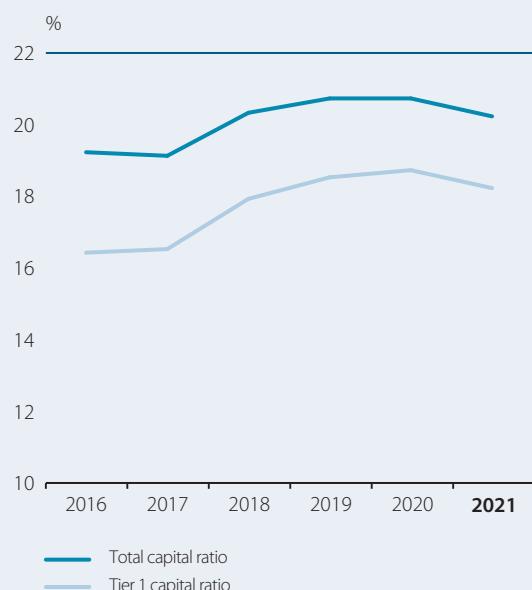
The consolidated total capital ratio of locally incorporated authorized institutions (AIs) stood at 20.2% at the end of 2021. The Tier 1 capital ratio was 18.2% (Chart 6).

Both ratios were well above their respective international minimum requirements of 8% and 6%.

The Basel III leverage ratio was 7.9% at the end of 2021, well above the statutory minimum requirement of 3% (Chart 7).

Chart 6

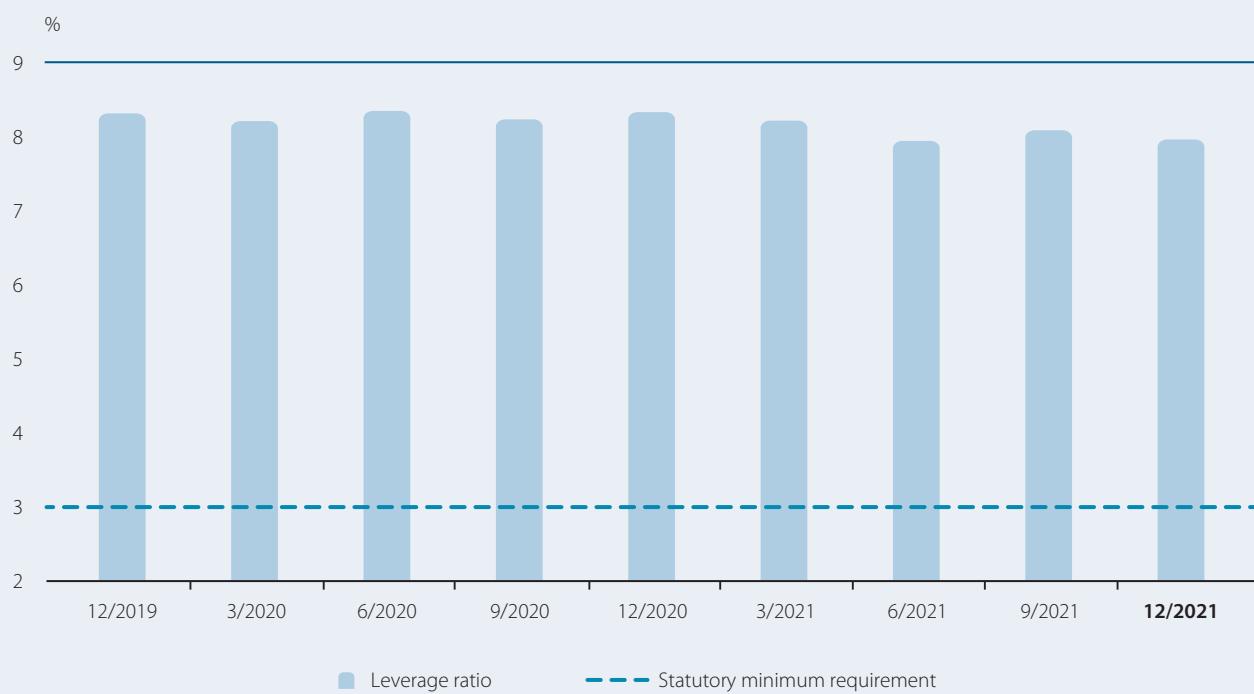
Consolidated capital ratios of locally incorporated AIs



Source: HKMA.

Chart 7

Consolidated leverage ratio of locally incorporated AIs



Source: HKMA.

Economic and Financial Environment

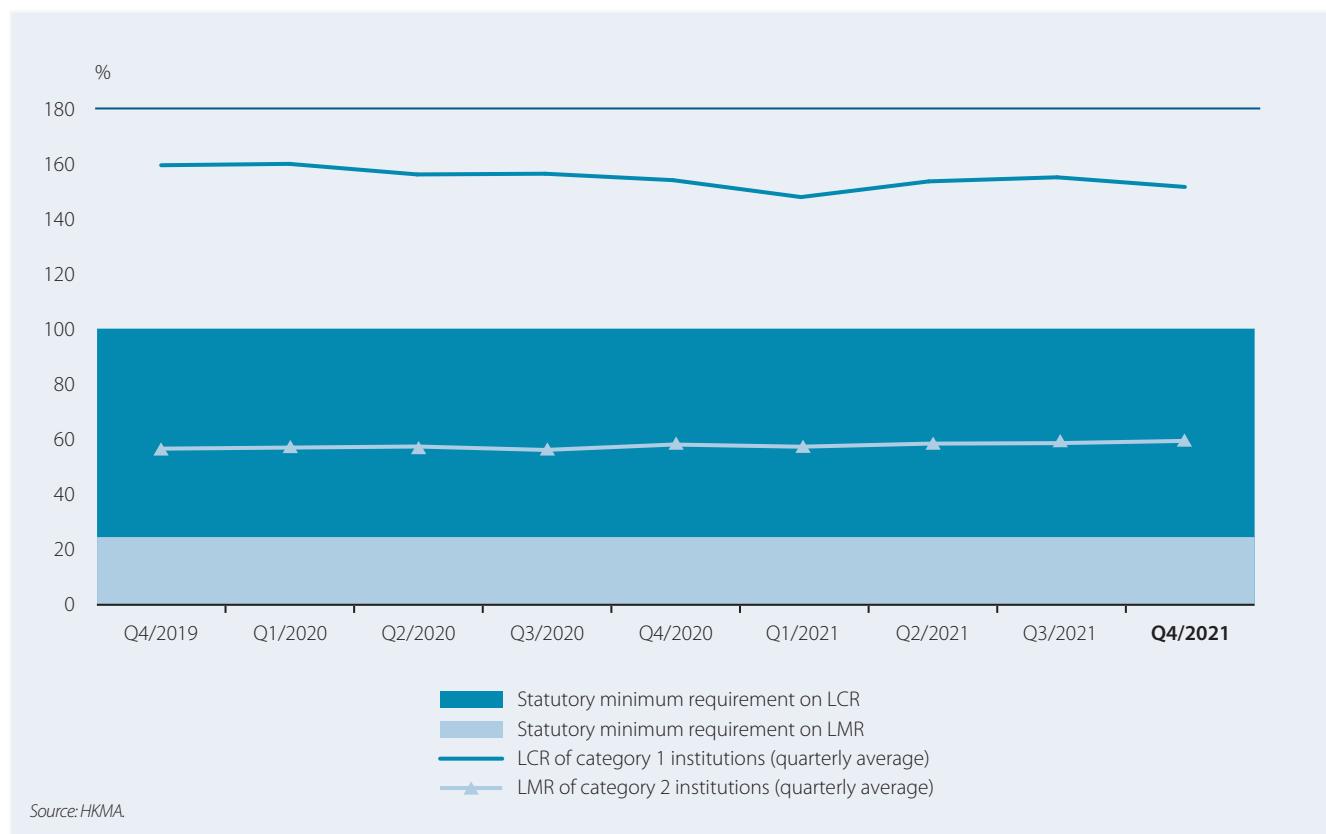
Liquidity

The liquidity position of the banking sector was sound. The quarterly average Liquidity Coverage Ratio (LCR) of category 1 institutions⁸ was 151.9% in the fourth quarter of 2021, well

above the statutory minimum requirement of 100%.

The quarterly average Liquidity Maintenance Ratio (LMR) of category 2 institutions was 59.1%, also well above the statutory minimum requirement of 25% (Chart 8).

Chart 8 Liquidity ratios of designated AIs



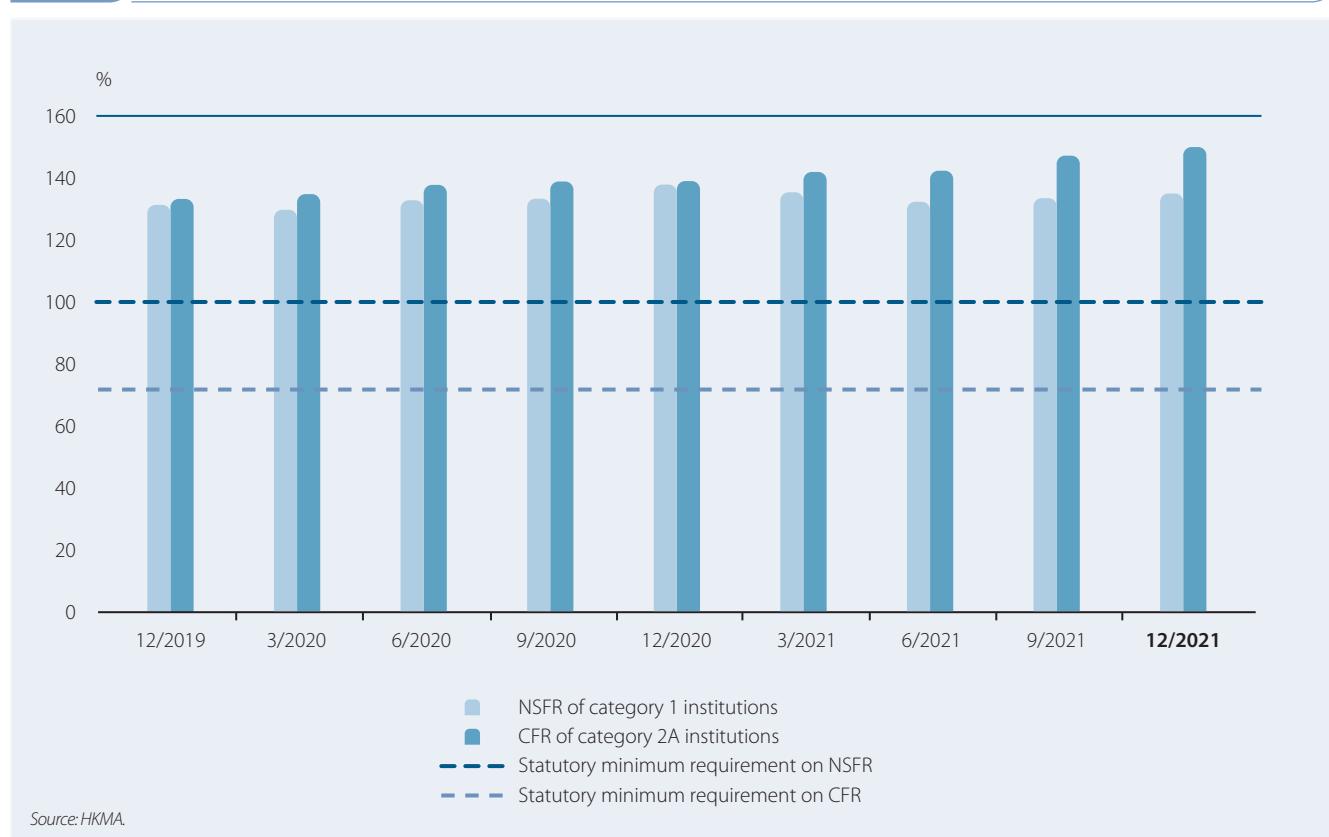
⁸ Usually, category 1 institutions are defined as either having significant international exposures or being significant to the general stability of the local banking sector given their size or complexity of business operations. Other AIs are regarded as category 2 institutions.

Economic and Financial Environment

The sources of funding of the banking sector remained stable. The Net Stable Funding Ratio (NSFR) of category 1 institutions was 135.3% at the end of 2021, well above the statutory minimum requirement of 100%. The Core Funding

Ratio (CFR) of category 2A institutions⁹ was 150.3% at the end of 2021, also well above the statutory minimum requirement of 75% (Chart 9).

Chart 9 **Funding ratios of designated AIs**



Source: HKMA.

⁹ The designation of category 2A institutions are based on the business size and the liquidity risk associated with the institution.

Economic and Financial Environment

Asset quality

Asset quality remained stable during the year and stayed at a healthy level by both historical and international standards.

The classified loan ratio was 0.88% at the end of 2021 as compared to 0.90% at the end of 2020, with the overdue and rescheduled loan ratio edging down to 0.56% from 0.57% during the period (Chart 10). The classified loan ratio for Mainland-related lending was 0.86% at the end of 2021 as compared to 0.96% at the end of 2020. The delinquency ratios of residential mortgage lending and credit card lending remained low at 0.04% and 0.20% respectively (Chart 11).

The HKMA will continue to closely monitor the change in the asset quality of the banking sector.

Chart 10 Asset quality of the banking sector

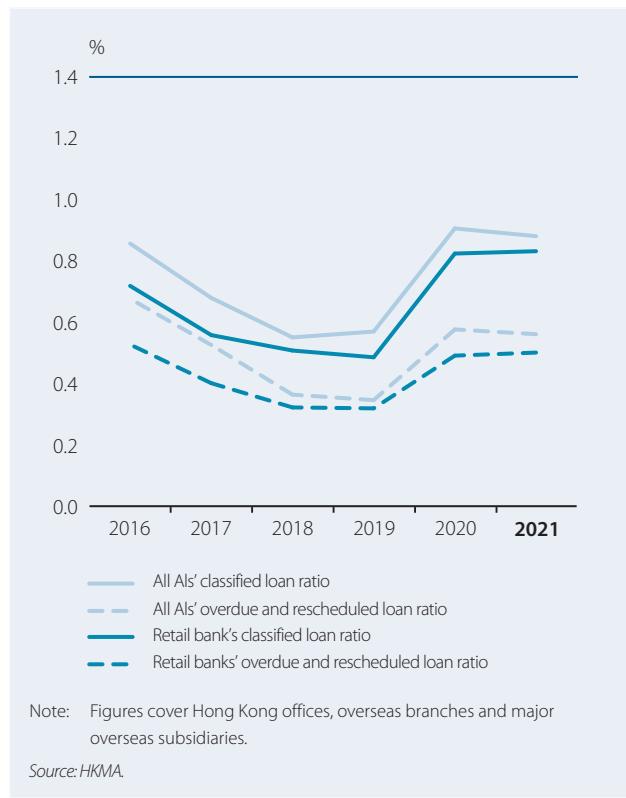
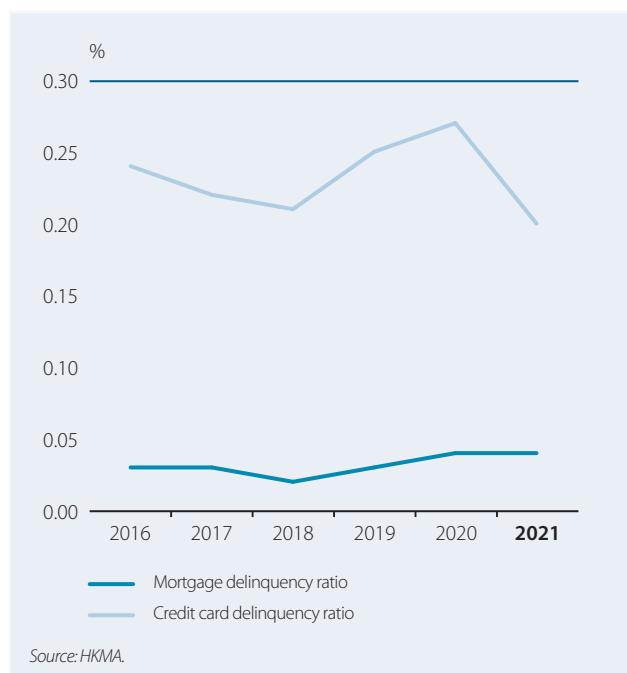


Chart 11

Delinquency ratios of residential mortgages and credit card lending



Economic and Financial Environment

Profitability trends

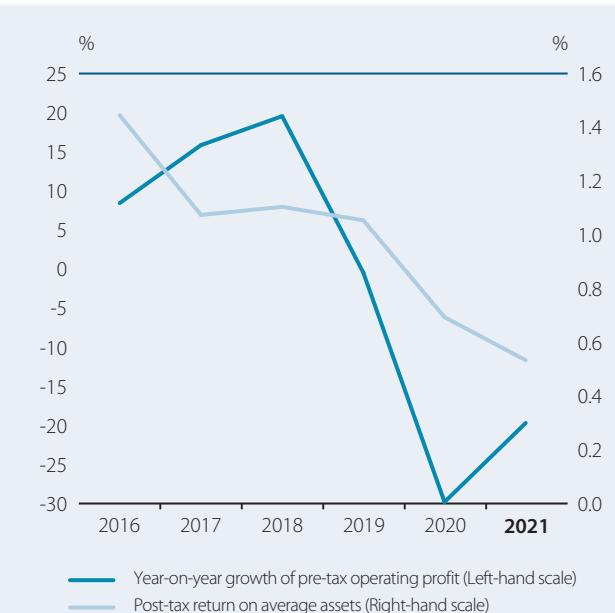
The low interest rate environment continued to weigh on the profitability of the banking sector. The aggregate pre-tax operating profit of retail banks declined by 19.8% in 2021 (Chart 12), mainly attributable to a decrease in net interest income (-13.6%) and an increase in total operating expenses (+7.1%). These were partly offset by an increase in income from fees and commissions (+9.6%) and a drop in loan impairment charges (-25.1%). The net interest margin further narrowed to 0.98% in 2021 from 1.18% in 2020 (Chart 13).

Retail banks' cost-to-income ratio rose to 54.7% in 2021 from 47.0% in 2020 (Chart 14).

More information about the performance and financial positions of all AIs can be found in Tables C, and G to M on pages 328 to 329, and 334 to 342 respectively.

Chart 12

Retail banks' performance



Source: HKMA.

Economic and Financial Environment

Chart 13 Retail banks' net interest margin

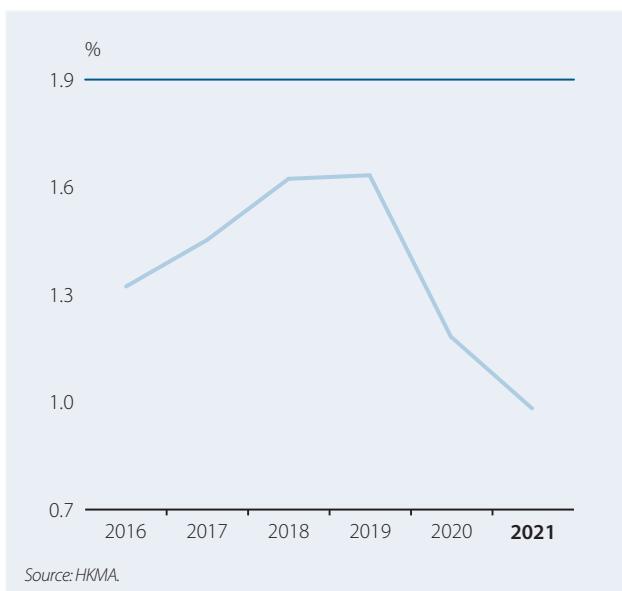
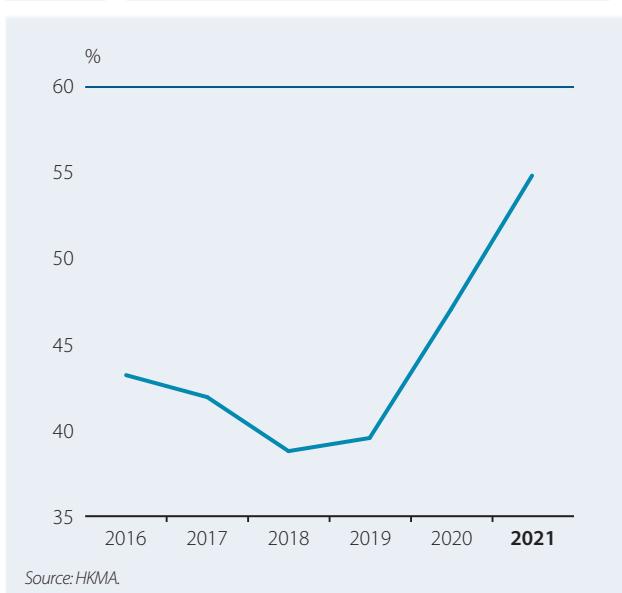


Chart 14 Retail banks' cost-to-income ratio



Monetary Stability

Despite the lingering uncertainties surrounding the COVID-19 pandemic and increased concerns about the pace of US monetary tightening, the Hong Kong dollar exchange and money markets continued to trade in a smooth and orderly manner. As the cornerstone of Hong Kong's monetary and financial stability since it was implemented in 1983, the Linked Exchange Rate System has shown its strength and resilience to external shocks.



Monetary Stability

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 2021	31 December 2020
Certificates of Indebtedness ^a	592,645	559,515
Government-issued currency notes and coins in circulation ^a	13,132	12,920
Balance of the banking system ^b	377,516	457,466
EFBNs issued ^c	1,148,769	1,069,180
TOTAL	2,132,062	2,099,081

- 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 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

7.75 (or 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 that would help move the Hong Kong dollar back to within the Convertibility Zone of 7.75 to 7.85.

Monetary Stability

REVIEW OF 2021

Exchange rate stability

Driven by equity-related demand arising from fundraising activities and the southbound Stock Connects¹, the Hong Kong dollar traded close to the strong-side CU at the beginning of the year. Thereafter, the Hong Kong dollar weakened amid stock market correction and repatriation of initial public offering (IPO) proceeds by some newly listed

firms before rebounding slightly in the second quarter due to corporates' dividend payment needs and net inflows from the southbound Stock Connects. Stepping into the second half of the year, while the Hong Kong dollar drifted lower amid softened equity market sentiment, it stayed mostly at the strong side of the Convertibility Zone and continued to trade in a smooth and orderly manner (Chart 1). Overall, the Hong Kong dollar exchange market functioned normally throughout 2021.

Chart 1 Market exchange rate in 2021



¹ Including Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect.

Monetary Stability

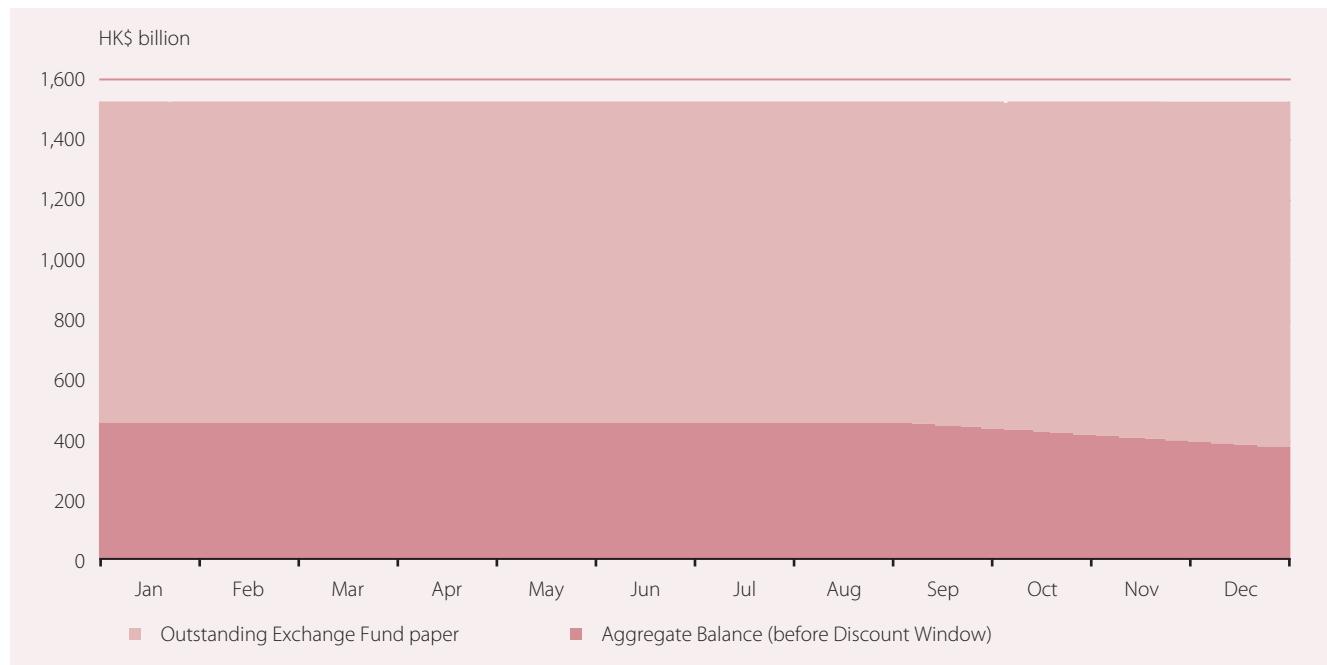
As the CUs were not triggered, the total of the Aggregate Balance and outstanding EFBNs remained virtually unchanged at around HK\$1,526.3 billion in 2021 (Chart 2). During the year, the HKMA issued a total of HK\$80 billion additional Exchange Fund Bills to meet the ongoing demand for Exchange Fund paper by banks amid the abundance of liquidity in the banking system, which led to a contraction of the Aggregate Balance from HK\$457.5 billion at the end of 2020 to HK\$377.5 billion at the end of 2021².

HK\$1,526.3 billion

Total Aggregate Balance and outstanding EFBNs

Reflecting the additional issuance of Exchange Fund Bills and the issuance of EFBNs to absorb EFBNs' interest payments according to the established practice, the outstanding EFBNs increased from HK\$1,069.2 billion to HK\$1,148.8 billion during the year. The Monetary Base as a whole remained fully backed by foreign exchange reserves.

Chart 2 Aggregate Balance (before Discount Window) and outstanding Exchange Fund papers in 2021



² The HKMA increased the issuance size of 91-day Exchange Fund Bills by HK\$5 billion in each of the 16 regular tenders on 7, 14, 21 and 28 September, 5, 12, 19 and 26 October, 2, 9, 16, 23 and 30 November and 7, 14 and 21 December 2021. The issuance of the Bills was increased by HK\$80 billion in total and the Aggregate Balance decreased by the same amount. The issuance of additional Exchange Fund Bills simply represents a change in the composition of the Monetary Base, with a shift from the Aggregate Balance to the outstanding EFBNs. As the Monetary Base remains fully backed by US dollars, such operations are consistent with the Currency Board principles.

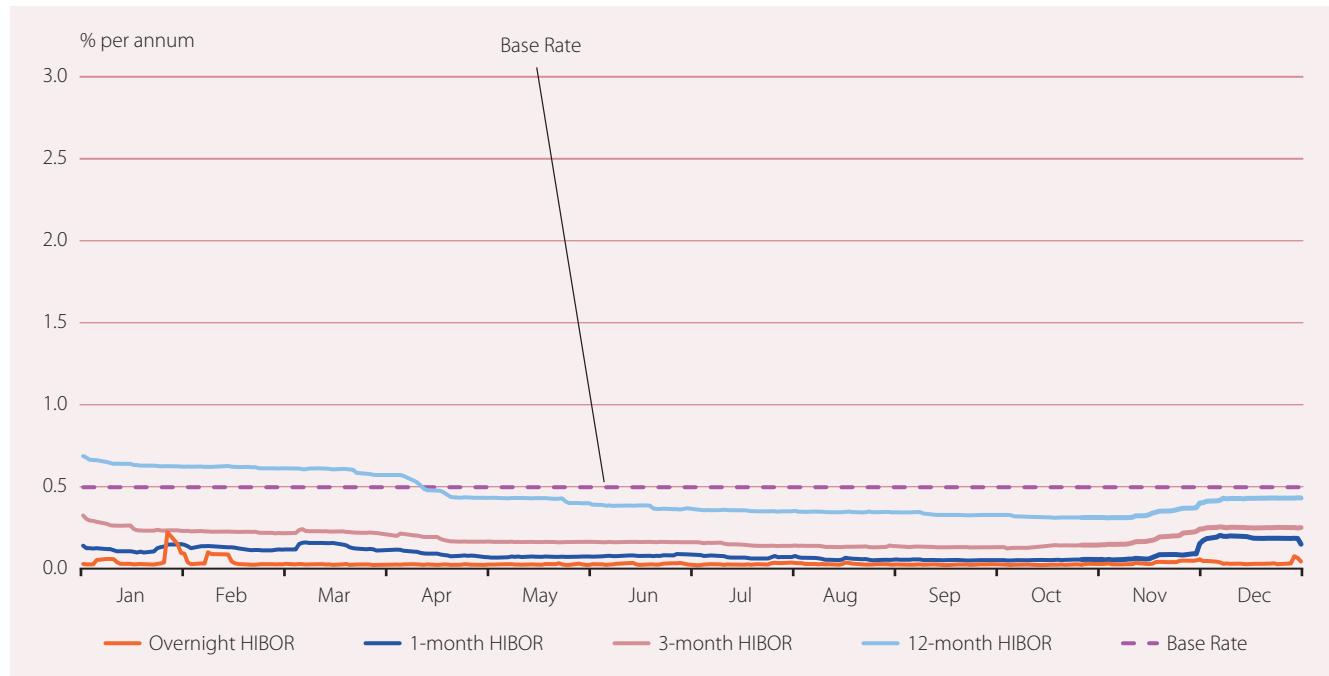
Monetary Stability

Money market

With the sizeable Aggregate Balance, the Hong Kong dollar interbank interest rates remained largely stable at low levels throughout the year (Chart 3). While the demand for the Hong Kong dollar increased along with the IPO activities during the first quarter, Hong Kong Interbank Offered Rates (HIBORs) of various tenors saw little fluctuations. Thereafter, HIBORs remained largely stable despite concerns about the

pace of US monetary tightening. Towards the end of 2021, HIBORs witnessed mild pick-ups, partly reflecting anticipated funding needs towards the year end. On the retail front, banks kept their Best Lending Rates unchanged. Overall, Hong Kong's money markets continued to function normally. Discount Window borrowing decreased to HK\$6.8 billion in 2021 from HK\$9.1 billion in 2020.

Chart 3 Hong Kong dollar interbank interest rates in 2021



Monetary Stability

The Linked Exchange Rate System



The Linked Exchange Rate System (LERS) has been a strong anchor of Hong Kong's financial system for more than three decades and has shown its strength and resilience to challenges. Despite lingering uncertainties surrounding global economic recovery, 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 *2021 External Sector Report*, the International Monetary Fund once again reiterated that the credibility of the LERS has been assured by a transparent set of rules, ample 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 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 109.8–110.5% during 2021, without touching the Upper or the Lower Trigger Level. The ratio closed at 110.2% 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 2021



Monetary Stability

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 2021, the CBC considered issues, including an assessment of inflation in the US, implications of the US dollar depreciation on Hong Kong, assessment of the taper tantrum risk and its impact on Hong Kong, and understanding the influence of Mainland-related fund flows on monetary conditions in Hong Kong. Records of the CBC's discussions on these issues and reports on the Currency Board operations submitted to the CBC are published on the HKMA website.

Notes and coins



At the end of 2021, the total value of banknotes issued by note-issuing banks in circulation was HK\$592.6 billion, an increase of 5.9% from a year earlier (Charts 5, 6 and 7).

The total value of Government-issued notes and coins in circulation amounted to HK\$12.9 billion at the end of 2021, up 1.7% year on year (Charts 8 and 9).

HK\$592.6 billion, +5.9%

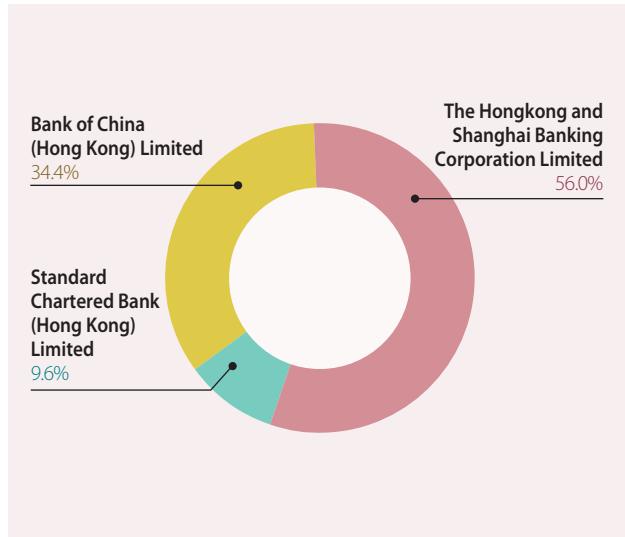
Total value of banknotes
issued by note-issuing banks

HK\$12.9 billion, +1.7%

Total value of notes and coins
issued by Government

Chart 5

Banknotes in circulation by note-issuing banks at the end of 2021



Monetary Stability

Chart 6

Distribution of banknotes in circulation at the end of 2021



Chart 7

Banknotes in circulation at the end of 2021

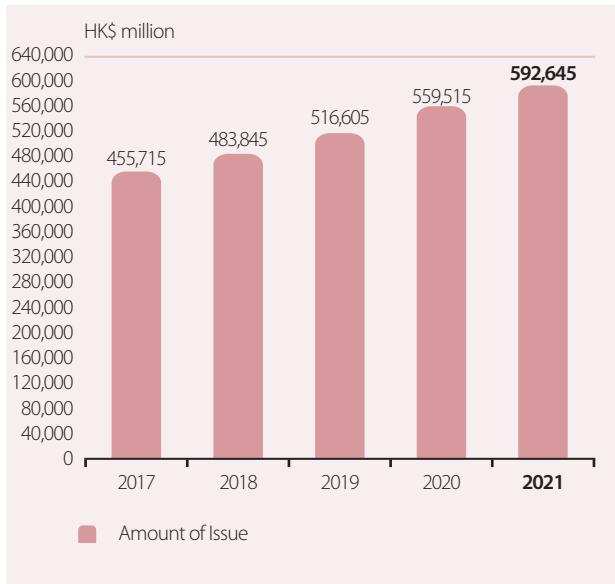
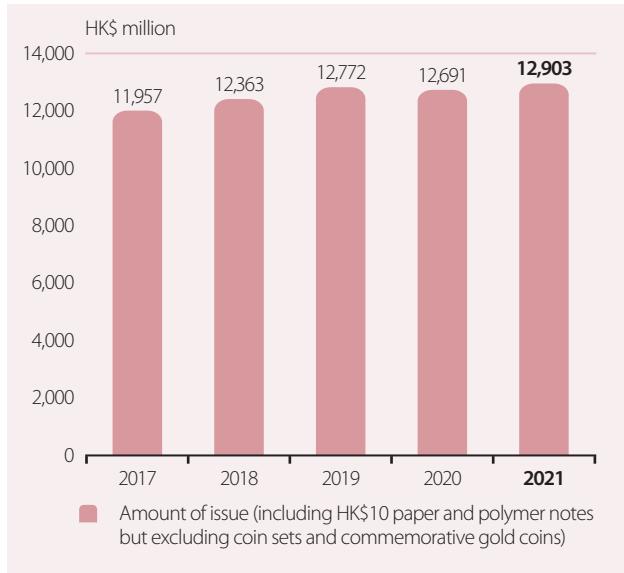


Chart 8

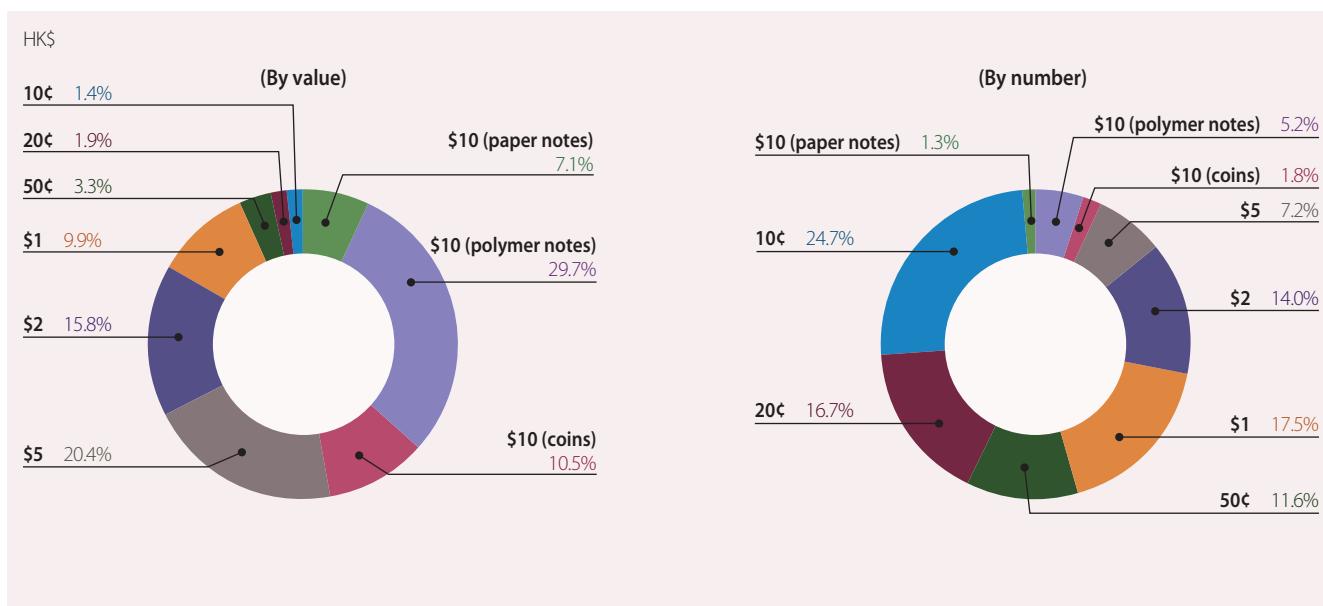
Government-issued currency notes and coins in circulation at the end of 2021



Monetary Stability

Chart 9

Breakdown of Government-issued currency notes and coins in circulation at the end of 2021



Hong Kong banknotes

During the year, the HKMA arranged 14 seminars for more than 4,000 participants, including professionals in the banking and retail industries as well as students, to help enhance their knowledge and skills in differentiating between authentic and counterfeit banknotes. These public education programmes on the design and security features of Hong Kong banknotes are well received.

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 *Sustainability* chapter on page 198.

Exchange Fund Bills and Notes

The EFBN Programme continued to operate smoothly. To meet the ongoing demand for Exchange Fund paper by banks amid the abundance of liquidity in the banking system, the HKMA issued a total of HK\$80 billion additional Exchange Fund Bills in the second half of 2021. The additional issuance resulted in a corresponding reduction of the Aggregate Balance. At the end of 2021, the nominal amount of outstanding Exchange Fund papers stood at HK\$1,148.6 billion (Table 2).

Table 2 Outstanding issues of Exchange Fund Bills and Notes

HK\$ million	2021	2020
Exchange Fund Bills (by original maturity)		
28 days	800	0
91 days	710,917	630,430
182 days	361,800	361,000
364 days	51,700	51,700
Subtotal	1,125,217	1,043,130
Exchange Fund Notes (by remaining tenor)		
1 year or below	7,000	6,400
Over 1 year and up to 3 years	10,400	9,800
Over 3 years and up to 5 years	2,400	4,000
Over 5 years and up to 10 years	3,600	4,800
Subtotal	23,400	25,000
Total	1,148,617	1,068,130

Monetary Stability

Monetary research

The Hong Kong Institute for Monetary and Financial Research (HKIMR)³ maintained a steady research output in 2021 despite the ongoing pandemic. During the year, the HKIMR released 30 working papers and held nine webinars, which encompassed a wide range of topics including monetary policy, banking stability, market microstructure and financial technology (fintech) development. The HKIMR also organised an international conference and a webinar in hybrid format.

- ◆ The webinar⁴, titled *RMB Exchange Rate Formation Mechanism and Exchange Rate Outlook*, was co-organised with the Hong Kong Academy of Finance on 17 August. It was live-streamed on a number of online platforms and attracted a total of over 1.16 million real-time views.

- ◆ The 11th Annual International Conference on the Chinese Economy, titled *On the Path to Common Prosperity: China's Economic Development in Dual Circulation*, was held on 11 November. The conference discussed recent policy developments related to common prosperity, dual circulation, anti-monopoly regulations, property market, Cross-boundary Wealth Management Connect and financial developments in the Greater Bay Area⁵. Expert speakers also presented in-depth analyses on the impact of population ageing and the sustainability of social security funds, as well as China's contribution to global financial stability and world economy. The six different sessions of the conference attracted over 3,200 online and on-site viewers, totaling 5,900 views.



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

⁴ Speakers included Dr Guan Tao, Global Chief Economist of the Bank of China International (China) Co., Ltd. and Professor Huang Yiping, Sinar Mas Chair Professor of Finance and Deputy Dean of the National School of Development of Peking University.

⁵ Mr Long Guoqiang, Vice President of the Development Research Center of the State Council, delivered a keynote speech at the conference.

Banking Stability

The banking sector in Hong Kong remained sound and stable in 2021, despite the emergence of more contagious COVID-19 variants, causing uncertainty to global economic recovery. During the year, the HKMA remained focused on the supervision of authorized institutions' risk management. Supervision of authorized institutions' operational and cyber resilience was also stepped up in light of escalating cyber threats and accelerating digitalisation in the banking sector.

On conduct supervision, the HKMA provided guidance to banks to facilitate the use of non-face-to-face channels for distributing investment and insurance products, and worked with fellow regulators to formulate supervisory requirements on new products in the market such as insurance-linked securities and virtual assets. The Code of Banking Practice was also revised to enhance consumer protection in digital financial services.

In the area of anti-money laundering and counter-financing of terrorism (AML/CFT), the HKMA's priority has been to further strengthen banks' gatekeeper role in the ecosystem and their ability to prevent and detect illicit fund flows associated with increases in online fraud, mule account networks and other financial crimes during the pandemic. To increase protection for customer accounts against fraud and financial crimes, the HKMA scaled up collaboration and information sharing with other stakeholders via public-private partnerships. While supporting remote customer on-boarding, the HKMA also encouraged adoption of other technologies including network analytics through the launch of the first AML Regtech Lab in November. Internationally, proactive engagement has kept the HKMA at the forefront of global AML/CFT efforts in the Financial Action Task Force.

On the development front, the Cross-boundary Wealth Management Connect Pilot Scheme in the Guangdong–Hong Kong–Macao Greater Bay Area was launched smoothly in September. During the year, the HKMA continued to execute its two-year roadmap for promoting Regtech adoption in Hong Kong. Several initiatives were rolled out to lay the foundation for banks' climate risk management and promote green and sustainable banking more broadly, as discussed in the *Sustainability* chapter. Further efforts were also made in the area of soft infrastructure, including promoting a customer-centric corporate culture, as well as working with the banking industry to roll out capacity-building initiatives to facilitate talent development.

Meanwhile, the HKMA has worked closely with the banking industry in optimising supervisory policies and processes. Good progress was made on implementing international supervisory standards locally, including those on capital adequacy and disclosure. The HKMA continued to advance its work to ensure a credible resolution regime for authorized institutions, including developing new resolution standards and implementing rules on loss-absorbing capacity requirements to enhance authorized institutions' resolvability.



Banking Stability

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 the Hong Kong economy needs.

Banks can affect the stability of the system through the way they carry out their businesses 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 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).

However, the Monetary Authority cannot ensure, nor is the Hong Kong prudential regulatory framework 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.

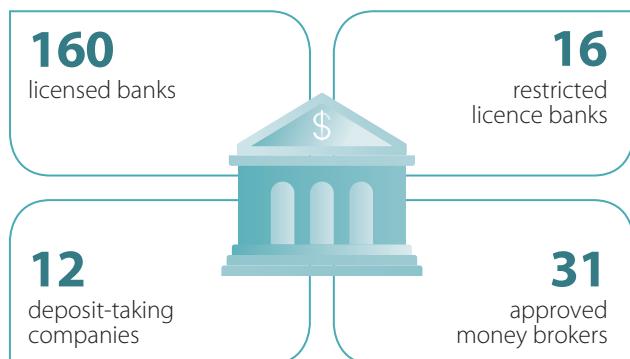
The Monetary Authority is also responsible for the designation and oversight of certain financial market infrastructures (FMIs). In overseeing FMIs, the HKMA aims to promote their general safety and efficiency, limit systemic risk and foster transparency. Making FMIs more resilient to financial crises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

Banking Stability

REVIEW OF 2021

Licensing

At the end of 2021, Hong Kong had:



During the year, the HKMA granted two banking licences and one restricted bank licence to three non-local banks.

The HKMA also granted a money broker approval to a foreign trading platform operator. The authorizations of three licensed banks and two restricted licence banks 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 321 to 324, and 330 to 333 respectively.

Overview of supervisory activities

The HKMA conducted 189 off-site reviews covering a broad range of issues, including CAMEL rating assessment¹, corporate governance, risk management and financial technology (fintech) strategies. As part of the HKMA's continued efforts to promote stronger risk governance, 40 meetings were held with the AIs' boards of directors, independent non-executive directors or board-level committees. A further 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 supplemented with thematic reviews on areas assessed to be of higher risk. A total of 679 on-site examinations and thematic reviews were carried out during the year with credit risk management as a key focus. Amid growing adoption of technology by banks, management of operational risk and technology risk was another major area of attention. The HKMA also increased the number of on-site examinations and thematic reviews targeting liquidity and market risk management. In addition, specialist teams performed on-site examinations and thematic reviews of AIs' activities in securities, investment products, insurance and mandatory provident fund (MPF)-related businesses, as well as their anti-money laundering and counter-financing of terrorism (AML/CFT) controls. Table 1 contains a summary of the HKMA's supervisory activities in 2021.

¹ CAMEL is an internationally recognised framework for assessing the Capital adequacy, Asset quality, Management, Earnings and Liquidity of banks. It can help identify banks whose weaknesses in financial condition, compliance with laws and regulations, risk management systems and overall operating soundness require special supervisory attention.

Banking Stability

Table 1 Summary of supervisory activities

	2021	2020
1 Off-site reviews and prudential interviews	189	186
2 Meetings with AIs' boards of directors, independent non-executive directors or board-level committees	40	30
3 Tripartite meetings	38	30
4 Culture dialogues	7	7
5 On-site examinations	135	99
Operational risk and technology risk management	45	25
AML/CFT controls	20	14
Liquidity risk management	11	6
Implementation of Basel capital adequacy framework	9	8
Capital planning	4	3
Market risk, counterparty credit risk and treasury activities	19	13
Securities, investment products, insurance and MPF-related businesses	12	17
Consumer protection	3	2
Deposit Protection Scheme-related representation	12	10
Overseas examinations	0	1
6 Thematic reviews	544	511
Credit risk management and controls	42	50
Operational risk and technology risk management	85	108
AML/CFT controls	71	74
Model risk management	7	11
Sale of investment, insurance and MPF products	266	180
Consumer protection	47	51
Liquidity risk	16	25
Market risk	10	12
Total	953	863

Banking Stability

Credit risk

Credit growth and asset quality

Total loans increased by 3.8% in 2021, compared with a growth of 1.2% in 2020. Table 2 shows the breakdown of growth in loans and advances.

Table 2 Growth in loans and advances

% change	2021	2020
Total loans and advances	3.8	1.2
Of which:		
– for use in Hong Kong	4.4	2.1
– trade finance	14.2	-6.2
– for use outside Hong Kong	1.1	0.1

Mainland-related lending increased by 3.6% to HK\$4,725 billion in 2021 (Table 3).

Table 3 Growth in Mainland-related lending

% change	2021	2020
Total Mainland-related lending	3.6	-0.2
Of which:		
– Mainland-related lending (excluding trade finance)	2.6	0.5
– trade finance	20.7	-10.8

The asset quality of the banking sector remained largely stable during the year and stayed at a healthy level by both historical and international standards. The classified loan ratio of the industry was 0.88% at the end of 2021, down from 0.90% at the end of 2020, well below the long-run historical average of 1.8% since 2000. The ratio for Mainland-related lending also decreased to 0.86% from 0.96% a year ago.

During the year, the COVID-19 pandemic continued to weigh on some sectors of the economy, while credit events in the Mainland property sector caught the attention of the market. The HKMA enhanced the breadth and depth of its surveillance, with deep-dive reviews focused on banks' exposures to highly leveraged borrowers.

Close communication with banks has been maintained to facilitate up-to-date assessment of the impact of economic and market developments as well as the adequacy of banks' risk management measures. The overall credit risk facing the banking sector is assessed to be manageable. The latest results of the HKMA's solvency stress tests confirm that the banking sector continues to maintain sufficient capital buffers to withstand extreme stress.

Targeted and thematic examinations were conducted during the year to evaluate AIs' systems and controls over loan classification and loan loss provisioning, overseas lending operations, and collateralised lending to private banking and wealth management customers.

Alleviating cash-flow pressure faced by customers

In September, the HKMA and the Banking Sector Small and Medium-sized Enterprise (SME) Lending Coordination Mechanism announced a six-month extension of the Pre-approved Principal Payment Holiday Scheme until the end of April 2022. This scheme was first launched in May 2020 to defer loan principal payments of eligible corporate customers by six months. In light of a resurgence of local coronavirus infections, in February 2022, the scheme was further extended until the end of October 2022. In addition, the scheme was enhanced to offer a one-year partial principal repayment option to those customers who are financially capable and willing to resume principal repayment gradually.

By the end of December 2021, banks had approved loan tenor extensions and other forms of relief in over 83,000 cases, involving an aggregate amount of over HK\$920 billion. For personal customers, banks had approved more than 52,000 cases of principal payment holidays for residential mortgages and other personal relief loans, amounting to over HK\$53 billion.

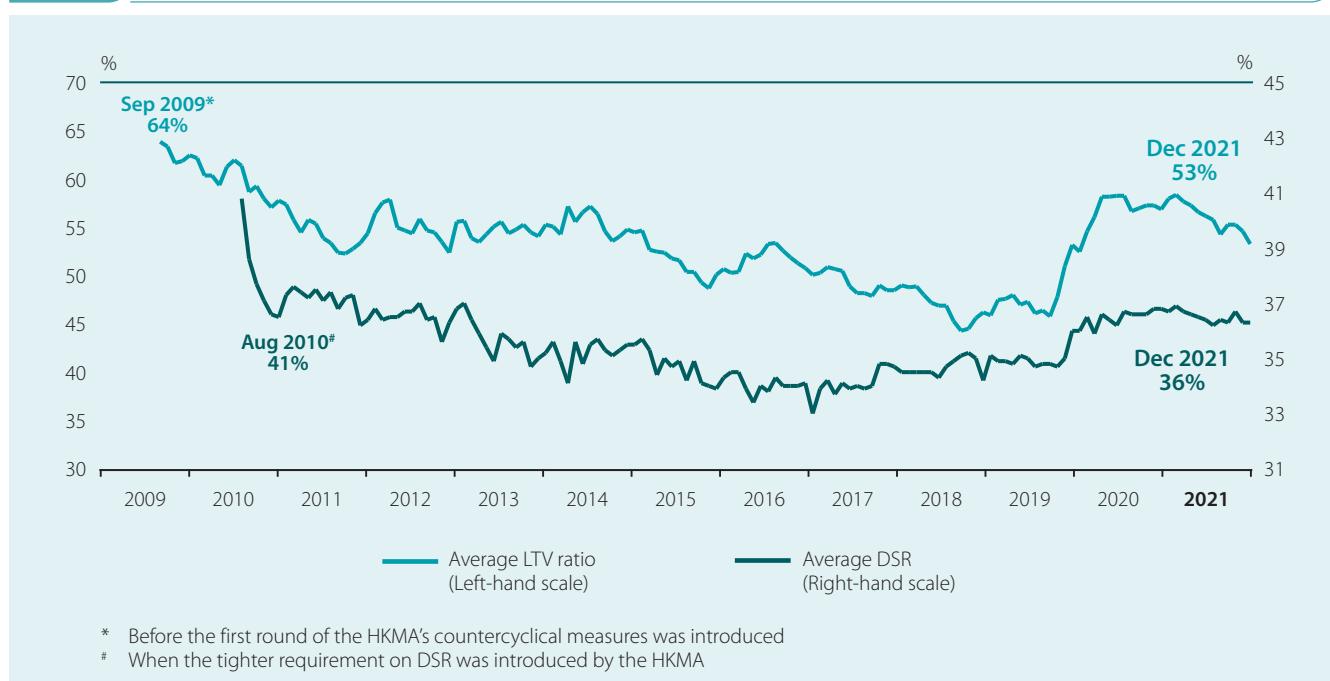
Banking Stability

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 2021 was 53%, 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 36% in December 2021, compared with 41% in August 2010, when a cap on DSR was first applied (Chart 1).

Chart 1 Average LTV ratio and DSR of new RMLs approved



Banking Stability

Operational and technology risks

In light of banks' increasing reliance on technology to support their operations, the HKMA stepped up supervision of operational and technology risks. Key supervisory focuses during the year included controls over cloud outsourcing and remote working arrangements. The HKMA launched an industry consultation in December on a draft new Supervisory Policy Manual (SPM) module on "*Operational Resilience*". The new SPM module seeks to provide guidance to banks on developing a holistic and integrated operational resilience framework.

The HKMA introduced the Cyber Resilience Assessment Framework 2.0 in January to reflect the latest sound practices on cyber security risk management. During the year, the HKMA monitored AIs' implementation of the Cyber Resilience Assessment Framework 2.0 and reviewed their cyber resilience capabilities. In view of the growing risk of destructive cyber-attacks, in May, the HKMA requested all AIs to critically assess the need for a secure tertiary data backup, taking reference from the *Secure Tertiary Data Backup Guideline* issued by the Hong Kong Association of Banks (HKAB).

In response to heightened risks and rising numbers of phishing attacks, the HKMA worked closely with the industry to strengthen the security of internet and mobile banking services. A large-scale joint HKMA-HKAB public awareness campaign, themed "Protect your Personal Digital Keys; Beware of Fraudulent Links!" began in July (Figure 1).

Figure 1 Raising public awareness of phishing attacks



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

Liquidity and market risks

To enhance monitoring of AIs' liquidity risk exposures, the HKMA introduced additional scenarios into its liquidity stress testing framework to evaluate AIs' ability to cope with liquidity shocks over a prolonged period.

During the year, thematic reviews were conducted to assess the adequacy of AIs' liquidity stress testing programmes and evaluate the sufficiency of their monitoring metrics and control limits for managing liquidity risk. The HKMA also carried out reviews to evaluate the effectiveness of AIs' market risk management frameworks for debt securities investments and operational controls over treasury activities.

The HKMA closely monitored AIs' progress in preparing for the transition away from the London Interbank Offered Rate (LIBOR). It collaborated with industry associations and developed tools to assist AIs in supporting their customers' migration to alternative reference rates, including a leaflet to raise corporates' awareness of the transition and an information note on options available in the loan markets to replace US dollar LIBOR. AIs have substantially remediated contracts referencing LIBOR settings which ceased to be published after the end of 2021. They were reminded not to enter into new LIBOR contracts from 1 January 2022 onwards.

Banking Stability

Anti-Money Laundering and Counter-Financing of Terrorism

The priority was to further strengthen banks' gatekeeper role in the ecosystem and their ability to prevent and detect illicit fund flows associated with increases in online fraud, mule account networks and other financial crimes during the pandemic. Collaboration in typology and information sharing through the Fraud and Money Laundering Intelligence Taskforce (FMLIT)² was scaled up by expanding membership to include all eight virtual banks. Six FMLIT alerts were developed during the year to share modus operandi information and good practices, including one from a virtual bank on stooge account networks used for telephone deception. Banks continued to contribute over 80% of suspicious transaction reports filed, which provided timely and actionable intelligence leading to criminal investigations. With more banks operating 24/7 stop-payment mechanisms, the industry helped intercept over HK\$2.2 billion in suspected fraudulent payments in 2021.

In addition, the HKMA worked with HKAB to provide guidance to banks on business operation issues related to the National Security Law, including updating the *Frequently Asked Questions in relation to Anti-Money Laundering and Counter-Financing of Terrorism* in October.

The HKMA supported the adoption of remote customer on-boarding and technological innovation in the banking industry, including through direct engagement in the Fintech Supervisory Chatroom and Sandbox, by experience sharing in the form of case studies published in January (Figure 2) and clarifying regulatory expectations on AML/CFT regulatory technology (Regtech) adoption in a circular issued in August. As remote customer on-boarding has become more popular during the pandemic, practical guidance was quickly developed with the banking industry on the application of iAM Smart, the Government-led digital identity system launched in 2021, which supports regulatory compliance for AML/CFT.

Figure 2 Publishing AML/CFT Regtech: Case Studies and Insights

What do early AML/CFT Regtech adopters consider important?



Secure stakeholder buy-in and executive support early



Build cross-functional and inter-disciplinary teams



Create forums to exchange views and experiences



Focus on data readiness and quality



Evaluate third-party vendors' compatibility, scale and sustainability



Define value and set performance indicators

² Established in May 2017, the FMLIT is a public-private partnership for information sharing. Since its launch and up to the end of December 2021, intelligence sharing through the FMLIT resulted in 885 intelligence-led suspicious transaction reports, identification by banks of 14,732 suspicious accounts previously unknown to law enforcement agencies, and HK\$749 million being restrained or confiscated.

Banking Stability

Using improved data and technology capabilities, the HKMA has increased its forward-looking, risk-based supervision of AIs' AML/CFT systems, implemented through 20 on-site examinations and 71 off-site reviews or assessments during the year, including thematic reviews on private banking business, screening systems, and the effectiveness of transaction monitoring systems in detecting suspicious fund flows. To help manage the risks from COVID-19-related fraud, as well as mule networks related to identity theft and

investment scams, in April, the HKMA shared key observations and good practices noted from a thematic review on using external information and data in AML/CFT systems (Figure 3).

The HKMA hosted an AML webinar on *Collaboration, Data and Technology* in September, with over 500 participants from across the AML ecosystem, including the banking and stored value facility (SVF) sectors, financial regulators, and law enforcement agencies (Figure 4).

Figure 3 Insights from a thematic review on AML/CFT systems

Key observations and good practices in the use of external information and data in AML/CFT systems

Integrate external information and data into control systems



Develop and share typologies within ecosystem



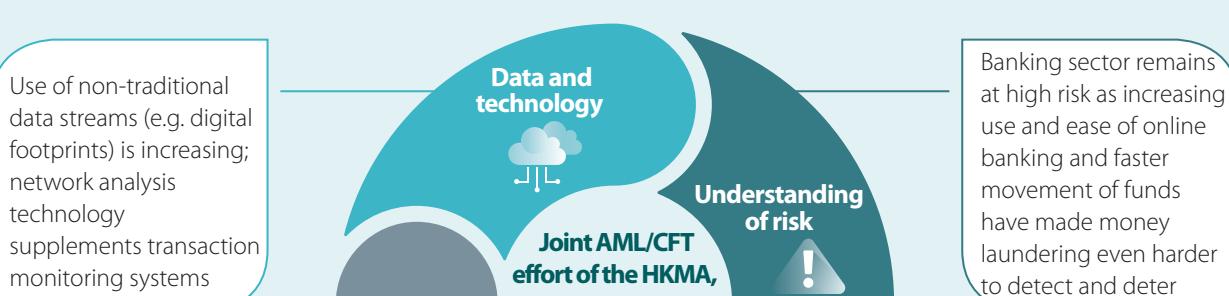
Management support, technology tools and internal collaboration



Ability to measure value and benefits



Figure 4 AML webinar on Collaboration, Data and Technology, September 2021



Banking Stability

In November, bringing its work on anti-fraud and AML/CFT Regtech together under the “Fintech 2025” strategy, the HKMA, in collaboration with Cyberport, launched the first AML Regtech Lab (AMLab), which focused on the use of network analytics to address the risks of fraud-related mule accounts, enhancing data and banks’ capabilities to contribute to information sharing.



Ms Carmen Chu (front row, middle), Executive Director (Enforcement and AML) of HKMA, Mr Rico Tang (front row, third from right), Senior Manager, Fintech (Blockchain and Regtech) of Cyberport, Mr Stewart McGlynn (front row, third from left), Head (AML and Financial Crime Risk) of HKMA, and representatives from InvestHK, Hong Kong Police Force, participating banks and technology firms, and Deloitte participate in the first AMLab

The HKMA set up a new educational page on its website and published posts on social media to urge bank consumers to say “no” to requests or offers of financial rewards for selling or lending their bank accounts to third parties, which may constitute a money laundering offence (Figure 5). Major retail banks and virtual banks also disseminated similar messages through various channels.

Figure 5 Educational messages on social media



Reminding the public: “Don’t be tempted by quick money. Don’t lend your account to anyone to launder money.”

Banking Stability

Wealth management and MPF-related businesses

The HKMA co-operates closely with other financial regulators in Hong Kong to give 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.

The HKMA conducted 12 on-site examinations, 266 thematic reviews and 15 analyses of surveys and returns of AIs, covering the sale of investment, insurance and MPF products, and focusing in particular on investment products related to corporates with high indebtedness, and non-investment-linked long term insurance products. The HKMA and the Securities and Futures Commission (SFC) completed a concurrent thematic review on intermediaries' spread charges and other related practices, and issued a joint circular to the industry on the examination findings and good practices. In addition, the HKMA and the SFC conducted and announced the findings of the first annual joint survey on sale of non-exchange traded investment products to better understand the industry landscape and market trends.

After extensive consultation with the relevant regulatory authorities and the banking industry, the HKMA promulgated the implementation arrangements for the Cross-boundary Wealth Management Connect (Cross-boundary WMC) Pilot Scheme and signed a memorandum of understanding (MoU) with relevant regulatory authorities on supervisory co-operation. The HKMA announced in October that 19 banks in Hong Kong were eligible to offer Cross-boundary WMC services, and has been monitoring these participating banks to ensure smooth implementation of the scheme.

Use of non-face-to-face (non-F2F) channels by AIs to provide investment and insurance services to customers has been rising. The online investment product transaction volume of AIs increased by more than 50% in the second half of 2021 compared with the second half of 2019. During 2021, about half of all investment transactions in retail banks were conducted online. The number of long term insurance policies sold via digital distribution channels by retail banks tripled between the second half of 2019 and the second half of 2021. The share of digital distribution among all channels rose from 4% to 18% over the same period. In September, the HKMA provided guidance to AIs on distributing investment and insurance products through non-F2F channels in a way that is customer-friendly while according protection. Following commencement of the regulatory framework for the issuance of insurance-linked securities in Hong Kong, the HKMA and the SFC issued a joint circular in October to remind intermediaries of key investor protection measures in distributing insurance-linked securities and related products.

The industry was supportive of the HKMA's 2020 consultation on enhancing the regulation and supervision of trust business in Hong Kong, including promulgating a Code of Practice for Trust Business. The proposal was then revised, taking into account constructive suggestions from the industry, for further discussion in the third quarter of 2021. The HKMA also engaged the industry associations in fine-tuning the proposed Code of Practice, and the new SPM module for implementing the Code.

Banking Stability

The HKMA issued the new SPM module IB-1 on “*Supervision of Insurance Intermediary Business of Authorized Institutions*” in June, outlining supervisory and enforcement approaches, as well as relevant statutory and regulatory requirements. In September, the HKMA shared with AIs key observations from desktop reviews on the sale of Qualifying Deferred Annuity Policies and Voluntary Health Insurance Scheme products, and referral arrangements for Tax-deductible Voluntary Contributions.

Separately, following a joint inspection on premium financing activities of long term insurers and licensed insurance intermediaries (including AIs), the HKMA and the Insurance Authority (IA) issued a joint circular in September to share key observations and good practices with the industry. The HKMA also continued to work closely with the IA in extending the temporary facilitative measures introduced in 2020 to allow non-F2F distribution of certain insurance products, subject to implementation of specified compensating measures, and in reviewing various proposals on non-F2F distribution of insurance products involving AIs under the IA’s Insurtech Sandbox.

The HKMA processed seven applications for registration as a registered institution and addition of regulated activities under the Securities and Futures Ordinance (SFO). It granted consent to 173 executive officers responsible for supervising the securities activities of registered institutions and conducted background checks on 7,361 individuals whose information was submitted by registered institutions for inclusion in the register maintained by the HKMA. Pursuant to the MoU between the Monetary Authority and the IA, the HKMA provided comments on 28 AIs that are deemed licensed insurance agencies to facilitate the IA’s assessment of their insurance agency licence applications.

Other supervisory activities

The Banking Supervision Review Committee³ considered six cases in 2021. Four of them concerned the authorization of AIs and the approval of money brokers. The remaining two cases were related to virtual banks (Table 4).

The HKMA commissioned 10 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 operations. Three reports covered risk management, another three concerned the AIs’ overall risk governance frameworks, and the remaining four related to areas such as compliance with the BO, SPM and AML/CFT controls, and securities business.

In 2021 there were no incidents reported by AIs involving breaches of the BO requirements relating to capital adequacy or liquidity ratio. There were 47 breaches of other BO provisions, 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 Committee⁴ completed a review of the CAMEL ratings of all the 187 AIs. No AIs appealed against the Committee’s decisions.

Table 4 Summary of other supervisory activities

	2021	2020
1 Cases considered by the Banking Supervision Review Committee	6	3
2 Reports commissioned under section 59(2) of the BO	10	18
3 Approval of applications to become AIs’ controllers, directors, chief executives or alternate chief executives	195	226

³ 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.

⁴ 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.

Banking Stability

Promoting Regtech adoption

The HKMA is spearheading Regtech adoption in Hong Kong. As part of its two-year roadmap, a number of initiatives and events were rolled out during the year, including the following:

◆ Global Regtech Challenge

A competition launched in March to raise the banking industry's awareness of Regtech;

◆ Regtech conference

A large-scale online conference held in June and attended by over 4,000 participants across five continents, with leaders from the global Regtech ecosystem sharing their experience and insights on the enormous potential of Regtech;

◆ Regtech Adoption Practice Guide

A series of detailed practical guides commencing in June to assist banks to implement Regtech solutions; and

◆ Regtech skills framework

Published in October and aimed to help nurture Regtech talent in Hong Kong.

Adopting supervisory technology

The HKMA continued to incorporate technology in its supervisory processes to improve their efficiency and effectiveness. During 2021, the HKMA successfully concluded a series of pilots and proofs of concept to assess the suitability of various technologies in the market. Based on the results of these exercises, the HKMA issued requests for proposals to procure technology solutions for an end-to-end digital supervisory platform. In addition, the HKMA explored the possibility of leveraging advanced analytics to strengthen its forward-looking supervisory capabilities. Potential use cases include the application of network analysis techniques to visualise corporate shareholding relationships, and the use of sentiment analysis based on news and other public information to help identify market trends and supervisory issues that may warrant attention.

International co-operation

Co-operation with overseas supervisors

During the year, the HKMA participated in 31 college-of-supervisors meetings organised by the home supervisors of 22 banking groups with significant operations in Hong Kong. Given the pandemic, all of these meetings were held virtually. A broad range of issues was discussed, covering areas such as financial soundness, corporate governance, risk management controls and operational resilience. The HKMA also co-organised a virtual supervisory college meeting with the home supervisor of a global systemically important bank (G-SIB).

The HKMA is a member of each of the Crisis Management Groups (CMGs) for 12 G-SIBs attended by the relevant home and host authorities. At the regional level, the HKMA organises the Asia CMG for a G-SIB with its Asia-Pacific headquarters in Hong Kong and is a member of the Asia-Pacific Recovery and Resolution Planning College for two other G-SIBs, where resolution-related topics are addressed.

Bilateral meetings were held during the year with banking supervisors from Australia, the European Union, India, Japan, Macao, Mainland China, Singapore, Switzerland and the United Kingdom. There were also regular exchanges with overseas authorities on institution-specific issues and developments in financial markets.



Mr Arthur Yuen, Deputy Chief Executive of HKMA, delivers the closing remarks at the flagship Regtech conference

Banking Stability

International and regional forums

The HKMA participates in a range of international and regional forums for banking supervisors. It is a member of the Basel Committee on Banking Supervision (Basel Committee) and its governing body, the Group of Governors and Heads of Supervision. Following a revision of the Basel Committee's organisation structure, which took effect from January 2021, the HKMA serves as a co-chair of the Policy and Standards Group and the chair of the Pillar 2⁵ Expert Group. The HKMA is a member of the Risks and Vulnerabilities Assessment Group, the Supervisory Cooperation Group and the Policy and Standards Group. It is also represented in the Task Force on Climate-related Financial Risks 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. It also participates in the Financial Stability Board (FSB) LIBOR Drafting Team, which focuses on supervisory issues associated with LIBOR transition.

The HKMA participates actively in the work of the G20/OECD⁶ 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. In particular, the HKMA provided input to the Task Force's comprehensive review on the *High-level Principles*.

The HKMA is a member of the Supervisors Roundtable on Governance Effectiveness chaired by the Federal Reserve Bank of New York, which aims to advance innovation in the supervision of governance, behaviour and culture in order to collectively influence culture reform in the financial sector.

⁵ Pillar 2 is a framework for determining any additional capital that an AI 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.

⁶ Organisation for Economic Co-operation and Development.

Banking Stability

The HKMA continued its engagement with international standard setters, by providing expert assessors to, and co-chairing the Evaluations and Compliance Working Group of the Financial Action Task Force, as well as participating in the working group on Cross-border Payments Data and Identifiers established under the FSB.

At the regional level, the HKMA is a member of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)⁷; the South East Asia, New Zealand and Australia 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 experience regarding the implementation of Basel III liquidity standards in the EMEAP jurisdictions amid the COVID-19 pandemic. 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.

During the year, the HKMA chaired and served as the secretariat of the Study Group on Resolution (SGR), a forum within the EMEAP, which supports knowledge sharing and discussion among regional authorities in relation to resolution in a cross-border context. See the *International policy and regional co-operation* section on page 107 for more details.

Basel Committee Regulatory Consistency Assessment Programme

The Basel Committee conducts a Regulatory Consistency Assessment Programme (RCAP) to monitor, assess and evaluate its members' implementation of the Basel standards. In 2021, the HKMA contributed to the work of an RCAP Review Task Force that considered potential updates to the RCAP process. The HKMA also participated in the assessment of Japan's large exposures standards, which was put on hold in early 2020 due to COVID-19 but resumed in spring 2022.

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 to ensure their compliance with the relevant requirements as the OTC derivatives market develops and international standards evolve.

Regulatory regime for approved money brokers

During the year, the HKMA conducted a comprehensive review of the regulatory regime for AMBs taking into account the latest international developments, with a view to strengthening supervision under a risk-based approach.

⁷ The EMEAP is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region.

Banking Stability

Implementation of Basel standards in Hong Kong

Capital standards

The Banking (Capital) (Amendment) Rules 2020, which were made to implement the revised Basel capital standards on counterparty credit risk, came into effect on 30 June. The HKMA issued a set of Q&As to supplement the Rules and help AIs interpret and apply them.

Consequential changes to the leverage ratio framework and disclosure requirements arising from the implementation of the revised capital standards on counterparty credit risk, together with other updates issued by the Basel Committee, such as those in relation to the revised treatment of collateral in client cleared derivatives for leverage ratio calculation, also took effect on 30 June.

In December, the HKMA issued the draft Banking (Capital) (Amendment) Rules 2022 for implementing the Capital Requirements for Banks' Equity Investments in Funds for statutory consultation as required under the BO. In April 2022, the Banking (Capital) (Amendment) Rules were tabled in the Legislative Council for negative vetting with a view to them being brought into effect from 1 July 2022.

During the year, the HKMA consulted the industry on proposed implementation approaches for the revised capital standards set out in the Basel III final reform package (published by the Basel Committee in December 2017). To allow more time for the local industry to prepare for system changes, local implementation of the Basel III final reform package had been deferred to (i) 1 July 2023 (six months after the latest Basel Committee date) for the revised capital standards on credit risk and operational risk, the output floor and the leverage ratio; and (ii) to a date no earlier than 1 January 2024 for those on market risk and credit valuation adjustment risk, even though AIs will be required to implement them for reporting purposes by 1 July 2023. The HKMA is preparing necessary amendments to the Banking (Capital) Rules to implement the revised capital standards, supported by supplementary guidance as appropriate.

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 2022 and their corresponding higher loss-absorbency capital requirements.

Exposure limits

A survey of sample AIs was launched in December to inform the development of policy proposals for amending the Banking (Exposure Limits) Rules to clarify policy intent, implement recommendations from international peer reviews and incorporate changes consequential to the amendment of related capital rules.

Disclosure standards

The HKMA issued a consultation paper in December setting out its proposals for implementing the new or revised disclosure requirements published by the Basel Committee, namely *Pillar 3⁸ Disclosure Requirements – Updated Framework* (December 2018), *Revisions to Leverage Ratio Disclosure Requirements* (June 2019) and *Revisions to Market Risk Disclosure Requirements and Voluntary Disclosure of Sovereign Exposures* (November 2021). These new or 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. Like the two preceding revised sets of disclosure requirements (published by the Basel Committee in January 2015 and March 2017), which have already taken effect in Hong Kong, both the new and revised disclosure requirements will be implemented by amendments to the Banking (Disclosure) Rules.

⁸ 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

Enhancing the supervisory policy framework

Regulation of over-the-counter derivatives transactions

Starting on 1 March 2017, the HKMA has implemented the global margin and risk mitigation standards for AIs involved in non-centrally cleared OTC derivatives transactions.

In line with the announcement made by the Basel Committee and the International Organization of Securities Commissions (IOSCO) on 3 April 2020, to alleviate the impact of COVID-19 on the banking system, the HKMA deferred the commencement dates of the final two implementation phases of the initial margin requirements by an additional year to 1 September 2021 and 1 September 2022 respectively. The HKMA will keep track of AIs' implementation of the remaining phases and co-ordinate with other member jurisdictions of the Basel Committee and IOSCO Working Group on Margin Requirements on implementation and market developments.

Other supervisory policies and risk management guidelines

The HKMA pressed ahead with its work on various policies and guidelines in 2021, including the following:

- ◆ In March — consulted the industry on proposed revisions to SPM module TA-2 on *"Foreign Exchange Risk Management"*, in particular, incorporating the Basel Committee's *Supervisory Guidance for Managing Risks Associated with the Settlement of Foreign Exchange Transactions* more specifically into the SPM module. The revisions were finalised in January 2022.

- ◆ In April — finalised and gazetted the revised SPM module CA-B-2 on *"Systemically Important Banks"* to improve the assessment methodology of AIs' complexity in the D-SIBs identification process, and updated various sections of this module to reflect some recent developments.
- ◆ In July — issued the revised SPM module CS-1 on *"Group-wide Approach to Supervision of Locally Incorporated Authorized Institutions"*, primarily to reflect the HKMA's latest supervisory practices and incorporate relevant principles in international standards concerning the supervision of financial conglomerates.
- ◆ In December — released to the industry for consultation on proposed revisions to the 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, and released the new SPM module GS-1 on *"Climate Risk Management"* to give high-level guidance to AIs on building climate resilience by incorporating climate considerations into governance, strategy, risk management and disclosure.

Banking Stability

Balanced and responsive supervision

The HKMA held two rounds of roundtable meeting with major retail banks to discuss their key pain points in business operations. In particular, to assist banks in adapting to the new normal brought about by COVID-19, the HKMA provided clarifications and shared good practices regarding work-from-home arrangements and business continuity planning, clarified wet-ink signature requirements, and provided guidance on distribution of investment and insurance products through non-F2F channels.

As the eight virtual banks had been in operation for a year or so in Hong Kong, the HKMA hosted the first roundtable meeting with them to explore and discuss any potential areas for enhancing the HKMA's supervisory policies and processes, and how the HKMA can foster an environment conducive to virtual banks' business growth without compromising effective risk management and compliance. At the roundtable meeting, the HKMA helped them better comprehend its supervisory expectations regarding virtual banks' new product approval processes, use of the Fintech Supervisory Sandbox, and AML/CFT control measures for remote customer on-boarding.

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 also worked with other authorities on issues related to banks' provisioning practices.

Green and sustainable banking

During the year, under the three-phased approach to promote green and sustainable banking, the HKMA finalised and issued the supervisory requirements on climate risk management. In particular, specific requirements and a timeline were set for mandating climate-related disclosures based on the recommendations of the FSB's Task Force on Climate-related Financial Disclosures by 2025, confirming the HKMA's commitment to meeting the goal set by the Green and Sustainable Finance Cross-Agency Steering Group. More details about the HKMA's policy framework for green and sustainable banking are given in the *Sustainability* chapter on pages 177 to 178.

Resolution

In 2021, 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. The HKMA was actively involved 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 Resolution Steering Group (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 resolvability. To address the cross-border risks to orderly resolution arising from the early termination of financial contracts governed by non-Hong Kong law, and in line with the contractual approach to giving effect to cross-border resolution actions advocated by the FSB, the Monetary Authority made the Financial Institutions (Resolution) (Contractual Recognition of Suspension of Termination Rights — Banking Sector) Rules, commonly referred to as the Stay Rules, which commenced operation on 27 August 2021. On 22 December, the HKMA issued ST-1 *Resolution Planning — Contractual Recognition of Suspension of Termination Rights*, a new chapter of the Code of Practice issued under the Financial Institutions (Resolution) Ordinance (FIRO), to provide guidance on the operation of certain provisions in the Stay Rules.

Banking Stability

Stay Rules: Contractual recognition of suspension of termination rights

Risk of early termination of financial contracts in resolution

In a resolution where one or more stabilization options are applied by a resolution authority to a non-viable, within-scope financial institution, it is important that the contractual counterparties to the financial institution cannot terminate and close out their positions solely as a result of the financial institution's entry into resolution. Disorderly termination of contracts on a mass scale could frustrate resolution actions taken with respect to a non-viable, within-scope financial institution, causing significant contagion effects to the financial markets and posing wider risks to the stability and effective working of the financial system.

The FIRO empowers the Monetary Authority as a resolution authority to temporarily suspend ("stay"), for up to two business days, the termination right of a counterparty (other than a counterparty that is a financial market infrastructure) to certain financial contracts.

Where the relevant contracts are governed by non-Hong Kong law, there are uncertainties as to whether a court in a non-Hong Kong jurisdiction would give effect to a suspension of termination rights imposed by the Monetary Authority under the FIRO unless the law of such jurisdiction expressly recognises the Monetary Authority's action.

Another potential impediment to resolvability on which the HKMA made progress during 2021 is operational continuity in resolution (OCIR). Following industry consultation, on 5 November the HKMA issued the FIRO Code of Practice chapter OCIR-1 *Resolution Planning — Operational Continuity in Resolution*. The chapter explains the Monetary Authority's policy in relation to OCIR and sets out the Monetary Authority's expectations regarding the ex ante arrangements AIs should put in place, in line with the relevant FSB guidance, to secure the continuity in resolution of services that are

Further, even if a court in a non-Hong Kong jurisdiction were to give effect to the suspension imposed under the FIRO, it could be challenging to effect such recognition in a timely fashion in order to best achieve the resolution objectives in Hong Kong.

To address the issue of ensuring cross-border effectiveness of a suspension of termination rights imposed under local rules or laws with respect to contracts governed by laws of other jurisdictions, the FSB has set out certain principles in its *Principles for Cross-border Effectiveness of Resolution Actions*.

These FSB Principles support, among others, a contractual approach to giving effect to cross-border resolution actions, which complements and supports statutory frameworks.

How do the Stay Rules address the potential impediment?

The Stay Rules support the contractual approach as advocated by the FSB. They require AIs incorporated in Hong Kong and certain of their group companies to ensure that certain financial contracts governed by non-Hong Kong law contain a term or condition to the effect that the parties agree in a legally enforceable manner that the parties (other than an excluded counterparty) will be bound by any suspension of termination rights in relation to the contract that may be imposed by the Monetary Authority under the FIRO.

essential to the continued performance of critical financial functions as well as to support post-stabilization restructuring in a timely manner.

In addition, the HKMA advanced policy development as regards liquidity and funding in resolution, and in January 2022 issued for industry consultation a draft FIRO Code of Practice chapter on the Monetary Authority's expectations regarding an AI's liquidity reporting and estimation capabilities in resolution.

Banking Stability

Ensuring operational continuity in resolution

OCIR refers to continuity in resolution of services that are essential to the continued performance of critical financial functions as well as to support post-stabilization restructuring in a timely manner. The ability to ensure OCIR is consistent with the objectives and standards of the *Key Attributes of Effective Resolution Regimes for Financial Institutions*⁹ published by the FSB. OCIR is therefore a key aspect of resolution planning for individual AIs and failure to sufficiently address and mitigate OCIR risk may constitute a significant impediment to the orderly resolution of an AI.

As part of its bilateral resolution planning programme, the HKMA expects an AI to be able to demonstrate that it has assessed the risks to OCIR and that appropriate arrangements to mitigate these risks (OCIR arrangements) are in place or being put in place. The following diagram illustrates the relationship among OCIR arrangements, essential services and the preferred resolution strategy determined for an AI:



OCIR-1 Resolution Planning — Operational Continuity in Resolution provides guidance to AIs on the Monetary Authority's approach to resolution planning and resolvability assessment (including the removal of impediments to orderly resolution) as regards OCIR. The following are the matters an AI is expected to consider and address when putting in place OCIR arrangements:



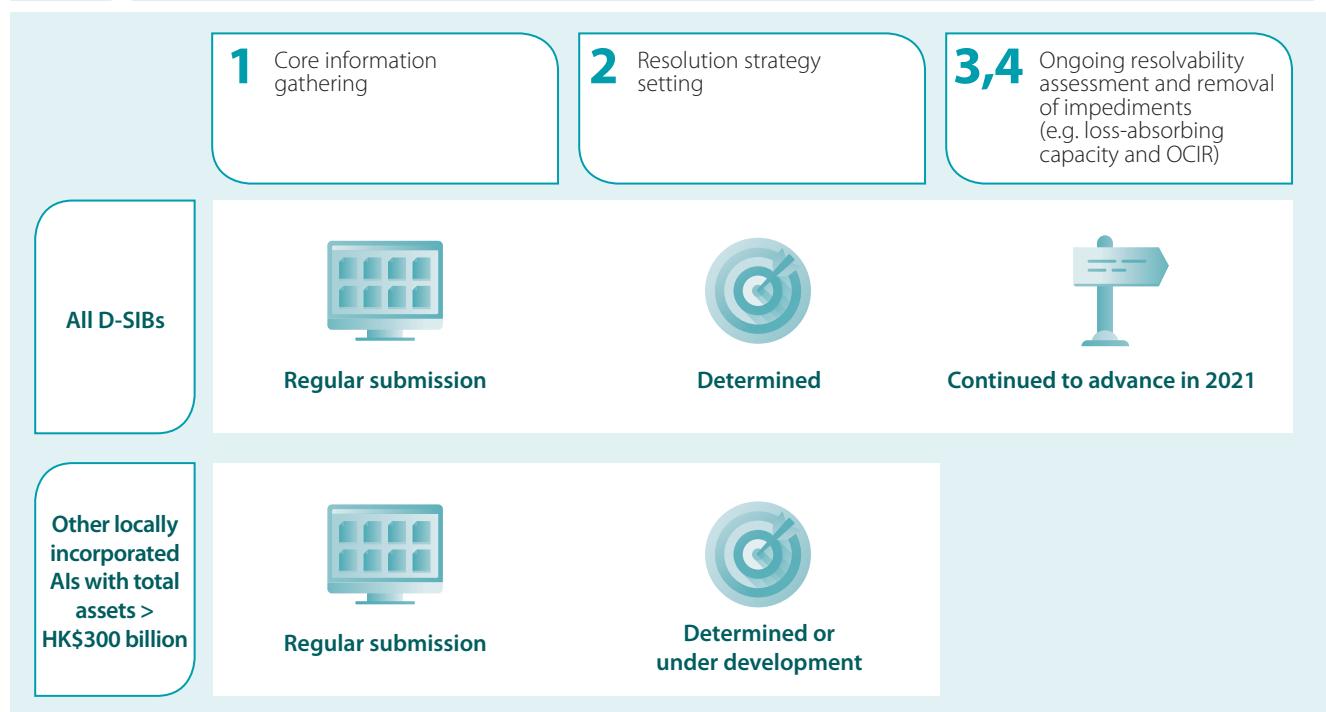
⁹ See *Key Attributes of Effective Resolution Regimes for Financial Institutions*, FSB (2014) (https://www.fsb.org/wp-content/uploads/r_141015.pdf).

Banking Stability

Resolution planning

The HKMA continued to advance resolution planning for each of the D-SIBs and progressed resolution planning for other locally incorporated AIs with total consolidated assets above HK\$300 billion by reviewing core information required for resolution planning and advancing the development of, and in some cases determining, the preferred resolution strategies for these AIs (Chart 2).

Chart 2 Status of the HKMA's key resolution planning programmes with AIs



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 continue to build up a layer of loss-absorbing capacity (LAC) resources by issuing capital and non-capital LAC debt instruments to facilitate loss absorption and recapitalisation in case of failure. Some D-SIBs are progressing their approaches to non-prepositioned LAC resources, and all D-SIBs are now making periodic public disclosures of their LAC positions and instruments.

Some of the D-SIBs are also developing and implementing new capabilities as part of group-wide programmes to enhance resolvability. This has involved a wide spectrum of actions, such as functional design and development of models and processes for valuations in resolution, assessment of the criticality of and relationship with financial market infrastructure, and review of capabilities for estimating and reporting liquidity needs in resolution. The operational readiness of some of the arrangements has been demonstrated by scenario testing of operational services, mapping and playbooks, as well as cross-border drills of contingency arrangements for access to payment clearing. Following finalisation of the FIRO Code of Practice chapter OCIR-1 *Resolution Planning — Operational Continuity in Resolution*, the HKMA has also commenced implementation work.

Banking Stability

Cross-border co-operation is an important component of resolution planning for G-SIBs given the international nature of their businesses and operations. The HKMA leads the regional resolution planning for a G-SIB with its Asia-Pacific headquarters in Hong Kong, organising the Asia CMG and driving work to enhance resolvability for the G-SIB's Asia resolution group. 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 policy development, contributed to the FSB's seventh resolvability assessment process for these G-SIBs and worked with the relevant authorities to operationalise home-host co-ordination arrangements. For example, the HKMA took part in discussions on the management and deployment of unallocated total loss-absorbing capacity (TLAC) resources within groups and the development of playbooks on resolution execution.

HKMA's resolution execution capability

The HKMA continued to enhance its capability to execute resolution. During the year, the HKMA advanced the Resolution Advisory Framework, completing the execution of framework agreements with external advisors to support efficient provision of external advice as needed by the Monetary Authority in relation to resolution. The HKMA also advanced the development of a crisis management framework to support co-ordination between local resolution authorities.

International policy and regional co-operation

The HKMA is actively involved in the implementation of resolution reforms through its membership in the FSB. In the FSB's *2021 Resolution Report: "Glass half-full or still half-empty?"*, which marks the 10th anniversary of the *Key Attributes*, the FSB states that the *Key Attributes* have set the standard for the reform of resolution regimes and resolution planning. The report recognises the significant progress made towards resolvability; the ongoing work on allocation of TLAC resources within groups; and G-SIBs' capabilities for access to funding in resolution, valuation and continuity of access to FMs. The FSB noted that some gaps need to be addressed if the benefits of resolution reforms are to be fully realised, such as cross-border issues in relation to funding in resolution and bail-in execution.

At the regional level, the HKMA chaired and served as the secretariat of the SGR (see page 100 for further information on the EMEAP's work). The SGR supports knowledge sharing and discussion among regional authorities in relation to resolution in a cross-border context, and its membership primarily comprises central banks as well as representatives from authorities and agencies that perform resolution, supervisory and deposit insurance functions. The SGR met virtually during 2021 and undertook knowledge sharing activities focusing on members' resolution regimes. The HKMA continued to engage with relevant stakeholders to promote better understanding of the resolution regime and related operational arrangements in Hong Kong. The HKMA took part in a number of virtual events, for example those organised by the Bank for International Settlements' Financial Stability Institute and the South-East Asian Central Banks Centre, and provided speakers on a range of topics such as resolution strategies in a cross-border context.

Banking Stability

International resolution policy work

Effective resolution requires internationally harmonised resolution policies and standards, 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-SIBs¹⁰.

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 primarily through its membership in the FSB ReSG and the FSB ReSG's Cross-Border Crisis Management Group for Banks.

The HKMA is a member of a number of workstreams of the FSB ReSG's Cross-Border Crisis Management Group for Banks, including the following:

- ◆ The TLAC Technical Expert Group, which aims to ensure continued effective implementation of the FSB TLAC Standard¹¹;

- ◆ The Bail-in Execution workstream, which contributed to the publication of a practices paper in December 2021 that describes some of the main operational processes and arrangements that resolution authorities of G-SIBs follow when operationalising bail-in under their jurisdictions' legal frameworks, securities law and requirements of trading venues¹²; and
- ◆ The CMG Good Practices workstream, which contributed to the publication of a report in November that sets out good practices that have helped CMGs to enhance their preparedness for the management and resolution of a cross-border financial crisis affecting a G-SIB as per the *Key Attributes*. The report draws on the FSB stocktake of CMG operations and CMG members' experience during the COVID-19 pandemic¹³.

In addition, the HKMA contributed to the FSB's regular monitoring of the impact of COVID-19-linked market disruption on TLAC issuance.

Bank consumer protection

Code of Banking Practice

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 2020¹⁴, while a few have taken prompt remedial action to rectify areas of non-compliance.

Following a review by the Code of Banking Practice Committee with the active participation of the HKMA, the Code was revised to enhance protection to consumers amid the increasing use of digitalised channels for the delivery of banking services and evolving customer needs. The revised Code took effect on 10 December. AIs are expected to achieve full compliance with the new provisions as quickly as possible within six months of the effective date, with an extension of up to 12 months for provisions requiring more extensive system changes.

¹⁰ See 2021 List of Global Systemically Important Banks (G-SIBs), FSB (2021) (<https://www.fsb.org/wp-content/uploads/P231121.pdf>).

¹¹ For more detail on the FSB's latest progress and technical work on TLAC, in particular on unallocated TLAC, see Section 2 of 2021 Resolution Report: "Glass half-full or still half-empty?", FSB (2021) (<https://www.fsb.org/wp-content/uploads/P071221.pdf>).

¹² For more details, see *Bail-in Execution Practices Paper*, FSB (2021) (<https://www.fsb.org/wp-content/uploads/P131221-2.pdf>).

¹³ See *Good Practices for Crisis Management Groups*, FSB (2021) (<https://www.fsb.org/wp-content/uploads/P301121.pdf>).

¹⁴ With five or fewer instances of non-compliance.

Banking Stability

Updating the Code of Banking Practice

Enhancing customer experience and protection in digital banking services



- ◆ Issue warnings to specific customer groups on cyber fraud, bogus advertisements, etc.
- ◆ Provide channels for the public to authenticate digital promotional activities of AIs
- ◆ Disclose product information effectively and clearly in promotions on social media
- ◆ Provide more information on deposit interest rates and fees on AIs' digital platforms
- ◆ Make available information to customers in a storable digital format to facilitate retention for future reference
- ◆ Extend retrieval period of electronic statements by customers to at least seven years
- ◆ Clarify applicability of the relevant requirements of the Code to internet and mobile banking services

Strengthening protection and transparency of general banking services



- ◆ Enhance transparency of credit card chargeback mechanism
- ◆ Strengthen the procedures for handling mis-transfer of funds by customers
- ◆ Ensure customers are given a reasonable opportunity to review product application and transaction information
- ◆ Enhance information disclosure on local and cross-boundary transfers
- ◆ Provide timely notifications to customers upon changes in promotional interest rates of deposit accounts

Embracing financial inclusion



- ◆ AIs to take into account the needs of customers for physical banking services when modifying their branch networks
- ◆ Ensure customers with different needs, including the elderly and persons with physical or intellectual impairments, are provided with appropriate banking services
- ◆ Accommodate the needs of different customers when providing services or information through electronic means

Banking Stability

Innovative banking products launched by virtual banks

Leveraging the development of fintech, virtual banks launched various new and innovative banking products. The HKMA published an *inSight*¹⁵ article in July to introduce the new customer experience these products offer, and highlight the supervisory measures taken to ensure adequate consumer protection, including enhanced transparency and disclosure of product features on digital platforms. The article also reminded customers to pay attention to fees and charges, possible implications for their financial positions and potential consequences of over-borrowing.

Sharing customer data for direct marketing by third parties

There are increasing occasions (for example, AIs' co-branding credit cards or marketing programmes) where AIs may provide customers' personal data collected through online channels (including mobile apps) to third parties. Given the special trust relationship between AIs and their customers, and since some of the third parties are not subject to the same regulation as the AIs, the HKMA believes that AIs should aspire to a higher standard of protection for customer data. The HKMA issued a circular in November to provide guidance on the approaches AIs should adopt when sharing customers' personal data with third parties for direct marketing.

Mis-transfer of funds by bank customers

To enhance protection for bank customers who might inadvertently make mis-transfers of funds online, the HKMA issued a circular in December to require AIs to conduct mandatory name matching on 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. AIs are also required to display a reminder to the payer to carefully verify the payee's account number and other payment details before confirming online fund transfers.

Dormant accounts and unclaimed deposits

Upholding consumer protection principles in safeguarding the interests of the owners or beneficiaries of dormant accounts and unclaimed deposits, the HKMA issued a circular in November. The circular set out a range of practices to enhance the handling of dormant accounts, encouraged AIs to educate their customers to avoid dormant accounts, and facilitate searches for and recovery of lost accounts.

Payment arrangements for property transactions

To minimise the significant impact on residential mortgage customers if completion of a property transaction is disrupted by suspension of the operation of a law firm engaged to handle the transaction, the banking industry and the HKMA co-operated closely to study and develop alternatives to the current practice of routing sizeable payments in residential property conveyancing transactions through law firms. The banking industry issued a proposal for consultation in December.

Culture dialogues

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

Hiring individuals with misconduct records

The HKMA published consultation conclusions in May on implementing the Mandatory Reference Checking Scheme to address the "rolling bad apples"¹⁶ phenomenon in the local banking sector. The conclusions set out the framework for implementing the reference checking scheme and invited the industry to develop the relevant operational details.

¹⁵ *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 which are of interest to the public.

¹⁶ "Rolling bad apples" are people with a record of misconduct who manage to obtain subsequent employment elsewhere without disclosing their earlier misconduct to the new employer, allowing them to potentially repeat their misbehaviour at another firm.

Banking Stability

Bank culture

The HKMA continued to advocate for bank culture reform by encouraging banks to foster a sound culture through three pillars: governance, incentive systems, and assessment and feedback mechanisms.

In March, building on insights from an earlier self-assessment exercise on bank culture, the HKMA embarked on a focused review on incentive systems of front offices in retail banks, to identify industry practices and aim for better alignment of bank staff's incentive systems with customers' interests. Through a range of activities in the review, the HKMA gathered comprehensive information to gauge perceptions of the staff of 20 retail banks on their banks' incentive systems, culture, as well as customer and conduct outcomes.

Key activities in the focused review

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



Given the scale and breadth of the focused review, the HKMA published an interim report in November to share the preliminary observations and insights gathered from the activities completed earlier in the year. The interim report outlined common themes, key characteristics, as well as common frameworks and practices, in relation to front office incentive systems.

Banking Stability

Examples of common themes in staff perception

Financial incentives carry heavy weight



The survey found that financial incentives such as incentive payments on top of fixed pay are heavily weighted motivators, especially for frontline staff.

Intrinsic motivators are also important in shaping staff behaviour



The survey found that financial incentives are not the only factor that influences frontline staff. Intrinsic motivators, such as upholding the bank's reputation and achieving good customer outcomes, are also considered important by frontline staff at all levels.

Being customer-centric may seem undervalued



The survey found that frontline staff are generally conscientious. However, fewer staff feel that good customer and conduct outcomes are valued as much as other dimensions of performance.

For details, please refer to the full *Interim Report on Focused Review on Incentive Systems of Front Offices in Retail Banks*:



Building on the preliminary insights, the HKMA is finalising the focused review and aims to share the observations and insights from the whole review, as well as effective incentive practices with the industry, in 2022.

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 were widely and effectively used by the public to verify callers' identities, with more than 28,000 enquiries received during 2021.

Customer complaints on debt collection agents employed by authorized institutions

The number of complaints received by AIs on their debt collection agents decreased to 46 from 50 in 2020 (Chart 3). The HKMA will continue to monitor AIs' use of debt collection agents.

Chart 3

Complaints received by AIs on their debt collection agents



Credit data sharing

The HKMA continued to work closely with industry associations¹⁷ to introduce more than one consumer credit reference agency (CRA) in Hong Kong through the Credit Reference Platform (CRP). The main objectives are to enhance the service quality of consumer CRAs and reduce the operational risk of having only one commercially run service provider in the market, particularly the risk of single point of failure.

These industry associations issued tenders in January and shortlisted three CRA tenderers to proceed to the next phase of the tender in May where their capabilities would be further assessed. System development of the CRP for the interface with the credit providers and CRAs progressed during the year. The HKMA issued a circular in December to remind AIs to prepare for participation in the CRP, which is scheduled for launch by the end of 2022.

¹⁷ Namely HKAB, the Hong Kong Association of Restricted Licence Banks and Deposit-taking Companies and the Hong Kong S.A.R. Licensed Money Lenders Association Ltd.

Banking Stability

Financial inclusion

Sustained efforts were made during 2021 to foster financial inclusion. Anticipating that the number of people affected by dementia may increase as the population ages, the HKMA worked closely with HKAB to enhance access to banking services by persons with dementia and improve customer experience. In December, HKAB published the *Guideline on Banking Services for Persons with Dementia*, following engagement with a wide range of stakeholders¹⁸. The HKMA also issued a circular in December setting out the supervisory expectations for AIs providing retail banking services to implement the recommendations in the Guideline and provide proper training to frontline staff to ensure that they are able to understand, communicate with and offer appropriate services to customers in need. The HKMA hosted a roundtable discussion in July with a psychiatrist, legal practitioners and banks to share the practical experience of managing banking services for persons with mental incapacity.



Mr Alan Au (right), Executive Director (Banking Conduct) of HKMA, hosts a roundtable to promote understanding of banking services for persons with mental incapacity

The HKMA monitored implementation of the *Practical Guideline on Barrier-free Banking Services* and the *Guideline on Banking Services for Persons with Intellectual Disabilities* issued by HKAB in 2018 and 2020 respectively. The industry made good progress during 2021, as evidenced by the following:

- ◆ **Over 99%** of bank branches are now wheelchair accessible.
- ◆ **Over 97%** of bank branches are equipped with assisted listening systems.
- ◆ **Over 1,560** voice navigation automated teller machines are in operation.
- ◆ **2,260** automated teller machines in operation are at a height suitable for wheelchair users.
- ◆ **ALL** bank branches have displayed notices at the main entrance stating that guide dogs are welcome.
- ◆ Retail banks provide online channels to help persons with hearing impairment report lost credit cards and use live chat services to report unauthorised transactions.

More details of the progress made in enhancing accessibility to basic banking services can be found in the *Sustainability* chapter on pages 206 to 207.

¹⁸ Including the Labour and Welfare Bureau, Social Welfare Department, Equal Opportunities Commission, Guardianship Board, Hong Kong Alzheimer's Disease Association, Hong Kong Council of Social Service, and other social service organisations.

Banking Stability

Opening and maintaining bank accounts

The HKMA worked with the banking industry to enhance communication with the business community on bank account opening and maintenance. The HKMA's dedicated email account and hotline are available for the public as well as the local and overseas business communities to lodge enquiries and provide feedback. All enquiries and feedback are handled and followed up by the HKMA's dedicated Account Opening and Maintenance Team, which endeavours to address feedback and comments and improve the customer experience. To this end, sessions were arranged to facilitate direct dialogue between the banking industry and the business sector.

Since the launch of the Simple Bank Account service in early 2019, which provides basic banking services with less extensive customer due diligence measures, over 9,100 Simple Bank Accounts have been opened. The average unsuccessful rate of account opening applications is now less than 4%, representing a significant improvement from around 10% in early 2016. This is an illustration that a robust AML/CFT regime in Hong Kong has not undermined access to banking services by legitimate businesses and ordinary residents.

Deposit protection

The deposit protection limit is HK\$500,000 per depositor per bank under the Deposit Protection Scheme (DPS).

The Hong Kong Deposit Protection Board rolled out the electronic compensation payment functionality in mid-2021 to supplement traditional paper cheque payments for DPS compensation. A payout rehearsal was conducted in November focusing on the use of the new electronic payment channels and drills of contingency arrangements related to the COVID-19 pandemic. The results once again showed that making compensation payments to the majority of eligible depositors within seven days is an achievable target. The rehearsal also demonstrated that the use of electronic payment channels could further speed up the payout process.

To mark its 15th anniversary, the DPS ran a series of publicity campaigns to promote the Deposit Protection Board's role as the "Guardian of Deposits". These included a media briefing and a promotional video recounting the evolution of the DPS. Along the same theme, an online campaign was launched to feature the savings stories of selected key opinion leaders and invite the public to share smart savings tips for a chance to win a DPS commemorative gold coin.

Banking Stability

Enforcement

Banking complaints

The HKMA received 2,961 banking complaints against AIs or their staff in 2021, representing an increase of 17% or 437 cases from the previous year. Despite the rising trend, the HKMA completed 2,892 cases, up 22% year on year, with 620 cases outstanding at the end of the 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

	2021			2020
	Conduct-related issues	General banking services	Total	Total
In progress on 1 January	182	369	551	390
Received during the year	309	2,652	2,961	2,524
Completed during the year	357	2,535	2,892	2,363
In progress on 31 December	134	486	620	551

Table 6 Performance pledges for 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	99.7%
Reply to complaint-related enquiries	15 working days	100%

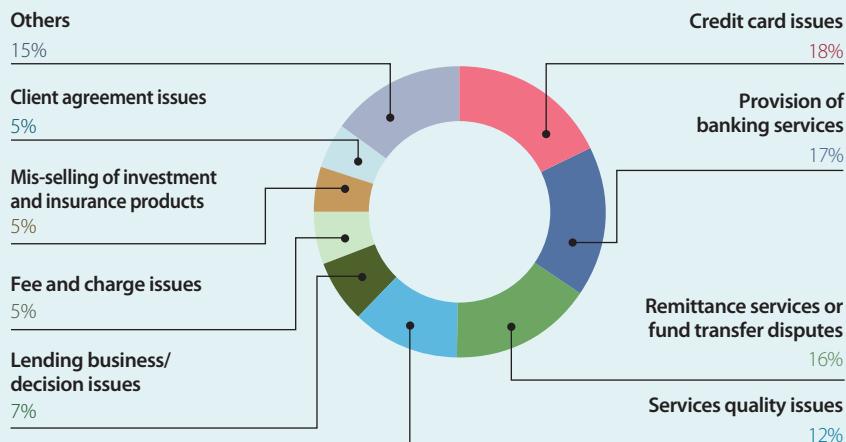
Complaints related to credit cards increased by 99% from 269 cases in 2020 to 535 cases in 2021 and were the most common type of complaints. Over 74% of these complaints concerned disputes over card transactions or unauthorised card transactions, and the majority of those were fraud related, including, for example, phishing SMS messages or emails, online romance or investment, and e-shopping scams. All complaints were handled in accordance with the established procedures. In addition, the HKMA followed up with AIs on the effectiveness of their internal control measures, and made joint efforts to promote consumer education and awareness, reminding the public to stay alert to SMS messages or emails purportedly sent by banks, and to avoid disclosing personal and other information, such as bank account numbers, usernames and passwords, to third parties or unfamiliar websites.

Another common category of complaints concerned the provision of banking services, including the opening and maintenance of bank accounts. This category of complaints decreased by 14% from 576 cases in 2020 to 494 cases in 2021 (Chart 4).

Banking Stability

Chart 4

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



Enforcement

The Monetary Authority is empowered to enforce customer due diligence and record-keeping requirements under the Anti-Money Laundering and Counter-Terrorist Financing Ordinance and to take disciplinary actions in respect of material contraventions. In November, the Monetary Authority imposed pecuniary penalties totalling HK\$44.2 million on four banks and issued orders where warranted for remedying contraventions in respect of deficiencies in their AML systems and controls. Common control lapses identified by the HKMA's investigations related to ongoing monitoring of customer relationships and deficiencies in conducting enhanced customer due diligence in high-risk situations.

For the first time, in December, the Monetary Authority exercised the disciplinary power under the Payment Systems and Stored Value Facilities Ordinance (PSSVFO) to reprimand and impose a pecuniary penalty of HK\$1 million on an SVF licensee that failed to fulfil the requirement relating to AML/CFT measures under the PSSVFO.

In January, the Monetary Authority suspended the registration of a relevant individual for four months under the BO, following an investigation that found that the relevant individual had falsified a client's instruction form by copying the client's signature.

The HKMA also collaborated closely with other financial regulators during the year to investigate or assess cases concerning the compliance and fitness and propriety of persons regulated by the HKMA and the other regulators. During 2021, the HKMA referred 28 cases to the SFC and, under the MoU between the two regulators, shared the results of the HKMA's investigations and assessments of these cases. Following the referrals, the SFC imposed disciplinary sanctions, including public reprimand and pecuniary penalties of HK\$9.8 million, against a registered institution for control deficiencies and regulatory breaches in relation to disclosure of interests in research reports, standing authority and contract notes for securities lending services, telephone recording of client orders, and know-your-customer and product disclosure requirements. In other cases, three former relevant individuals were banned from re-entering the industry for periods ranging from 10 years to life. Their misconduct included making false representation of academic qualifications in support of employment applications, having a record of criminal convictions under the Prevention of Bribery Ordinance and the SFO, and misappropriation of HK\$3.6 million from a customer's bank account.

Banking Stability

The HKMA and the IA maintained regulatory dialogues on matters of mutual interest. Based on the established collaborative arrangements under the MoU, the HKMA completed the handling of 94 cases concerning the sales of insurance products by AIs and shared the results with the IA. Meanwhile, the IA referred 38 insurance-related cases concerning AIs to the HKMA for appropriate actions.

The HKMA investigated or otherwise followed up on issues arising from banking complaints or the HKMA's on-site examinations that raised possible concerns regarding compliance with laws and relevant regulatory requirements and fitness and properness. This resulted in the issuance of 31 compliance advice letters to AIs and staff who were found not to have acted in full compliance with regulatory requirements, and other supervisory actions during the year.

Complaints Watch

As a continuing initiative to promote proper standards of conduct and prudent business practices among AIs, three issues of the periodic *Complaints Watch* newsletter were published in 2021. The newsletters drew AIs' attention to complaint trends, good practices and control measures to protect customer assets against investment scams, fraud or theft, and reminded AIs to enhance consumer protection against the surge in phishing scams. To complement the industry's educational efforts in reminding customers to be cautious when asked to disclose credit card information and one-time passwords, the HKMA also published posts on social media to highlight the importance for bank customers to protect their credit card information and one-time passwords, as well as to carefully read the transaction notifications issued by AIs (Figure 6).

The Ombudsman's Awards for Officers of Public Organisations

Two HKMA staff members received Ombudsman's Awards for Officers of Public Organisations in 2021 in recognition of their efforts in fostering a positive culture of service and promoting professionalism in the handling of complaints. The HKMA attaches great importance to handling customer complaints against banks, with a view to enhancing consumer protection and ensuring that customers are treated fairly by banks.

Figure 6 Alerts on social media



Highlighting the importance of protecting credit card information and one-time passwords on social media



Dual awards for public service: Ms Carmen Chu (first from right), Executive Director (Enforcement and AML), Mr Alan Au (first from left), Executive Director (Banking Conduct), Ms Mimi Chow (second from right), Manager (Enforcement), and Ms Mavis Cheung (second from left), Manager (Banking Conduct), all from the HKMA, receiving the awards from Ms Winnie Chiu, The Ombudsman (middle)

Banking Stability

Capacity building in the banking sector

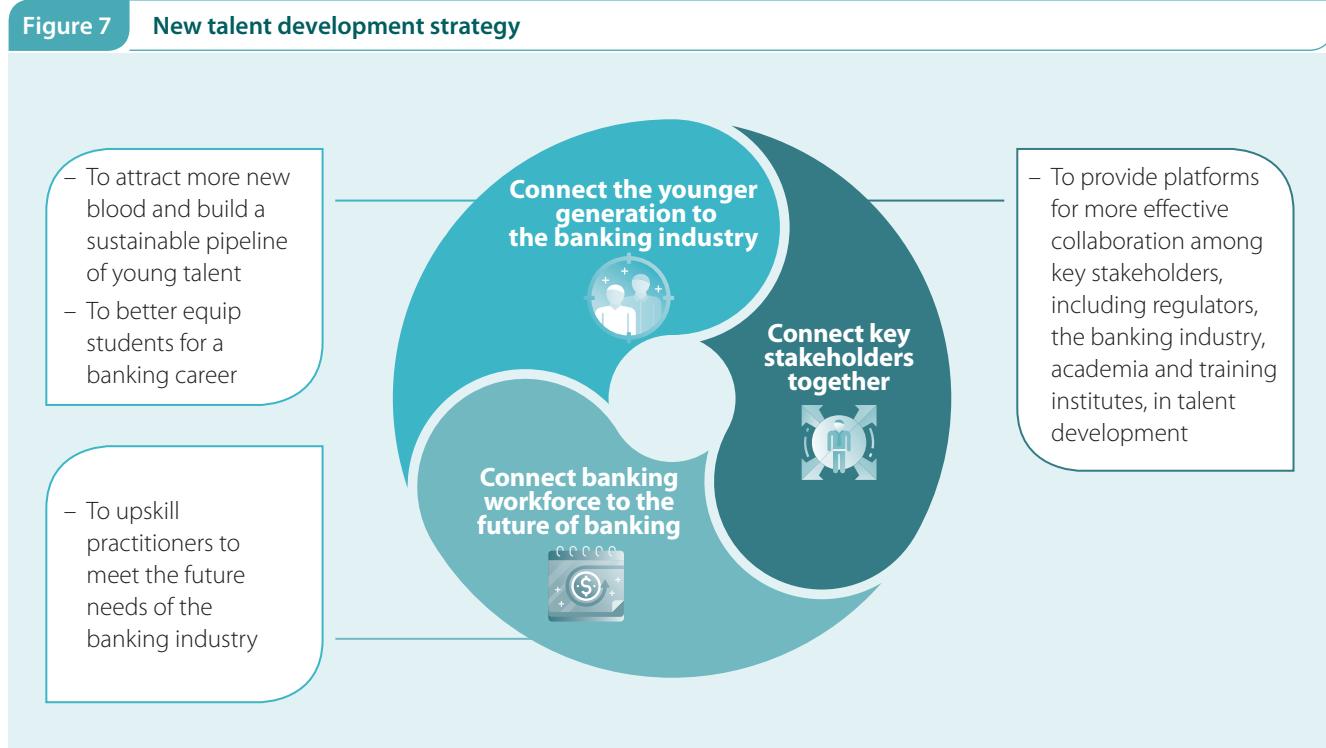
Three new growth engines are driving the future of Hong Kong's banking sector: fintech, green finance, and the Guangdong–Hong Kong–Macao Greater Bay Area. These not only bring new business opportunities, but also require new skills from the workforce. To maintain Hong Kong's competitiveness as an international financial centre, the HKMA has formulated a holistic talent development strategy — "Connecting Talent to the Future" — to promote talent development in the banking sector in a systematic and targeted manner.

The new talent development strategy entails three key directions (Figure 7):

- ◆ connect the younger generation to the banking industry;
- ◆ connect banking workforce to the future of banking; and
- ◆ connect key stakeholders together.

A number of initiatives were launched under the new talent development strategy to complement ongoing talent development efforts. See Box on *Connecting talent to the future* on pages 120 to 121 for more details.

Figure 7 New talent development strategy



Banking Stability

Connecting talent to the future

Connect the younger generation to the banking industry

Future Banking Bridging Programme

The HKMA and the Hong Kong Institute of Bankers jointly launched the Future Banking Bridging Programme in November. The programme comprises short courses taught by industry practitioners, covering practical banking knowledge and useful soft skills that are highly sought after by the banking industry. The programme is free and aims to better prepare university students to be "future ready". The inaugural class attracted 220 students from different universities and various disciplines.



Mr Eddie Yue (front row, fifth from right), Chief Executive of HKMA, meets the participating students of the Future Banking Bridging Programme during their visit to the HKMA



The Future Banking Bridging Programme's inaugural class comprises 220 students from different universities

University career talks

The HKMA, in collaboration with the banking industry and the Hong Kong Institute of Bankers, held career talks at 11 universities from September to November to showcase career opportunities and prospects in the new era of the banking industry. The talks attracted nearly 800 undergraduates from different disciplines.

Pilot apprenticeship programme for private wealth management

The programme, a joint initiative of the HKMA and the Private Wealth Management Association, offered about 300 apprenticeship opportunities to university students since its inception in 2017 until the end of 2021.

The programme comprises apprenticeships with a private wealth management institution and tailored training for two summers, enabling students to build an early foundation for a career in the private wealth management industry. 2021 saw the graduation of the fourth cohort of apprentices under the programme. Another round of recruitment was conducted in November for a new batch of apprentices for 2022–2023.

Fintech Career Accelerator Scheme

The HKMA launched the Fintech Career Accelerator Scheme in 2016 in collaboration with its strategic partners to expand the fintech talent pool in Hong Kong. The scheme provides internship and placement opportunities for university students and has received positive responses from universities and participating institutions. It benefitted more than 180 students in 2021.

Banking Stability

Industry Project Masters Network

As part of the “Fintech 2025” strategy, the Industry Project Masters Network (IPMN) scheme was piloted by the HKMA in September for fintech postgraduate students to take part in real-life fintech projects at banks. In collaboration with the fintech industry and academia, the HKMA designed the scheme to provide students with more hands-on experience, with the aim of developing and equipping emerging fintech talent with applicable knowledge, skills and experience. The IPMN scheme is expected to be officially launched in September 2022.

Banking Talent Programme

To ensure that the supply of banking talent would not be disrupted by the pandemic, the Banking Talent Programme was extended to cover fresh graduates, who were offered six-month work opportunities and professional training starting in September. The programme for graduates recruited in 2020 was also extended for six months to 31 August. These two rounds of the programme have benefitted more than 650 fresh graduates.

Connect banking workforce to the future of banking

Enhanced Competency Framework

The Enhanced Competency Framework was rolled out in 2016 with the aim of enhancing the overall level of professional competence in the banking industry and coping with the growing demand for qualified banking practitioners. Given the strong industry demand for fintech talent, a new Fintech module was introduced in December, bringing the number of modules to eight. Up to the end of 2021, more than 16,000 banking practitioners had obtained certifications in various professional areas under the Enhanced Competency Framework.

Connect key stakeholders together

Fintech Cross-Agency Co-ordination Group

The Fintech Cross-Agency Co-ordination Group was established by the HKMA and various industry key players under the “Fintech 2025” strategy. By connecting key stakeholders, the group provides a platform for facilitating the formulation of supportive policies for Hong Kong’s fintech ecosystem, including fintech talent development.

Centre for Green and Sustainable Finance

The Green and Sustainable Finance Cross-Agency Steering Group¹⁹ set up the Centre for Green and Sustainable Finance in July as a cross-sector platform to better co-ordinate the efforts of financial regulators, Government agencies, industry stakeholders and academia in capacity building and policy development.

¹⁹ See the *Sustainability* chapter on page 181 for more details.

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 following 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 functions of the Monetary Authority to maintain the stability and integrity of the monetary and financial systems of Hong Kong.

All the designated CSSs and the HKTR are treated as FMs in Hong Kong.

Monitoring and assessments

The HKMA oversees local FMs under its purview through off-site reviews, continuous monitoring, on-site examinations, and meetings with FMs' management. In doing so, the HKMA adopts international standards in its oversight framework. The Committee on Payments and Market Infrastructures (CPMI) of the Bank for International Settlements and the IOSCO Technical Committee published the Principles for Financial Market Infrastructures (PFMI)²⁰. The requirements under the PFMI are incorporated in the HKMA's guidelines for designated CSSs and trade repositories.

The HKMA has completed the PFMI assessments on the FMs under its oversight. All the FMs 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.

As the COVID-19 situation continued to evolve, the HKMA closely monitored the operations of the FMs and the sufficiency and appropriateness of their contingency arrangements during the year. The HKMA also continued to work with FMs to strengthen their endpoint security and cyber resilience in accordance with CPMI guidance and HKMA requirements²¹.

²⁰ The PFMI constitute the latest international standards for the oversight of FMs, including systemically important payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories.

²¹ See the *International Financial Centre* chapter on page 148.

Banking Stability

International participation

The HKMA is a member of the CPMI and participates in meetings, working groups and forums on FMI oversight matters. Throughout 2021, the HKMA participated in virtual CPMI meetings, which, among other things, discussed issues related to enhancing cross-border payments as well as digital currencies. The HKMA 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; the 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 2021, the HKMA attended virtual 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 System²² through the CLS Oversight Committee. During the year, the HKMA attended various virtual 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 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.

Separately, 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. During 2021, the Committee held two meetings and reviewed four regular reports and 36 accompanying oversight activities management reports, concluding 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.

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 2021, the HKMA achieved good progress in strengthening Hong Kong's status as a globally competitive international financial centre through a multi-pronged approach.

The HKMA unveiled "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. On the Faster Payment System, it has seen a surge in turnover during the year amid the COVID-19 pandemic.

On enhancing connectivity, significant progress was made during the year with the addition of the Cross-boundary Wealth Management Connect and Southbound Trading under Bond Connect to the suite of Connect schemes. Thanks to its world-class market infrastructure and the 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.

Also during 2021, the HKMA devoted significant efforts in creating new business opportunities to strengthen 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 is active in international and regional central banking and regulatory forums, contributing to global efforts in maintaining financial stability and promoting financial market developments.



International Financial Centre

OVERVIEW

The HKMA announced its “Fintech 2025” strategy, covering a series of initiatives to promote wide adoption of financial technology (fintech) and strengthen Hong Kong’s position as a fintech hub in Asia. The HKMA Fintech Facilitation Office (FFO), together with the banking departments, played a pivotal role in driving various key initiatives during the year including the following:



Promoting regulatory technology (Regtech) adoption



Rolling out the Tech Baseline Assessment to understand banks' adoption of fintech



Researching the application of wholesale Central Bank Digital Currency (CBDC) to cross-border payments



Conducting a study on the prospect of introducing retail CBDC (e-HKD) in Hong Kong



Developing the Commercial Data Interchange (CDI)



Enhancing talent development



Nurturing the fintech ecosystem with funding and policies



Strengthening cross-border collaboration in fintech



Expanding adoption of the Faster Payment System (FPS)

Hong Kong’s position as an offshore renminbi hub remained firm, with offshore renminbi businesses registering robust growth during the year. Inflows into renminbi assets continued to gather pace as the inclusion of onshore securities in major financial market indices continued. Hong Kong plays an indispensable role in facilitating international investors’ increased allocation to renminbi assets, with the Mainland–Hong Kong Connect schemes being widely accepted as the channels of choice for international investors to access onshore capital markets. In 2021, daily turnover under Northbound Bond Connect increased 34% to around RMB25.8 billion.

Following the success of Northbound Bond Connect, Southbound Bond Connect was launched in September, completing the two-way connection between the Mainland and international bond markets. In the same month, the People’s Bank of China (PBoC), the HKMA and the Monetary Authority of Macao promulgated the implementation details for the Cross-boundary Wealth Management Connect (Cross-boundary WMC) Scheme in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA). In October, eligible banks in Hong Kong started providing Cross-boundary WMC services together with their Mainland partner banks.

International Financial Centre

To enhance Hong Kong's role as a key offshore renminbi centre, a working group comprising the HKMA, the Securities and Futures Commission (SFC) and Hong Kong Exchanges and Clearing Limited (HKEX) was formed to conduct a feasibility study on promoting trading of renminbi-denominated equity securities in Hong Kong. A joint seminar was also co-organised by the PBoC and the HKMA in December, showcasing Hong Kong's status as an international financial centre and a leading renminbi business hub.

The HKMA continues to make progress towards strengthening the competitiveness of Hong Kong's financial platform. In particular, to increase Hong Kong's appeal as a preferred fund domicile, the HKMA worked closely with the Government and the financial industry to provide a more facilitating tax and regulatory environment for fund formation. Significant strides were also made in further elevating Hong Kong's position as a regional green and sustainable finance hub, and as a bond issuance centre. At the same time, the HKMA stepped up market outreach to promote Hong Kong's financial services to overseas and Mainland stakeholders.

Safe and efficient operation of financial infrastructure is fundamental for reinforcing Hong Kong's position as a leading international financial centre. In 2021, the four interbank Real Time Gross Settlement (RTGS) systems, the Central Moneymarkets Unit (CMU) and the Hong Kong Trade Repository achieved 100%¹ system availability, outperforming the target of 99.95%. Following the launch of Southbound Bond Connect in September, the CMU became the settlement and custodian service provider for transactions conducted under both Northbound and Southbound Bond Connect.

Adoption of the FPS continued to expand in 2021.

The number of registrations grew to 9.6 million at the end of 2021 and the average daily turnover for the year rose by 90% from 2020. 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 transaction volume, on top of a 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 15 licensed SVFs under the Payment Systems and Stored Value Facilities Ordinance (PSSVFO). During the year, the HKMA facilitated 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 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. Relevant factors, including feedback to this discussion paper and recommendations of relevant international bodies, will be taken into account when drawing up the appropriate regulatory regime.

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. For example, the HKMA chairs the Working Group on Financial Markets (WGFM) established under the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)². The HKMA also co-chairs the Policy and Standards Group of the Basel Committee on Banking Supervision (Basel Committee), the Non-Bank Monitoring Experts Group and the Financial Innovation Network of the Financial Stability Board (FSB), and leads a team that looks into supervisory issues associated with financial benchmark transition.

¹ About 99.98% if including downtime caused by external factors.

² The EMEAP is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region.

International Financial Centre

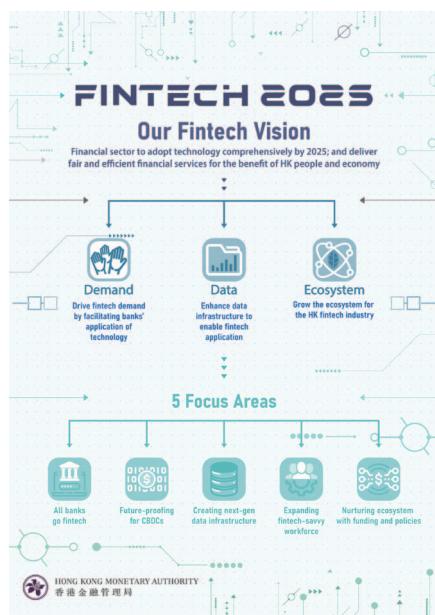
REVIEW OF 2021

Hong Kong as a fintech hub in Asia

Fintech 2025

In June, the HKMA unveiled its “Fintech 2025” strategy to drive fintech development in Hong Kong. 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:

- ◆ All banks go fintech
- ◆ Future-proofing Hong Kong for CBDCs
- ◆ Creating the next-generation data infrastructure
- ◆ Expanding the fintech-savvy workforce
- ◆ Nurturing the ecosystem with funding and policies



The HKMA’s “Fintech 2025” strategy drives fintech development in Hong Kong

Fintech Adoption in the Banking Sector

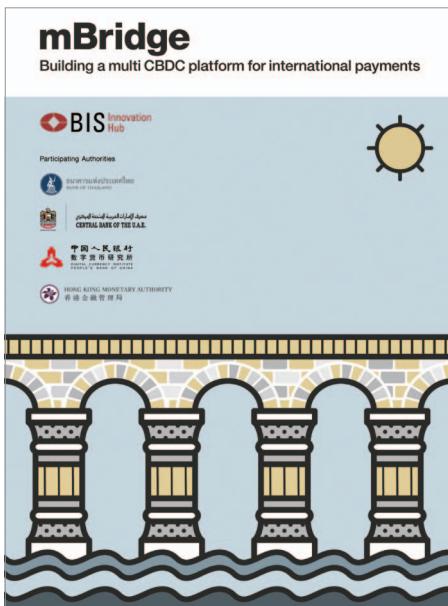
To support the “All banks go fintech” initiative of the “Fintech 2025” strategy, the HKMA rolled out the Tech Baseline Assessment in June 2021. The assessment aims to help the HKMA develop a better understanding of the current fintech landscape in the banking sector, and identify which fintech areas may warrant the HKMA’s support. All licensed banks with significant operations in Hong Kong were requested to develop a three-year plan for fintech adoption by the end of 2021.

During the year, the HKMA also continued to implement its two-year roadmap to promote Regtech adoption by banks in Hong Kong, and incorporate technology in its own supervisory processes to improve efficiency and effectiveness. See page 98 of the *Banking Stability* chapter for more details.

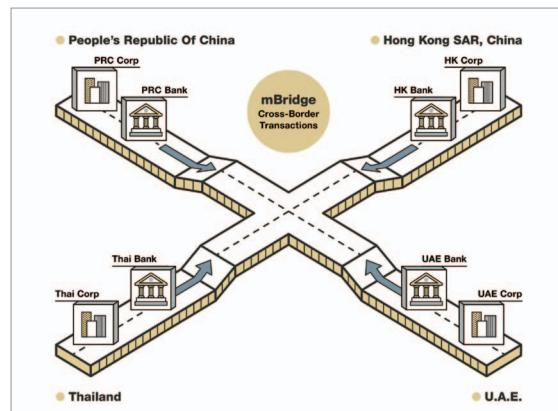
International Financial Centre

Wholesale Central Bank Digital Currency

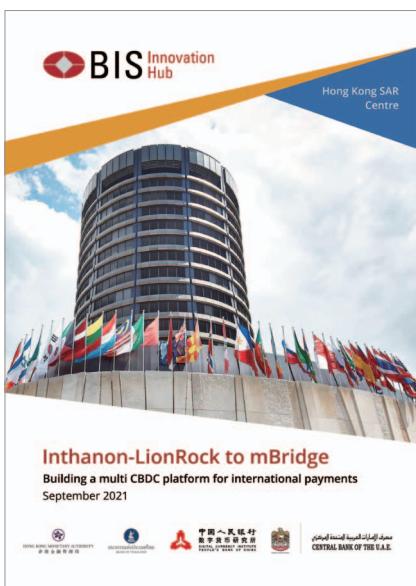
The HKMA and the Bank of Thailand expanded the scope of their joint research project with the joining of the Central Bank of the United Arab Emirates and the Digital Currency Institute of the PBoC in February 2021. Renamed as “Multiple Central Bank Digital Currency Bridge (mBridge)” and strongly supported by the Bank for International Settlements (BIS) Innovation Hub Centre in Hong Kong, the project further explores the capabilities of distributed ledger technology to facilitate real-time cross-border foreign exchange payment-versus-payment (PvP) transactions in a multi-jurisdictional context and on a 24/7 basis. A joint report was published in September to deliver the interim findings, followed by the publication of potential use cases and a future roadmap in November.



The brochure summarises potential use cases and outlines the future roadmap of the mBridge project



The participating authorities explore the feasibility of using mBridge for cross-border transactions



Joint report published by the HKMA, together with the participating authorities and BIS Innovation Hub Hong Kong Centre, presents the interim findings of the mBridge project

International Financial Centre

Retail Central Bank Digital Currency

To future-proof Hong Kong in terms of CBDC readiness, the HKMA started a study on the prospect of issuing retail CBDC in Hong Kong, i.e. e-HKD, covering both technical and policy considerations. In collaboration with the BIS Innovation Hub Centre in Hong Kong, the HKMA embarked on a study called *Project Aurum* to explore the technical aspect of issuing retail CBDC. Separately, an internal cross-departmental working group was set up to study the relevant technical, policy and legal issues. In October, the HKMA released a technical white paper titled *e-HKD: A technical perspective* to explore and invite comments on potential technical design options for issuing and distributing retail CBDC.

Furthermore, the HKMA supports the Digital Currency Institute of the PBoC on the technical pilot testing of using e-CNY for cross-boundary payments. This will help promote interconnection in the GBA and bring greater convenience to Hong Kong and Mainland tourists by enhancing the efficiency and user experience of cross-boundary payments.

Commercial Data Interchange

In July, the HKMA hosted a virtual symposium to encourage banks and SVF operators to join the CDI, a next-generation financial data infrastructure that aims to enable more efficient financial intermediation in the banking system. To further facilitate development and adoption, the launch of the CDI Innovation Hub was announced during the symposium. To facilitate small and medium-sized enterprise (SME) financing, the HKMA completed two phases of proof-of-concept study examining the technical feasibility of the CDI. Applying alternative data to facilitate credit assessment and the underwriting of loans, more than 550 SME loans exceeding HK\$900 million in total were approved by the participating banks during the study. Based on the encouraging results, the HKMA announced the pilot launch of the CDI in November.



SME owners commend the CDI for streamlining their loan applications

International Financial Centre

Talent development

To expand the fintech talent pool, the HKMA continued to run the Fintech Career Accelerator Scheme 2.0 in collaboration with its strategic partners³ to nurture young talent at various stages of their career development. More than 180 students benefitted from the scheme in 2021. Separately, the Industry Project Masters Network scheme was piloted in September to provide opportunities for master's degree students majoring in fintech to work on real-life fintech projects. To form strategic partnerships and foster collaboration in areas including fintech talent development, the HKMA entered into memorandums of understanding (MoUs) with four local universities in October.



Mr Colin Pou (middle), Executive Director (Financial Infrastructure) of HKMA, at the MoU signing ceremony with four local universities

Fintech Supervisory Sandbox

The use of Fintech Supervisory Sandbox (FSS) continued to rise during the year. As of end-December 2021, a total of 234 pilot trials of fintech initiatives had been allowed in the FSS since its launch in 2016, compared with 193 as of end-2020. As of end-December 2021, the HKMA had also received in total 666 requests to access the FSS Chatroom for supervisory feedback at the early stage of fintech projects since the introduction of the Chatroom in 2017. Over 63% of the Chatroom requests were made by technology firms (tech firms).

In November, the HKMA enhanced its FSS to provide funding support under the Innovation and Technology Commission's Public Sector Trial Scheme. The main objectives of the enhancements are to invest in innovations and encourage collaboration between banks and local tech firms.

GBA fintech pilot trial facility

The HKMA signed an MoU with the PBoC in October to provide a "one-stop platform" for financial institutions (FIs) and tech firms to conduct pilot trials of cross-boundary fintech initiatives, concurrently in Hong Kong and Mainland GBA cities. The platform allows FIs and tech firms to obtain early feedback from regulators and users, expediting the launch of fintech products and lowering development costs.

eTradeConnect

To provide importers and exporters with more convenient trade finance services, a proof-of-concept study was initiated to explore connecting eTradeConnect⁴ and the PBoC Trade Finance Platform. Building on the successful completion of phase 1 connectivity between the two platforms, phase 2 connectivity was completed in the fourth quarter of 2021. A pilot run was subsequently launched. Banks in Hong Kong and the Mainland have leveraged the connection to execute cross-boundary trade finance transactions.

³ Including Hong Kong Applied Science and Technology Research Institute, Hong Kong Cyberport Management Company Limited and Hong Kong Science and Technology Parks Corporation.

⁴ With the HKMA's facilitation, eTradeConnect, a blockchain-based trade finance platform, was officially launched in October 2018. It is funded by a consortium of 13 major banks in Hong Kong.

International Financial Centre

Faster payment system

Since the launch of the FPS in September 2018, the number of FPS participants had increased to 37 banks and 11 SVFs at end-2021. The number of registrations also grew steadily. As of 31 December 2021, there were 9.6 million registrations (Chart 1), up 40% year on year.

Adoption and turnover of the FPS kept growing alongside increased use of electronic payments amid the COVID-19 pandemic (Chart 2). The average daily turnover reached 673,000 real-time transactions (worth HK\$5.4 billion and RMB136 million) in 2021, 90% higher than that in 2020. The increased use was also spurred by a steady growth in acceptance of the FPS as a payment tool and a gradual extension in its scope of usage, from primarily person-to-person payments to bill, retail and business payments.

Chart 1 Registration of FPS proxy identifiers

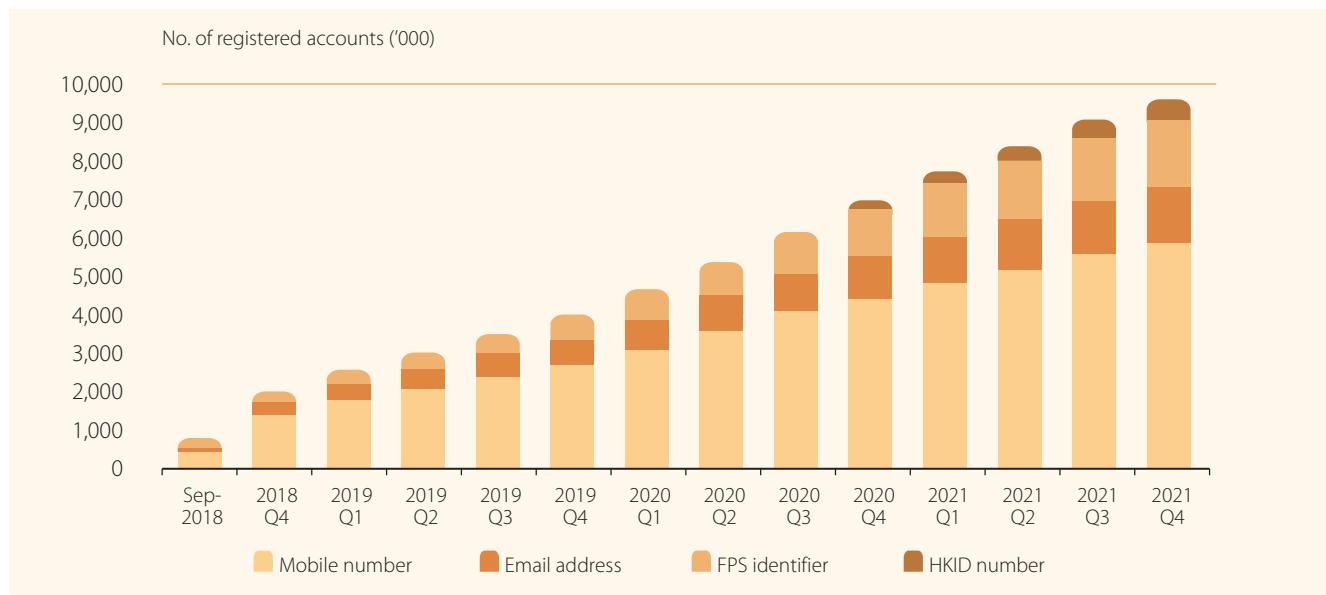


Chart 2 Average daily turnover of Hong Kong dollar real-time payments



International Financial Centre

The HKMA has been working closely with various government departments and the banking industry to broaden usage of the FPS. The Government has adopted the FPS for bill payments since November 2019, with a view to promoting the FPS and facilitating the public to make payments.

To settle their bills, members of the public can easily scan the QR code on their bills using a mobile banking or SVF e-wallet app. In 2021, 2.5 million Government bill payment transactions amounting to HK\$4.1 billion were made through the FPS, up 49% and 92% respectively from 2020.

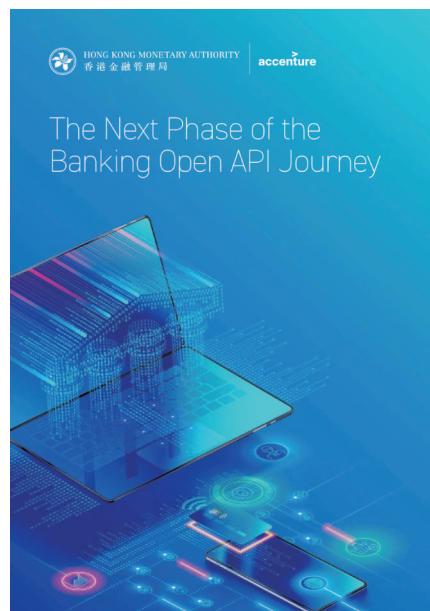
Since December 2020, the Government has extended FPS adoption to in-person payments made at physical counters. In 2021, six additional government departments started accepting FPS QR code payments at designated counters, self-help kiosks and parking meters. By the end of 2021, 10 government departments were accepting FPS QR code payments at various service points. More than 20,000 transactions worth around HK\$33 million were recorded in 2021. Going forward, the HKMA will continue to assist the Government to adopt the FPS in other use cases, such as online fee payments.

In another positive development, more merchants have adopted the FPS to support their business operations. Merchant payments surged to an average of 115,000 transactions⁵ per day in 2021, representing a 70% increase over 2020. The FPS is commonly used to pay bills, make in-app direct debits, and make payments for purchases completed online or via mobile apps. 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 significantly by 300% from 2020 to 2021.

To provide an environmentally friendly option to the public and support COVID-19 mitigation efforts, the HKMA worked with banks and SVFs to promote giving out electronic lai sees (e-laisees) via the FPS in early 2021. More information on the initiative can be found in the *Sustainability* chapter on page 198.

Open Application Programming Interface

The HKMA supported development and adoption of Open Application Programming Interface (API) by the banking sector, in line with the four-phase approach of the Open API Framework⁶. Banks continued to collaborate with third-party service providers on various innovative services using Phase I and II Open APIs. Separately, the HKMA concluded a study on the implementation of Phase III and IV Open APIs and published a report titled *The Next Phase of the Banking Open API Journey* on the findings in May 2021. The HKMA advocated a progressive approach for implementing Phase III and IV API functions. Participating banks started implementing the initial batch of API functions, covering deposit account information and online merchant payments, from December.



Study report titled The Next Phase of the Banking Open API Journey

⁵ The figure includes payments to the Government via the FPS.

⁶ The four phases of Open API are as follows: Phase I—Product information; Phase II—Customer acquisition; Phase III—Account information; and Phase IV—Transactions.

International Financial Centre

Virtual banking

Virtual banking is gaining traction in Hong Kong. As at the end of 2021, the eight virtual banks had collectively acquired 1.2 million personal and SME customers and attracted HK\$25 billion of customer deposits.

Cross-border collaboration, industry liaison and outreach

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. Considerable efforts were also made to further strengthen cross-border fintech collaboration. During 2021, the FFO organised 16 events, including panel discussions at Hong Kong FinTech Week 2021. These events and FinTech Week attracted over 20,000 attendees and more than four million online views. The FFO also spoke at 58 fintech-related events; held 932 meetings with other regulatory authorities, industry organisations, financial institutions, tech firms and startups; and handled 102 enquiries from market participants.



Mr Eddie Yue (left), Chief Executive of HKMA, moderates a panel discussion at Hong Kong FinTech Week 2021

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

Hong Kong maintained its leading position in offshore renminbi business, underpinned by its deep pool of offshore renminbi liquidity, efficient financial infrastructure and multitude of cross-boundary portfolio flow channels. During the year, offshore renminbi business gained momentum, with bank deposits, trade settlement, payments and bond issuance recording solid expansion.

- ◆ **RMB1.5 trillion**

average daily turnover of RMB RTGS system,
reaching a historical high

- ◆ **RMB7.1 trillion**

RMB trade settlement handled by banks in Hong Kong, **+12%**

- ◆ **RMB944.7 billion**

RMB deposits, including outstanding certificates of deposit, **+25%**

- ◆ **RMB163.6 billion**

outstanding RMB loans, **+8%**

- ◆ **RMB109.6 billion**

offshore RMB bond issuance, **+87%**

- ◆ **70%+**

of global RMB SWIFT payment

Northbound Bond Connect continued to serve as a major channel for international investors to trade in the Mainland bond market using market infrastructures and financial services in Hong Kong. Driven by the inclusion of renminbi bonds in multiple major fixed income indices, 3,233 investors had registered under Bond Connect by end-2021, up 37% from end-2020. Daily turnover under Northbound Bond Connect averaged RMB25.8 billion in 2021 (a 34% increase from 2020) and accounted for 56% of overall trading turnover by foreign investors.

International Financial Centre

During the year, Northbound Bond Connect trading was further facilitated by the introduction of an Enhanced CNY Conversion Service, which allows investors to engage up to three banks to conduct onshore currency conversion and foreign exchange hedging. Other enhancements included the extension of the cut-off time for securities instructions and Hong Kong dollar RTGS funding instructions, and the introduction of a “dealer pay model”, which allows trading fees to be built into quoted bond prices. In September, a new electronic trading platform was added to support Northbound Bond Connect. These enhancements offered more convenience and flexibility for investors under Northbound Bond Connect, and drove further inclusion of onshore assets in major financial indices.

Following the success of Northbound Bond Connect, Southbound Bond Connect was launched in September, providing Mainland institutional investors with a convenient channel to get exposure to offshore fixed income through Hong Kong via the connection between Mainland and Hong Kong financial infrastructure institutions. Southbound Bond Connect promotes further mutual access between the Mainland and Hong Kong financial markets and facilitates the development of the local bond market by bringing more Mainland investors and bond issuers to Hong Kong. The scheme has received a positive response and operations have been smooth, with transactions covering major bond products tradeable in the Hong Kong market and denominated in multiple currencies.

Following three rounds of industry consultation, the PBoC, the HKMA and the Monetary Authority of Macao promulgated the implementation details for the Cross-boundary WMC in September. The Cross-boundary WMC deepens the connectivity of the Mainland and Hong Kong financial markets in the area of wealth management and offers a convenient channel for individual investors in the GBA to invest in more diversified wealth management products

across the boundary. Up to end-2021, 19 eligible Hong Kong banks have started offering Cross-boundary WMC services together with their Mainland partner banks. More than 21,000 individual investors (including Hong Kong and Macao) participated in the scheme and more than 5,000 cross-boundary remittances (including Hong Kong and Macao) totalling more than RMB400 million were completed. Considering this was the first time many retail investors were conducting cross-boundary investments, the authorities had stepped up investor education efforts together with the industry, and established sound mechanisms for regulatory co-operation and enforcement to protect the rights and interests of investors.

In October, the Shenzhen Municipal People’s Government issued a total of RMB5 billion in offshore municipal government bonds in Hong Kong, including RMB3.9 billion of green bonds. It was the first time a Mainland municipal government issued bonds outside the Mainland. This marks a significant step in strengthening Hong Kong as the global hub for offshore renminbi business.

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 was formed in October to conduct a feasibility study on promoting trading of renminbi-denominated equity securities in Hong Kong.

The PBoC and the HKMA co-organised a thematic seminar in December to discuss the positioning and future development of Hong Kong as an international financial centre and an offshore renminbi business hub. The seminar took place in Hong Kong and Beijing through an online connection, with in-depth exchanges among senior officials from financial regulators and representatives from international organisations, financial institutions and academia.

International Financial Centre

Hong Kong as an asset and wealth management centre

The HKMA continues to reinforce Hong Kong's status as an asset and wealth management hub through platform building and outreach.

Hong Kong is Asia's largest private equity hub outside the Mainland, with around US\$182 billion in capital under management and around 600 private equity firms as of December 2021. The HKMA continues to work with stakeholders to enhance Hong Kong's private equity platform. Since the introduction of the Limited Partnership Fund regime in August 2020, the HKMA has been striving to boost industry awareness of the new fund vehicle and facilitate its adoption by industry firms. By the end of 2021, 409 Limited Partnership Funds had been registered. Meanwhile, the tax concession regime for carried interest came into operation on 7 May 2021. This, coupled with the fund-level tax exemption regime rolled out in 2019, provides a competitive tax environment to facilitate the development of private equity funds.

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. The HKMA is constantly working to meet the needs of family offices. For example, the HKMA is undertaking initiatives with various Government agencies and the financial industry to foster a facilitating environment for family offices to set up and operate in Hong Kong; this most recently involved a review of relevant tax arrangements in September.

Hong Kong as a green and sustainable finance hub

In recent years, the HKMA has been pursuing various initiatives to enhance Hong Kong's position as a regional green and sustainable finance hub. See pages 180 to 183 of the *Sustainability* chapter for more details.

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.

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, including key industry stakeholders such as multilateral financial agencies and development banks, project developers and operators, public sector entities and professional service firms.

Full list of Infrastructure Financing Facilitation Office partners:



International Financial Centre

Hong Kong's bond market development

Hong Kong as an international bond hub

According to the International Capital Market Association, Hong Kong was, for six consecutive years, the largest centre for arranging international bond issuance by Asian issuers. Issuance volume reached a record high of US\$207 billion in 2021, capturing 34% of the market. In 2021, Hong Kong also captured 25% of bond listings resulting from international bond issuances in Asia.

Government Green Bond Programme

Following the establishment of the world's first government Global Medium Term Note Programme dedicated to green bond issuances in early 2021, the HKMA assisted the Government to issue close to US\$6.5 billion equivalent of institutional green bonds in February and November 2021. More details can be found on page 183 of the *Sustainability* chapter.

Government Bond Programme

To promote the sustainable development of the bond market in Hong Kong, the Legislative Council approved a resolution in July to raise the borrowing limit of the Government Bond Programme from HK\$200 billion to HK\$300 billion.

During the year, the HKMA arranged nine tenders of institutional government bonds with a total nominal value amounting to HK\$19.4 billion, including the inaugural tender of HK\$1 billion of Floating Rate Notes indexed to the Hong Kong Dollar Overnight Index Average (HONIA) to promote the usage of HONIA as an alternative reference rate in Hong Kong. As at the end of 2021, the total nominal amount of outstanding institutional bonds was HK\$85.5 billion.

On the retail front, the HKMA arranged the issuance of iBond (an inflation-linked retail bond) in June in the amount of HK\$20 billion and Silver Bond⁷ in August in the amount of HK\$30 billion to Hong Kong residents, with a tenor of three years. The eligible age for subscribing to Silver Bond was lowered from 65 to 60. The iBond issuance attracted more than 709,000 applications with a total subscription amount of over HK\$53.9 billion, and the Silver Bond issuance attracted more than 256,000 applications with subscription amounts exceeding HK\$67.8 billion. The total nominal amount of retail bonds outstanding as at the end of 2021 was HK\$82.7 billion.

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 review of the Foreign Exchange Global Code, and the publication of the updated Code in July. 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 HONIA-linked market. These efforts included the inaugural issuance of the HONIA-indexed floating rate note under the Government Bond Programme in November.

⁷ First introduced in 2016, Silver Bond aimed to provide steady returns to Hong Kong residents aged 65 or above. Silver Bond is a three-year bond whose semi-annual interest payments are linked to the average annual inflation rate, subject to a minimum interest rate.

International Financial Centre

Over-the-counter derivatives market

The HKMA closely works with the SFC to develop detailed rules for implementing the regulatory regime for the OTC derivatives market in Hong Kong to reduce systemic risk and enhance transparency in the OTC derivatives market. Different aspects of the regulatory regime have been introduced in phases. The first phase of mandatory clearing and the second phase of mandatory reporting took effect in September 2016 and July 2017 respectively. Following public consultation in June 2021 on further enhancements to the regime, an updated list of financial service providers under the mandatory clearing regime came into effect in January 2022.

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 facilitate 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.

Outreach initiatives

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 2021, through 79 webinars, speaking engagements and individual engagements, the HKMA reached out to local and international audiences, including nearly 20,000 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



79

~1-2 events/week throughout 2021

Audience Reached



**nearly
20,000**

Channelled through:

- Institutional banks
- Industry associations
- Chambers of commerce
- Individual engagements

Senior Executives



33%

Whose ripple effect will cascade down their organisations

Sectors Covered



11

Including:

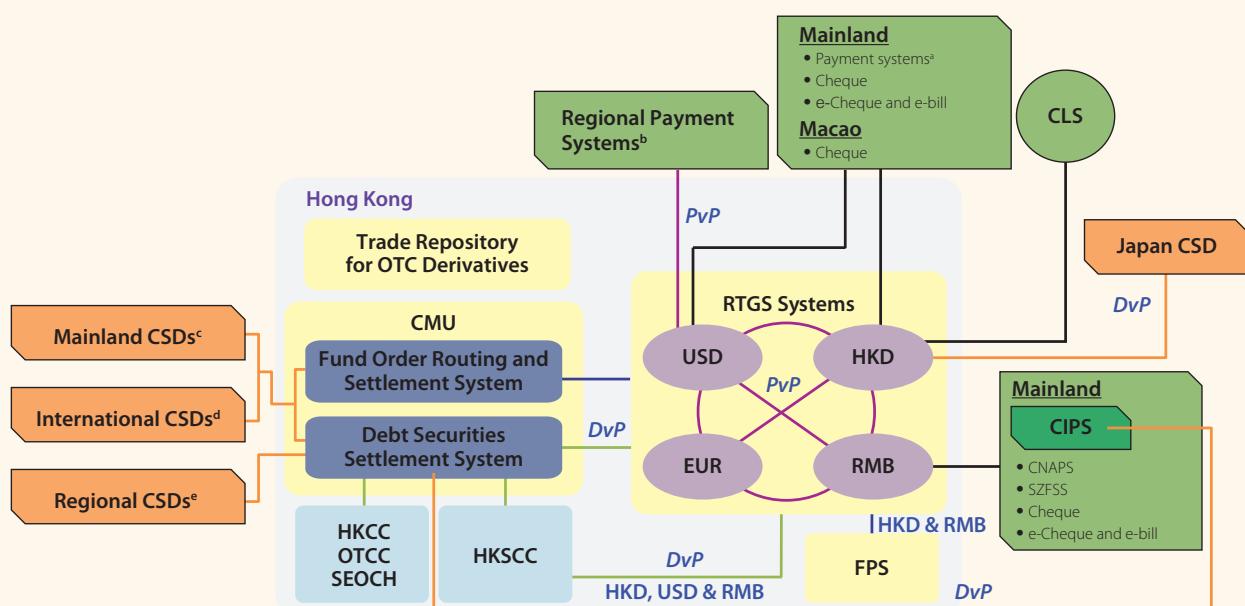
- Banks
- Asset managers / Hedge funds / Private equity funds
- Asset owners
- Professional service providers
- Corporates

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, 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 a: CDFCPS, RTGS links with Shenzhen and Guangdong

Note b: PvP links with Malaysia, Thailand and Indonesia

Note c: Cross-boundary links with CCDC and SHCH (Bond Connect) and CSDC (Mutual Recognition of Funds)

Note d: Cross-border links with Clearstream and Euroclear

Note e: 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)

CSD – Central securities depository

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

International Financial Centre

Hong Kong dollar RTGS system

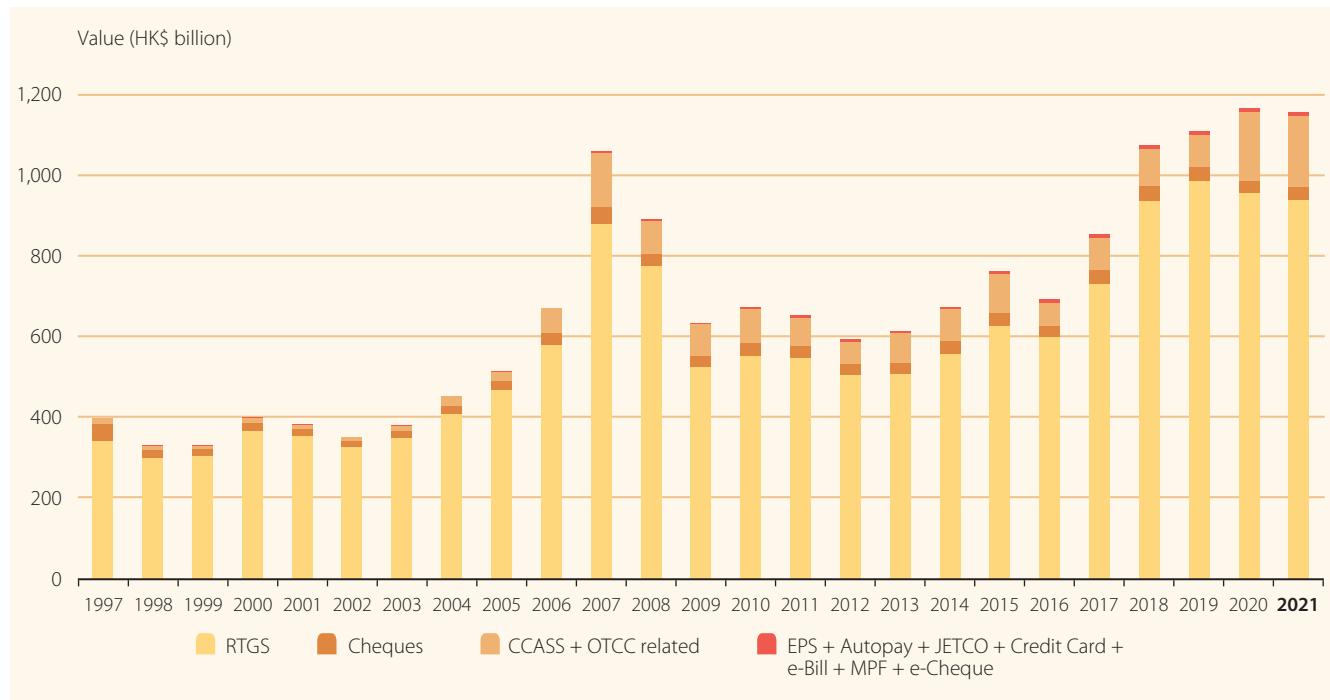
The Hong Kong dollar Clearing House Automated Transfer System (CHATS), which operates on an RTGS basis, is responsible for clearing Hong Kong dollar interbank payments. It ran smoothly and efficiently in 2021, with a daily average transaction value of HK\$939.7 billion (30,593 items), compared with HK\$956.1 billion (29,491 items) in 2020.

In addition to settling large-value payments, CHATS handles daily bulk clearing and settlement of stock market transactions, Mandatory Provident Fund 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\$5.4 billion (672,760 items) in 2021.

Chart 4 Hong Kong dollar RTGS system average daily turnover



International Financial Centre

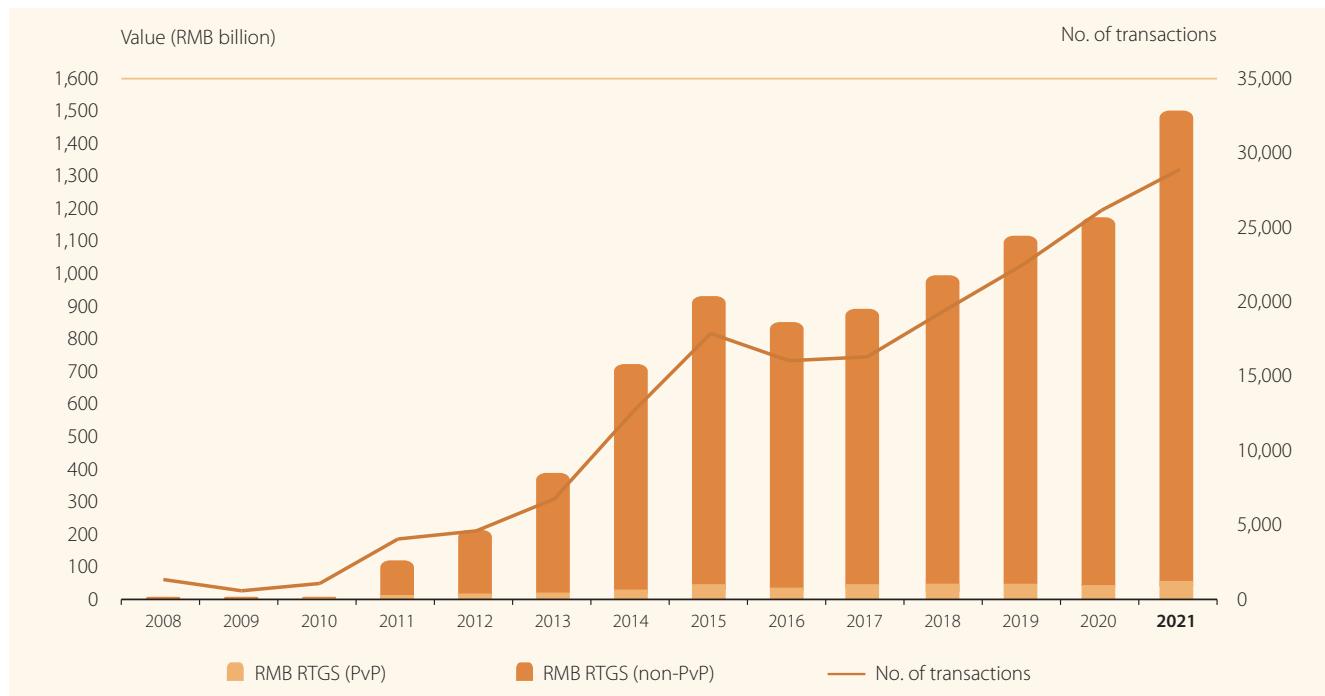
RTGS systems for other currencies in Hong Kong

The renminbi, US dollar and euro RTGS systems all operated smoothly during the year. The cut-off time of the renminbi RTGS system has been 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 allows 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 RMB290 billion in 2021, accounting for 19% 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



International Financial Centre

Chart 6 US dollar RTGS system average daily turnover

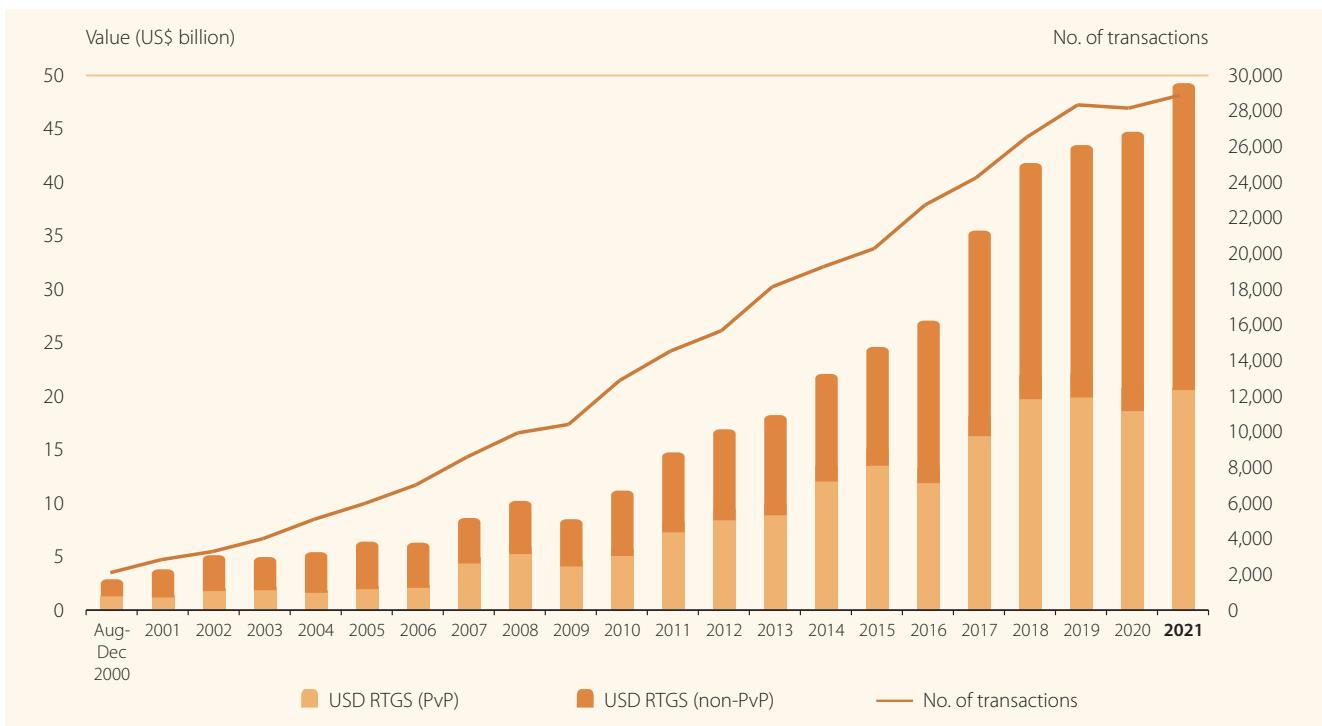
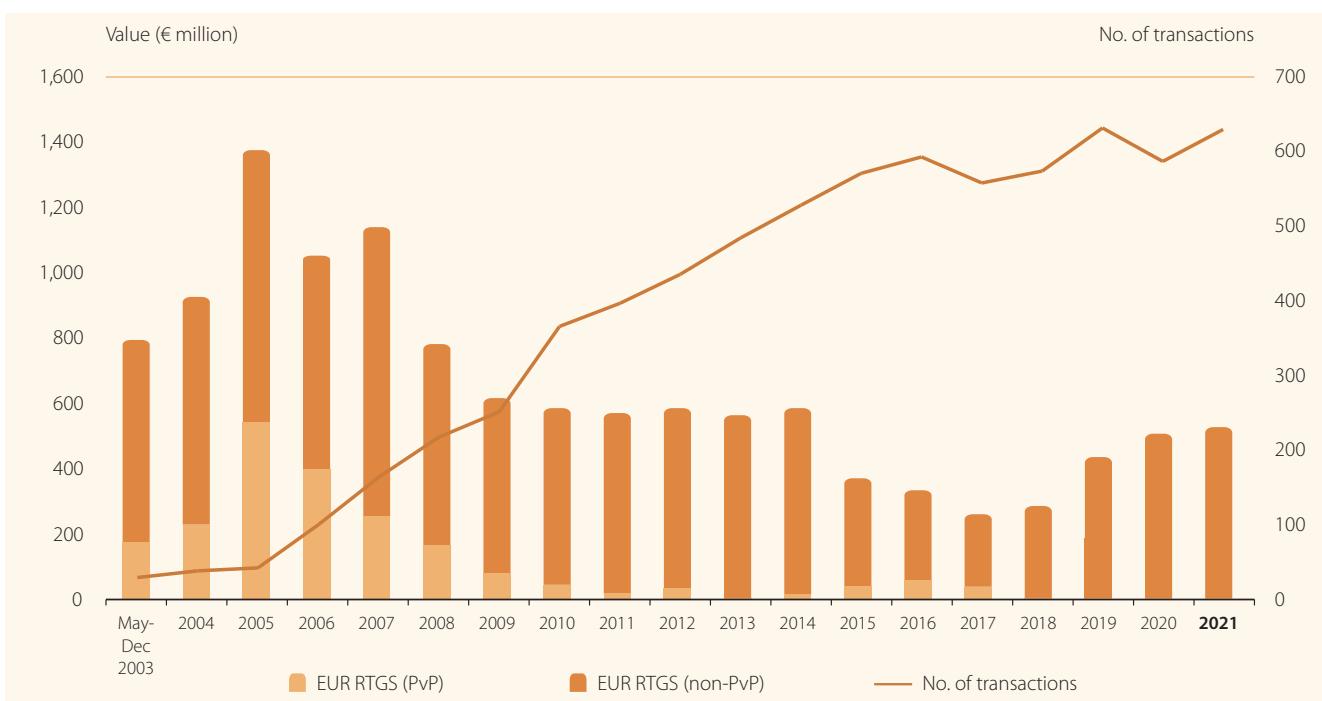


Chart 7 Euro RTGS system average daily turnover



International Financial Centre

Table 1 RTGS systems for other currencies

RTGS system	Launch date	Settlement institution or clearing bank	Number of participants at end-2021	Average daily turnover in 2021	Average daily transactions in 2021
Renminbi RTGS system	June 2007	Bank of China (Hong Kong) Limited	Direct: 213	RMB1,522.6 billion	29,307
US dollar RTGS system	August 2000	The Hongkong and Shanghai Banking Corporation Limited	Direct: 116 Indirect: 104	US\$49.5 billion	29,011
Euro RTGS system	April 2003	Standard Chartered Bank (Hong Kong) Limited	Direct: 38 Indirect: 19	€527 million	631

Like the Hong Kong dollar FPS, 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 RMB136.0 million (729 items) in 2021.

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 also established three cross-border PvP links. PvP greatly improves settlement efficiency and eliminates settlement risk arising from time lags in settlements and time zone differences⁸. In 2021, the transaction values of Hong Kong dollar-, renminbi- and US dollar-related PvP transactions amounted to approximately HK\$13,341 billion, RMB12,649 billion and US\$4,881 billion respectively while it was nil for euro-related PvP transactions.

⁸ Commonly known as Herstatt risk.

International Financial Centre

Payment links with the Mainland

The HKMA works closely with Mainland authorities to provide efficient cross-boundary payment links (Chart 8) to meet growing demand. In 2021, the average daily turnover of various system links, including RTGS cross-boundary links with the Mainland's Domestic Foreign Currency Payment System, recorded a total value equivalent to around HK\$1 billion.

The Hong Kong dollar and US dollar RTGS system links with Shenzhen and Guangdong handled more than 11,000 transactions, with a total value equivalent to HK\$197.7 billion.

The joint cheque-clearing facilities provide a clearing service for cheques drawn on banks in Hong Kong and presented in Shenzhen and Guangdong. In 2021, these facilities processed about 7,000 Hong Kong dollar, renminbi and US dollar cheques, with a total value equivalent to around HK\$0.9 billion.

Payment links with Macao

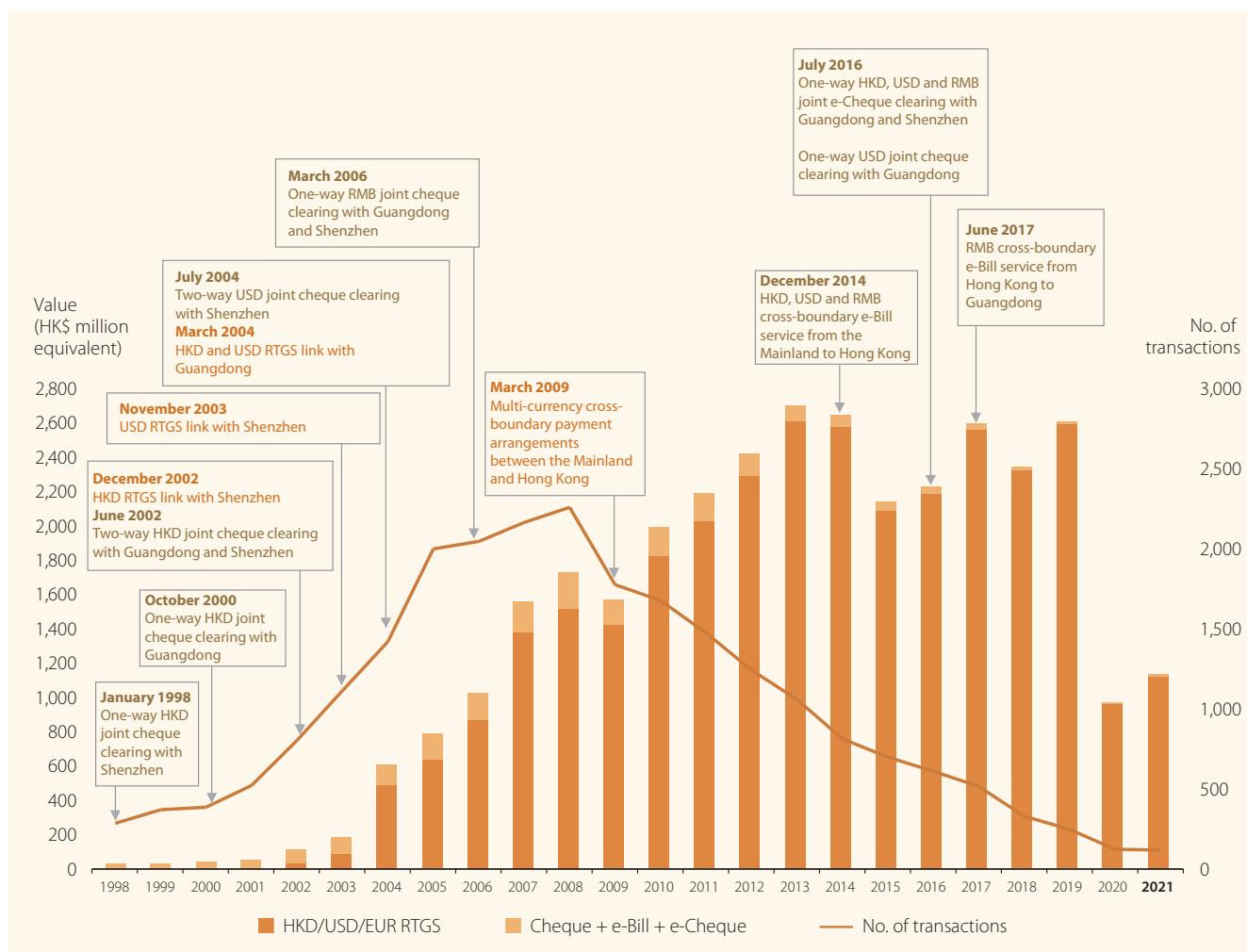
The one-way joint clearing facility between Hong Kong and Macao was launched in 2007 for Hong Kong dollar cheques, and in 2008 for US dollar cheques. In 2021, Hong Kong dollar cheques and US dollar cheques amounting to about HK\$9 billion and about US\$41 million respectively were cleared.

Payment link with Japan

To support real-time settlement of Japanese Government Bond transactions in Hong Kong dollar, the HKMA and Bank of Japan launched a delivery-versus-payment (DvP) link for cross-currency securities transactions between Hong Kong dollar CHATS and the Bank of Japan Financial Network System Japanese Government Bond Services on 1 April 2021. The DvP link facilitates banks to conduct cross-currency repo transactions to obtain Hong Kong dollar funds.

Chart 8

Average daily turnover in cross-boundary arrangements with the Mainland



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, 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 central securities depositories outside Hong Kong. In 2021, the CMU processed an average daily value of HK\$15.6 billion in 210 secondary market transactions (Chart 9). Among the debt securities lodged with the CMU at the end of the year, the outstanding amount of Exchange Fund Bills and Notes was HK\$1,148.6 billion, the outstanding amount of debt securities issued by public and private sectors was equivalent to HK\$865.2 billion and the outstanding amount of Government Bonds was HK\$197.6 billion (Chart 10). To help Hong Kong capitalise on the further opening up of the Mainland financial market and to support new business initiatives, the HKMA started to upgrade the CMU system by phases. In 2021, a seamless interface between the CMU and the Mainland's Cross-Border Interbank Payment System was established to provide DvP service to support Southbound Bond Connect transactions.

Over-the-counter derivatives trade repository

By the end of 2021, the Hong Kong Trade Repository had recorded 3,251,179 outstanding OTC transactions, compared with 2,821,191 in 2020. 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 local trade repository continued to meet international standards and best practices.

Chart 9 CMU average daily turnover

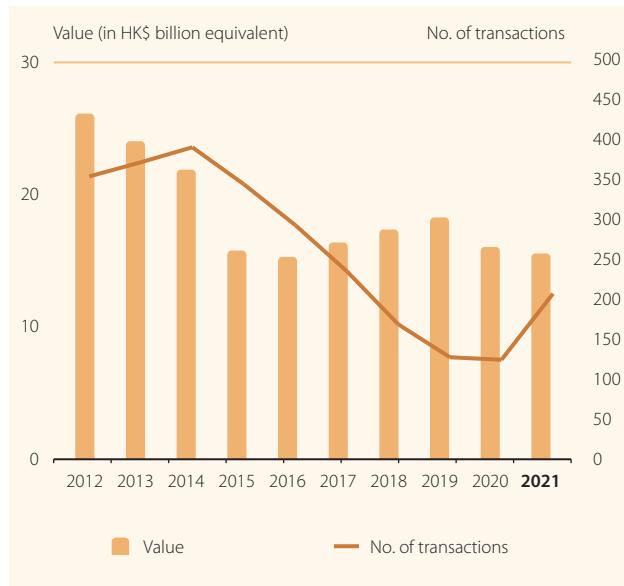
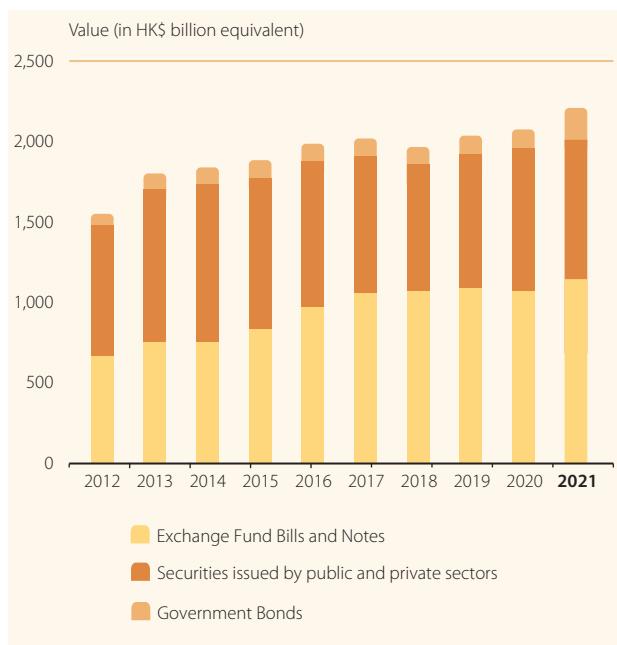


Chart 10 Outstanding amount of CMU issues



International Financial Centre

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 the relevant market developments.

During the year, the HKMA followed 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 anti-money laundering and counter-financing of terrorism (AML/CFT) controls. In particular, a circular was issued in September to share observations from the thematic reviews of SVF licensees' AML/CFT controls over the prepaid card business. The HKMA also conducted risk-sensitive supervision, undertaking nine desk-based reviews on the SVF licensees' AML/CFT controls. Together with these supervisory measures, the HKMA also exercised its power under the PSSVFO as warranted and in a proportionate manner, and has taken disciplinary action against an SVF licensee in December for deficiencies in AML/CFT controls.

In support of the Consumption Voucher Scheme announced in the Financial Secretary's 2021–22 Budget, 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 66.4 million as at the end of 2021. In the fourth quarter, 1.7 billion transactions totalling HK\$80.5 billion were recorded (Chart 11).

Chart 11 Growth trend of the SVF industry in 2021



Table 2 Register of SVF licensees

(in alphabetical order) (as at 31 December 2021)

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
- 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 SVFs)^a

- 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, a licensed bank is regarded as being granted a licence.

International Financial Centre

Retail payment systems

The Monetary Authority has designated six RPSs, which process payment transactions involving participants in Hong Kong under the PSSVFO, 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.

Table 3 **System operators of designated RPSs**
(in alphabetical order) (as at 31 December 2021)

American Express
EPS Company (Hong Kong) Limited
Joint Electronic Teller Services Limited
Mastercard
UnionPay International
Visa

Crypto-assets particularly payment-related stablecoins

The rapid development of crypto-assets, particularly stablecoins, has become a topic of keen interest internationally. The HKMA has been actively participating in the relevant international discussion, keeping in view the latest market developments, and considering the appropriate regulatory framework for Hong Kong, noting potential risks that these products might pose to monetary and financial stability, anti-money laundering efforts and user protection.

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. Relevant factors, including feedback to this discussion paper and recommendations of relevant international bodies, will be taken into account when drawing up the appropriate regulatory regime.

Electronic cheques

The use of electronic cheques (e-Cheques) was steady during 2021. To promote wider adoption, the HKMA has been working closely with potential third-party service providers to explore the use of e-Cheque open API service to facilitate presentation of e-Cheques in the Mainland.

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 2021, 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), and the GBA and the Mainland.

A diverse range of activities was organised under the AoF's Leadership Development Programme: 15 seminars and discussion panels in virtual and hybrid format were held, including nine sessions of the Distinguished Speakers Series featuring world-renowned speakers¹⁰ and one episode of the Interview Series under the theme *Navigating Through Uncertainties and Chaos*¹¹. The discussions covered global geo-political and economic developments and financial market issues, as well as the speakers' personal stories of success. A new four-module Thematic Programme on Fintech and Digitalisation was organised, where 14 leaders from the industry and academia shared their insights and practical experience. The AoF also co-organised a number of events with international and local organisations, including the BIS, the Civil Service College, the Insurance Authority and The University of Hong Kong.

⁹ The AoF is set up with full collaboration amongst the HKMA, the Securities and Futures Commission, the Insurance Authority and the Mandatory Provident Fund Schemes Authority. It brings together the strengths of the academia, the industry, professional training institutes and the regulatory community to develop financial leadership and promote research collaboration.

¹⁰ Speakers of the Distinguished Speakers Series included Mr Ashley Alder (SFC), Mr John Waldron (Goldman Sachs), Mr Larry Fink (BlackRock), Mr Ray Dalio (Bridgewater Associates), Mr John Dugan (Citigroup), Mr David Rubenstein (The Carlyle Group), Sir Howard Davies (NatWest Group), Mr Mark Tucker (HSBC) and Professor Masaaki Shirakawa (former Governor of the Bank of Japan).

¹¹ The episode featured Professor Edward Chen (HKU SPACE).

International Financial Centre

To benefit a wider audience, most of the events were open to non-AoF Members and video recordings of many events were made accessible from the AoF's website or YouTube channel. Delivery through digital channels enabled the AoF to expand its reach to a much broader spectrum of stakeholders not only in Hong Kong but also in the Mainland and the rest of the world. For example, the HKIMR-AoF Expert Speakers Series on *Renminbi Exchange Rate Formation Mechanism and Exchange Rate Outlook* in August was broadcast live on online financial platforms, attracting over 1.16 million viewers. More efforts put into publicising AoF activities digitally, through upgrading the AoF YouTube channel, website and quarterly newsletters, and actively publishing posts on the AoF LinkedIn page, have also helped the AoF to gradually build up its brand 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 2021, the Hong Kong Institute for Monetary and Financial Research (HKIMR), the research arm of the AoF, published two applied research reports that explored algorithmic and high-frequency trading in Hong Kong's equity market, and artificial intelligence and big data in the financial services industry in the Asia-Pacific region. The research findings were widely disseminated to local and international market participants, regulators and academics through a variety of channels, including panel discussions at large-scale events (such as Hong Kong FinTech Week 2021), webinars and through social media. The response from the financial community on both reports was positive and encouraging. In addition, the HKIMR published three applied research papers that covered topics including ESG, and market microstructure.



Mr Agustín Carstens (left), General Manager of BIS, discusses the uneven recovery from COVID-19 among the world economies, and Mr Eddie Yue (right), Chief Executive of HKMA, shares the HKMA's green finance work at the AoF's Economic Recovery from COVID-19 and Beyond webinar



Mr Larry Fink, Founder, Chairman, and CEO of BlackRock, talks about a "tectonic shift" towards sustainable investment, how BlackRock analysed investees' exposure to climate risks and green investment opportunities at an AoF webinar



The panel session on AI and Big Data Adoption in APAC: A Talent Development Perspective at Hong Kong FinTech Week 2021

International Financial Centre

International and regional co-operation

Participation in 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 Meeting, 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 Non-bank Monitoring Experts Group that 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, and 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.

Under the advocacy of the G20, the FSB co-ordinated with the relevant stakeholders, including the Committee on Payments and Market Infrastructures under the BIS, to begin a comprehensive study on enhancing cross-border payments. The HKMA, as a member of the Task Force on Cross-border Payments set up by the Committee on Payments and Market Infrastructures, contributed to the development of building blocks and a 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 Financial Stability Institute Advisory Board, the Markets Committee, the Committee on the Global Financial System, as well as 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 its first Centres in Hong Kong. The Hub 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 reorientation of the BIS Asian Office since 2019 has brought deeper engagement and closer collaboration with Asian central banks.

Separately, the HKMA assumed the co-chairmanship of the Policy and Standards Group of the Basel Committee in January. The group will lead the work on developing and implementing prudential standards. For details about the HKMA's participation in the Basel Committee, see the *Banking Stability* chapter on pages 99 to 102.

International Financial Centre

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. The WGFM makes policy recommendations on central bank services as well as developments in the foreign exchange, money and bond markets, and has been promoting regional bond market development through the Asian Bond Fund initiative.

As part of its WGFM chairmanship, the HKMA steered studies on implications of financial benchmark reforms, and US dollar liquidity and funding dynamics in the EMEAP region, incorporating pertinent market observations after the COVID-19 outbreak. The HKMA was also appointed chair of the 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 has 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 and ASEAN+3¹³ Chiang Mai Initiative Multilateralisation (CMIM)¹⁴. Effective 1 January 2021, the IMF Executive Board approved doubling the NAB credit arrangement through to 2025. Meanwhile, further enhancements were made to optimise the operation of the CMIM¹⁵.

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.

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 now stands at US\$240 billion.

¹⁵ 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.

Reserves Management

The global financial markets embarked on a recovery path in 2021. Although the global economy continued to be affected by the evolving COVID-19 pandemic situation, a number of factors, including an increasing vaccination rate as well as accommodative monetary policies and fiscal measures around the world, have contributed to notable recovery in the global economy and financial markets. Against this background, a number of overseas equity markets achieved record highs during the year, and the Exchange Fund's overall equity holdings were able to achieve a decent return despite the sluggish performance in Hong Kong equities.

During 2021, the Exchange Fund recorded an investment income of HK\$191.9 billion, representing an investment return of 4.1%.



Reserves Management

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

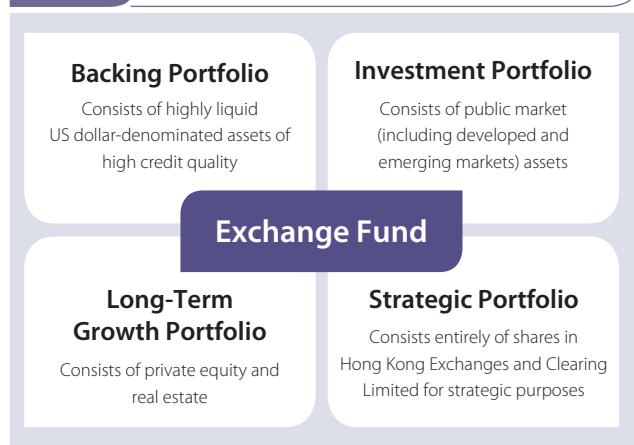
Investment objectives and portfolio structure

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 Exchange 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 HKMA has put in place a cap¹ to guide the pace of diversification into the LTGP since its inception. As the LTGP has become increasingly mature in investment scale and asset diversity, the EFAC decided in January 2022 to replace the cap by a target asset allocation that is determined concurrently with that of other asset classes, subject to prudent risk management principles.

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.

¹ The cap for the market value of investments under the LTGP was set at the aggregate of one-third of the accumulated surplus of the Exchange Fund, and the portion of the placements by the Future Fund and subsidiaries of the Exchange Fund linked to the LTGP.

Reserves Management

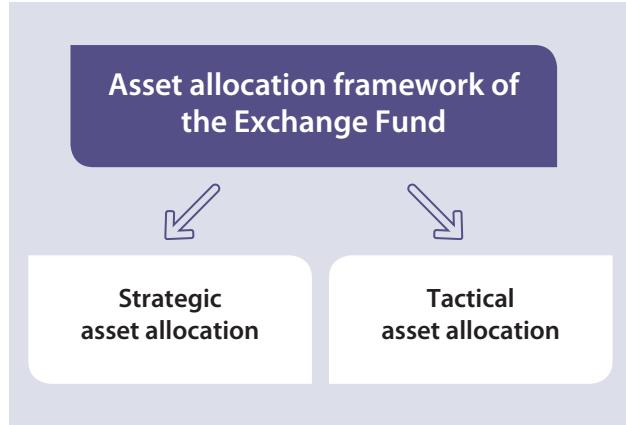
Placements with the Exchange Fund

The Exchange Fund, from time to time, accepts placements by Fiscal Reserves, Government funds and statutory bodies. The interest rate is generally linked to the performance of the IP², with the major exception of the Future Fund³, 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 40:60 in 2021.

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 error⁴ 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 (Figure 2).

Figure 2 Asset allocation of the Exchange Fund



² 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).

³ 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.

⁴ “Tracking error” measures how closely a portfolio follows its benchmark.

Investment management

Direct investment

The HKMA’s Exchange Fund Investment Office houses its investment and related risk management functions. Exchange Fund Investment Office staff members directly manage about 71% of the investments of the Exchange Fund, comprising the entire BP and part of the IP. This part of the IP 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 29% 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.

Reserves Management

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 supports 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 *Sustainability* chapter on pages 184 to 191.

PERFORMANCE OF THE EXCHANGE FUND

The financial markets in 2021

Global equity markets rose sharply and hit new record highs on the back of ultra-loose monetary policies and fiscal measures, driving an accelerated recovery of the global economy and financial markets. However, Hong Kong and Mainland equity markets underperformed amid market reforms. The Standard & Poor's 500 Index in the US rose by 27%, while the Hang Seng Index in Hong Kong dropped by 14%.

For the bond markets, rising inflation expectations and tapering of asset purchases by the US Federal Reserve (Fed) led to a rise in US Treasury yields and falling bond prices during 2021. Ten-year US Treasury yields increased by about 60 basis points from 0.9% at the beginning of the year to 1.5% at the end of the year.

In the currency markets, the US dollar strengthened against other major currencies, particularly towards the end of 2021, on the back of expectations about the Fed's tapering pace. In particular, the euro and the yen depreciated by 7.1% and 10.3% against the US dollar respectively.

The performance of major currency, bond and equity markets in 2021 is shown in Table 1.

Table 1 2021 market returns

Currencies

Appreciation (+)/depreciation (-) against US dollar	
Euro	-7.1%
Pound sterling	-0.9%
Renminbi	+2.6%
Japanese yen	-10.3%

Bond markets

Relevant US Government Bond (1–30 years) Index	-2.6%
--	-------

Equity markets^a

Standard & Poor's 500 Index	+26.9%
DAX Index	+15.8%
FTSE 100 Index	+14.3%
TOPIX Index	+10.4%
MSCI Emerging Markets Index	-4.6%
Hang Seng Index	-14.1%

a. Market performance on equities is based on the index price change during the year.

Reserves Management

The Exchange Fund's performance

The Exchange Fund recorded an investment income of HK\$191.9 billion in 2021. This comprised gains on bonds of HK\$12.6 billion, net gains on equities of HK\$47.8 billion (with gains of HK\$68.8 billion from foreign equities, and losses of HK\$21.0 billion from Hong Kong equities), a positive currency translation effect of HK\$16.8 billion on non-Hong Kong dollar assets and gains of HK\$114.7 billion on other investments held by the investment-holding subsidiaries of the Fund. Separately, the Strategic Portfolio recorded a valuation gain of HK\$3.1 billion.

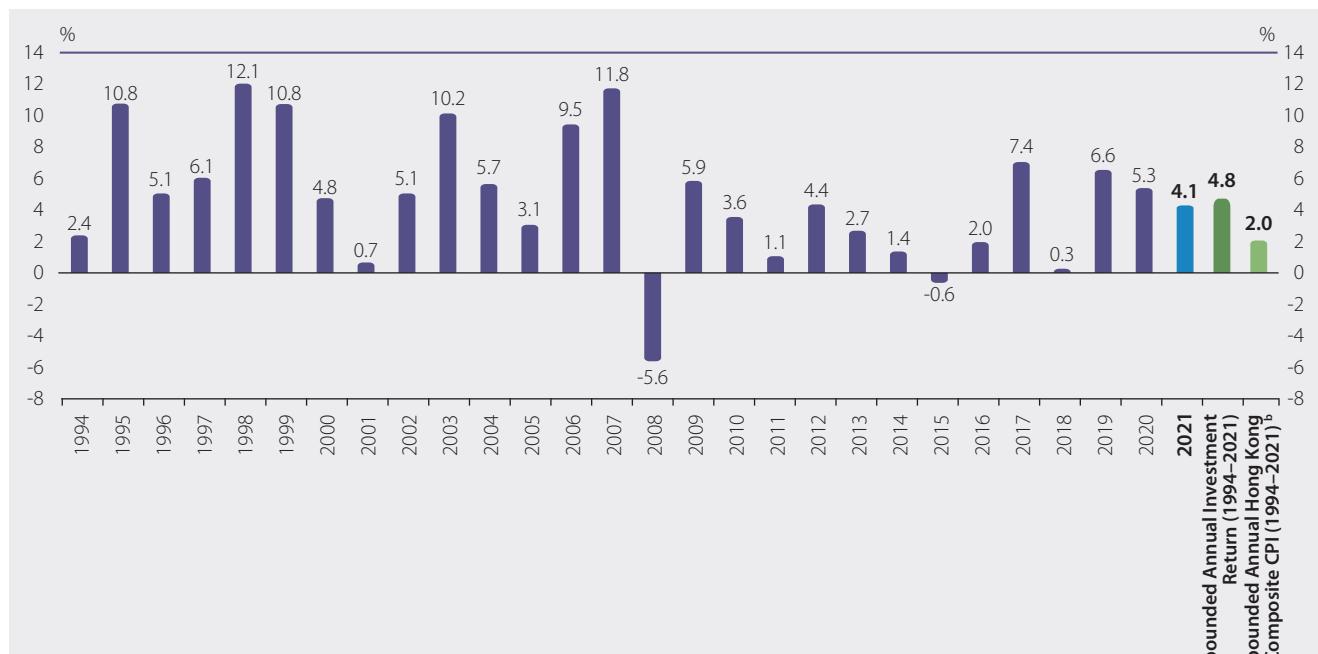
Total assets of the Exchange Fund reached HK\$4,570.2 billion at the end of the year. The market value of investments under the LTGP totalled HK\$515.3 billion, with private equity amounting to HK\$392.5 billion and real estate HK\$122.8 billion. Outstanding investment commitments of the LTGP amounted to HK\$225.7 billion.

The investment return of the Exchange Fund in 2021, excluding the Strategic Portfolio, was 4.1%. Specifically, the IP achieved a rate of return of 3.7%, while the BP gained 0.4%. The LTGP has recorded an annualised internal rate of return of 15.4% since its inception in 2009.

The annual returns of the Exchange Fund from 1994 to 2021 are set out in Chart 1. Table 2 shows the 2021 investment return and the average investment returns of the Fund over several different time horizons. The average return was 5.3% during 2019–2021, 4.7% during 2017–2021, 3.3% during 2012–2021 and 4.8% since 1994. Table 3 shows the currency mix of the Fund's assets on 31 December 2021.

See pages 211 to 319 for the audited 2021 financial statements of the Exchange Fund.

Chart 1 Investment return of the Exchange Fund (1994–2021)^a



- a. Investment return calculations exclude holdings in the Strategic Portfolio.
b. The Composite Consumer Price Index is calculated based on the 2019/2020-based series.

Reserves Management

Table 2**Investment return of the Exchange Fund in Hong Kong dollar terms^a**

	Investment return^{b,c}
2021	4.1%
3-year average (2019–2021)	5.3%
5-year average (2017–2021)	4.7%
10-year average (2012–2021)	3.3%
Average since 1994	4.8%

a. The investment returns for 2001 to 2003 are in US dollar terms.

b. Investment return calculations exclude 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 2021 (including forward transactions)**

	HK\$ billion	%
US dollar	3,790.2	82.9
Hong Kong dollar	202.3	4.4
Others ^a	577.7	12.7
Total	4,570.2	100.0

a. Other currencies consisted mainly of the euro, renminbi, pound sterling and Japanese yen.

Corporate Functions

Corporate functions support the operation of the HKMA with a high level of transparency, accountability, efficiency and professionalism. To facilitate 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.



Corporate Functions

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 2021, the HKMA held or participated in 169 physical and virtual events, comprising eight press conferences, eight stand-up interviews and 153 other public functions. A further 27 media interviews were arranged. A total of 632 bilingual press releases were issued over the course of the year and a large number of media enquiries were handled on a daily basis.



Mr Eddie Yue, Chief Executive of HKMA, moderates a virtual panel discussion at the Hong Kong FinTech Week 2021

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 Connect schemes, financial technology (fintech) and the reform of interest rate benchmarks.

To engage and interact with the public in a timely manner, the HKMA maintains five social media channels (Facebook, Instagram, LinkedIn, Twitter and YouTube) with over 80,000 followers. The HKMA utilises its social media channels to raise public awareness on a wide range of topics notably phishing scams, which increased significantly during the pandemic. In addition, extensive promotion campaigns on green finance, fintech and the Connect schemes were conducted via social media to keep the public abreast of the latest development trends.



Mr Arthur Yuen, Deputy Chief Executive of HKMA, hosts a media briefing on the Hong Kong banking sector's preparation for London Interbank Offered Rate transition



Mr Howard Lee, Deputy Chief Executive of HKMA, hosts a media briefing on the HKMA's "Fintech 2025" strategy



Mr Edmond Lau, Deputy Chief Executive of HKMA, conducts an interview with an international news channel

Corporate Functions

Public enquiries

The Public Enquiry Service provides an effective means for the public to better understand key HKMA functions and operations. During 2021, it handled 9,781 enquiries. About half of them were related to banking policies and regulations, consumer banking issues, 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 2018 and Chart 2 provides a breakdown by enquiry nature in 2021.

Chart 1 Total number of public enquiries

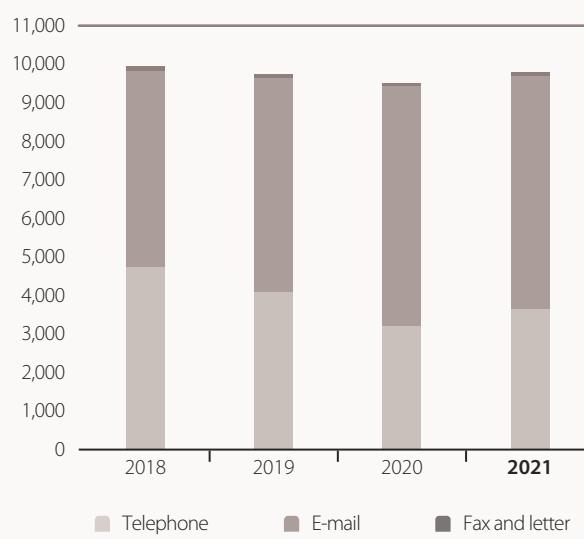
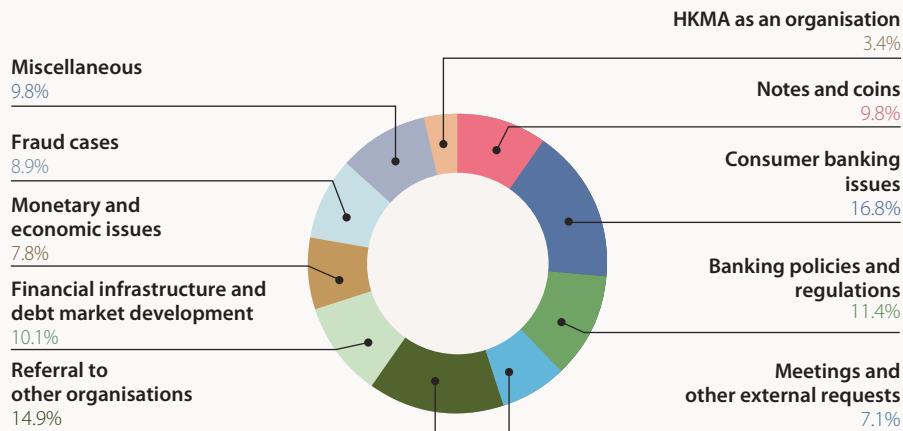


Chart 2 Nature of enquiries received in 2021



Corporate Functions

Publications

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 11 *inSight*¹ articles to introduce its major new initiatives and policies and discuss topical issues of interest.

The HKMA Annual Report 2020 received a Silver Award in the "Non-profit Making and Charitable Organisations" category, and an Excellence Award in Environmental, Social and Governance Reporting at the Hong Kong Management Association's 2021 Best Annual Reports Awards.

Corporate website

The corporate website (www.hkma.gov.hk) presents more than 44,000 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, 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 (API) in phases since 2018. By end-2021, 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 Banking Ordinance.

To safeguard public health and safety during the COVID-19 pandemic, special operational arrangements were put in place at the Information Centre. Cleansing and disinfection were stepped up, and facilities and exhibits were sanitised regularly with anti-microbial coating.



The HKMA Information Centre's exhibition area comprises the Policy Section, the Currency Section and the Historical Timeline

¹ *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 which are of interest to the public.

Corporate Functions

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 2021, a webinar was organised for over 2,300 students and teachers from 84 secondary schools. The webinar covered an overview of the HKMA's work, the Linked Exchange Rate System, Hong Kong banknotes, protection of personal digital keys, the Deposit Protection Scheme and career opportunities in the banking industry. To date, more than 63,000 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 view of the increase in phishing scams, the HKMA conducted a public awareness campaign themed "Protect your Personal Digital Keys; Beware of Fraudulent Links!" with cross-media promotion to urge the public to stay vigilant against fraudulent hyperlinks embedded in SMS messages and emails purportedly from banks.



Cross-media promotion reminding the public to beware of fraudulent hyperlinks

The HKMA also seeks to enhance the public's understanding of the financial industry and raise the young generation's interest in pursuing a career in the industry. Following positive feedback to the online drama series "STEPS" in 2020, the HKMA launched a new series titled "Four Faces of Talents in Central" featuring four growing areas of the financial industry: data science, fintech, green and sustainable finance, and wealth management. In the video series, the characters of the market practitioners were portrayed in a humorous manner, and seasoned industry players and young talents shared first-hand information on the nature and requirements of jobs, career opportunities and prospects across the above four growing areas.



"Four Faces of Talents in Central" series keeps the young generation abreast of career opportunities in the financial market

Corporate Functions

The “Online Parenting and Educational Campaign” launched in 2020 was recognised with a Silver Award in the “Best Event — Corporate Social Responsibility” category of the Marketing-Interactive’s Marketing Events Awards 2021. Building on the campaign’s success and to sustain momentum, the HKMA rolled out additional initiatives, including a parenting financial education workshop where child education experts shared tips on how to teach kids good money sense and demonstrated a DIY (do-it-yourself) financial educational toy, as well as an animated virtual tour of the HKMA Information Centre.



The “Online Parenting and Educational Campaign” wins an award at the Marketing Events Awards 2021. The campaign promotes money management concept and skills to let parents and kids learn in an amusing and entertaining way

Corporate Functions

To enhance financial literacy among secondary school students, the HKMA and various stakeholders co-organised the “Hong Kong Financial Literacy Championship”, which featured a fintech theme. Apart from an online quiz, a new financial design thinking workshop on personal financial management was added to train the participating students to develop innovative proposals on money management tools. This initiative won the “Highest Student Participation Award” offered by the Business-School Partnership Programme under the Education Bureau, and the “Investor and Financial Education Award (Corporate) — Gold Award” offered by the Investor and Financial Education Council² (IFEC).



The “Hong Kong Financial Literacy Championship” educates students on fintech and design thinking concepts and achieves record-high participation

Other community engagement initiatives included talks or webinars for students and retirees. The HKMA also participated in a teacher training webinar on economic security organised by the Education Bureau. Online educational materials offering smart tips on using automated teller machines (ATMs) are available in eight languages³ to cater for people of different backgrounds living in Hong Kong.

The HKMA supports the IFEC in promoting financial literacy and capacity in Hong Kong, and will explore further collaboration with stakeholders to maximise the impact of community engagement.

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.

² A subsidiary of the Securities and Futures Commission.

³ The eight languages are Bahasa Indonesia, Hindi, Nepali, Punjabi, Tagalog, Thai, Urdu and Vietnamese.

Corporate Functions

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 the 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;
- ◆ to review existing measures for managing risks in the monetary and financial system to identify possible gaps and ensure the adequacy of these measures; and
- ◆ to 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;
- ◆ to 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;
- ◆ to harmonise the criteria and methods of risk measurement and prioritise the resources management of risks identified; and

- ◆ to 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 (IA) Division provides independent and objective assurance on the adequacy and effectiveness of the HKMA's governance, risk management and control processes. The IA Division 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 IA Division conducts operational and information system audits to review significant risk areas. During the year, 33 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 IA Division also advises on internal controls of major system development projects and new business initiatives. It provides risk updates to the Risk Committee regularly, while audit progress and key internal control matters are reported 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 2021 and the budgeted expenditure for core activities in 2021 and 2022 are shown in Table 1. During 2021, underspending in general operating costs was relatively significant. Actual expenditure in external relations, publicity and training activities was considerably below the 2021 budgeted amount because of the pandemic. The difference between the 2021 actual expenditure and the 2022 budget arises mainly from an increase in staff costs (including the filling of existing vacancies and taking into account the related full-year cost for 2022), and provision for professional and consulting services.

Table 2 shows other expenses that are not related directly to the HKMA's own operations. Expenses related to the provision of 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, are expected to remain broadly stable in 2022. Spending on financial infrastructure is related to the operation and continued development of payment and settlement systems to enable Hong Kong's financial markets to function efficiently and securely. The HKMA also provides operational support to the Hong Kong Deposit Protection Board on a cost-recovery basis, as endorsed by the FS under section 6 of the Deposit Protection Scheme Ordinance.

Corporate Functions

Table 1 Administrative expenditure

HK\$ million	2021 Budget	2021 Actual	2022 Budget
Staff costs			
Salaries and other staff costs		1,477	
Retirement benefit costs		127	
Premises expenses			
Rental expenses	43	41	44
Other premises expenses (including management fees and utility charges)	87	73	88
General operating costs			
Maintenance of office and computer equipment	162	142	159
Financial information and communication services (including trading, dealing terminals and data link charges)	93	72	96
External relations (including international meetings)	73	13	42
Public education and publicity	62	22	69
Professional, consulting and other services	182	91	164
Training	32	5	23
Others	23	16	24
Total administrative expenditure	2,483	2,079	2,482

Table 2 Additional expenses

HK\$ million	2021 Budget	2021 Actual	2022 Budget
Financial support to international financial organisations in Hong Kong	41	41	42
Financial support to the Hong Kong Academy of Finance and the Hong Kong Institute for Monetary and Financial Research	101	65	99
Service fees for financial infrastructure	140	92	159

Corporate Functions

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, as well as to act in the best interests of the organisation. A Code of Conduct provides guidance to staff on their ethical and legal responsibilities.

The HKMA makes continuing 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 conflicts of interest, prevention of corruption, personal data protection and anti-discrimination practices. Staff are required to take an online test to deepen their understanding of the relevant policies, rules and regulations.

EFFICIENCY

Information technology

The Information Technology (IT) Division maintains a reliable and secure IT operational environment that supports the smooth and efficient operations of the HKMA. In 2021, all time-critical systems of the HKMA maintained full operational uptime.

IT security is a high-priority task. All emerging IT threats are closely monitored and the IT security system is reviewed regularly. The division's business contingency plan is also updated from time to time to ensure continued operation of all critical systems.

In 2021, the work-from-home arrangement formed an integral part of the business continuity plan under the pandemic, which was activated from time to time as needed. To support HKMA staff working from home, IT facilities were enhanced while safeguarding cybersecurity.

To ensure continued reliability of the HKMA's IT systems, ageing components have been updated in batches. At the same time, to promote adoption of digitalisation within the organisation, an internal cloud system was installed in 2021 to facilitate digitalisation and other initiatives.

Corporate Functions

Digitalisation

The Digitalisation Programme which began in 2019, covers five key areas, including banking supervision, anti-money laundering supervision, financial stability surveillance, economic research and reserves management.

The programme has started to bear fruit:

- first,** granular data has been collected to enhance the effectiveness of surveillance and supervision;
- second,** more powerful tools have been adopted to enable sophisticated data analytics; and
- third,** the handling of data in many different processes has been automated to improve efficiency.

The increased number of new applications across different projects necessitates corresponding enhancements to technology platforms and infrastructure. To this end, the Digitalisation Office has strengthened the underlying infrastructure to provide a sound and scalable foundation for the Digitalisation Programme. Common data platforms are being developed to support organisation-wide data management and analytics capabilities. Likewise, organisation-wide data governance policies are being drawn up to enable effective, efficient and secure data sharing within the HKMA. These efforts include proper definition of data ownership, clear delineation of data access rights, and consistency in data definitions and categorisation. All these will help improve interoperability and enable a co-ordinated application of technologies across the organisation.

With the adoption of new digital applications and the technology infrastructure being enhanced, the Digitalisation Office will continue its effort in process improvement and re-engineering to maximise the benefits of digitalisation, and provide digitalisation training to facilitate the transition to new ways of agile working.

Administration

The HKMA regularly reviews its corporate resources, including space requirements, to ensure that operational needs are met. To keep its workplaces well equipped and occupationally safe, the HKMA carries out office repair and maintenance work from time to time. For details about the HKMA's efforts in nurturing a caring workplace and a green office, see the *Sustainability* chapter on pages 192 to 200.

Business continuity plans for the HKMA are reviewed constantly to ensure their effectiveness in a changing business and social environment. 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 the necessary precautionary and contingency measures can be taken in a timely manner.

Corporate Functions

Legal support

The Office of the General Counsel (OGC) provides legal advice to the HKMA on all aspects of its functions. In 2021, the OGC worked alongside other HKMA departments on a diverse range of matters, including making and amending legislation and guidelines; enforcement, licensing and revocation processes; and other policy initiatives.

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 2021, with COVID-19 pandemic still evolving, the Settlement Section continued to maintain a high level of operational resilience and efficiency to meet new settlement service demands. 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 2021 was 1,005. During the year, the HKMA effectively supported new initiatives as well as the voluminous and complex work through flexible redeployment of existing resources, efficiency enhancement and streamlining of work processes. In 2022, the HKMA will maintain its establishment at 1,005 and deploy existing resources for new and expanded tasks in the areas of banking and financial 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 diversity of views and teamwork



Corporate Functions

Table 3 gives a breakdown of the establishment and strength of the HKMA.

Table 3 Establishment and strength on 1 January 2022

Department	Functions	Senior staff		Others	
		Establishment	Strength	Establishment	Strength
Senior Executives' Office	Top management of the HKMA	4	4	9	8
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	91	85
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	43	43
Banking Supervision	To supervise operations of AIs	1	1	181	168
Enforcement and AML	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	99	93
Exchange Fund Investment Office	To manage reserves in line with the established guidelines to achieve investment returns and enhance the quality of returns by diversifying investments into different markets and asset types	1	1	105	91
Risk and Compliance ^a	To oversee all risk-generating activities, including investment risks and non-investment-related corporate risks of the HKMA	1	1	45	43
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	1	55	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	18	17
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, take charge of the settlement function, and ensure an adequate supply of banknotes and coins	1	1	84	78
Research	To conduct research and analyses on economic and financial market developments in Hong Kong and other economies	1	1	39	37
Office of the General Counsel	To provide in-house legal support and advice	1	1	28	24
Corporate Services	To provide support in the form of administration, finance, human resources, IT and secretariat services; handle media and community relations; and provide consumer education	1	1	170	161
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	12	10
Total		16	16	989	917

a. 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.

Corporate Functions

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 the light of recommendations made to him by the GSC through EFAC, 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 awards are distributed 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. The 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 2021 are shown in Table 4.

Table 4 Remuneration packages of senior staff members in 2021^a

HK\$'000	Deputy Chief Executive/ Senior Executive	Chief Executive	Director (average)	Executive Director (average)
Number of staff members ^b	1	4	14	
Annualised pay				
Fixed pay	7,000	5,798	4,318	
Variable pay	2,154	1,566	1,111	
Other benefits ^c	739	640	641	

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 accords 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 the staff's vertical (job-specific) and horizontal (general) skills according to the identified individual and organisational needs. During 2021, a number of training initiatives were launched to support various functional areas. To keep staff abreast of the latest financial developments, the HKMA organised topical briefings or thematic talks on its work and emerging trends, including on topics such as central bank digital currency, green and sustainable banking, fintech development and climate risk management. A new leadership development programme for senior staff was launched to equip staff with the relevant skills and mindset to lead the organisation effectively.



Leadership training



Thematic talk on Green and Sustainable Banking



A Continuous Capacity Development Programme is in place to foster a culture of continuous learning and to strengthen the competency level of the staff. This is in addition to a training sponsorship scheme that supports staff members in pursuing studies relevant to their work at the HKMA. The HKMA also provides reimbursement of professional membership subscriptions to its 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 Hong Kong Deposit Protection Board and the Hong Kong Academy of Finance.

Corporate Functions

Opportunities for graduates and students to join the HKMA

Manager Trainee and Graduate Economist programmes

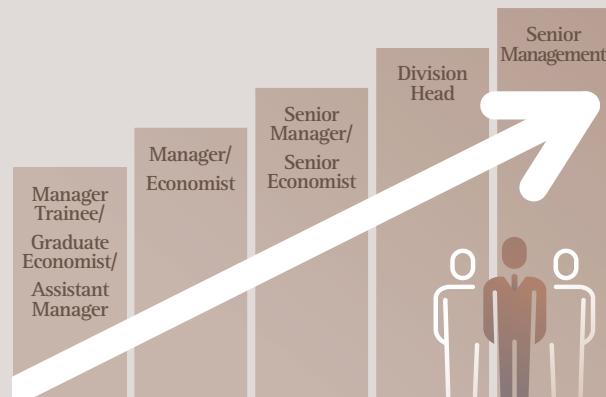
To develop a pool of young talent equipped with sharp analytical minds, strong communication skills and good team spirit for a long-term career in central banking, the HKMA runs two trainee programmes: the Manager Trainee (MT) programme and the Graduate Economist (GE) programme. Each programme lasts 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 and to contribute 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 structured foundation courses on central banking, organised both in-house and by leading regional and international organisations. Upon successful completion of the respective programmes, MTs are offered appointments as Managers and GEs as Economists to pursue a career in the organisation.

Career prospects



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. Orientation and talks are provided to give the interns a better understanding of the functions and work of the HKMA.

Corporate Functions



Orientation for interns



Interns attend a briefing on understanding fintech



Central banking course for MTs



Dedicated sharing session conducted by senior management for MTs

Sustainability

The HKMA is publishing its first sustainability report, as an integral part of its *Annual Report 2021*, to set out its strategy on sustainability and document its own efforts, as well as its joint efforts with the financial industry, to support the Government's climate strategies and contribute to a more climate resilient and sustainable world.

The HKMA embeds sustainability considerations across its main roles and functions, whether as a banking supervisor, a market facilitator, a responsible investor, or in maintaining financial and monetary stability. Moreover, the HKMA collaborates with local and overseas counterparts in strengthening the management and disclosures of climate risks, as well as the development of the green and sustainable finance market.

In addition, the HKMA is committed to fulfilling its corporate social responsibility, and aims to be a responsible and sustainable organisation. This commitment is manifested in various areas, including promoting a sustainable, financially inclusive and environmentally friendly marketplace, supporting the wider community, protecting the environment and nurturing a caring workplace.



Sustainability

OVERVIEW

Climate change is one of the most pressing challenges facing the world today. To combat climate change, countries agreed, under the Paris Agreement¹, to take actions to cut greenhouse gas (GHG) emissions and eventually achieve carbon neutrality within this century. Meeting the Paris Agreement climate change target will require investments of an estimated US\$1–2 trillion a year globally², making sustainability one of the biggest drivers of capital flows in the decades ahead.

Hong Kong is determined to be at the forefront of this transition. The Government announced that it will strive to achieve carbon neutrality before 2050, in line with developed economies globally. Hong Kong is also the first Asian jurisdiction that has committed to specifically aligning disclosure requirements with recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) by 2025 across relevant sectors.

To the financial sector, climate change is both a source of risk and opportunity. While the financial sector cannot be spared from the threats posed by climate change, it has a key role to play in the transition by channelling more financing to activities that are consistent with a pathway towards lower GHG emissions and climate-resilient developments.

The HKMA is committed to strengthening Hong Kong's financial system to support a greener and more sustainable future, driving actions to support the Government's climate goal and contributing to the global agenda. In doing so, the HKMA incorporates sustainability considerations in carrying out its main functions and in running its operations.

First, as a banking supervisor, the HKMA aims to strengthen resilience of the banking system against climate risks and to accelerate banks' efforts in supporting the transition to a low-carbon economy. To accomplish this, the HKMA has formulated a regulatory framework setting out supervisory

requirements for banks to manage and disclose climate risks. A pilot exercise on climate risk stress test to assess the resilience of the banking sector was also concluded successfully in 2021. Meanwhile, on an ongoing basis, the HKMA takes into account climate change in monitoring financial stability risks.

Secondly, in its market development role, the HKMA is focusing its efforts in enhancing Hong Kong's role as a green and sustainable finance hub in the region, including the Greater Bay Area (GBA). Hong Kong, being Mainland's offshore financial centre, is well-positioned to channel global investments into Mainland's plans to achieve peak carbon emissions by 2030 and carbon neutrality by 2060. The HKMA is also working through the Green and Sustainable Finance Cross-Agency Steering Group (CASG)³, which the HKMA co-chairs, to build industry capacity, address data gaps and explore the development of a local green classification framework.

In fact, Hong Kong is a leader in green finance solutions, having established the world's first government Global Medium Term Note Programme dedicated to green bond issuances under the Government Green Bond Programme, and increased gradually the diversity of its issuances since 2019, both in terms of currencies and tenors. To support the issuance of green and sustainable bonds and loans in the private sector, the Government set up the Green and Sustainable Finance Grant Scheme in May 2021. Administered by the HKMA, this scheme has incentivised more corporates to seek green and sustainable financing in Hong Kong, and encouraged more green advisers and external reviewers to establish or expand their presence here.

Thirdly, as the manager of the Exchange Fund, the HKMA has ensured that environmental, social and governance (ESG) considerations are an integral part of its investment process and asset allocation decisions. In the latter part of this report, the HKMA makes its inaugural disclosures on its climate scenario analysis and carbon footprint metrics of the Exchange Fund's portfolios.

¹ The Paris Agreement is an international treaty on climate change that has the long-term goal of keeping the rise in global temperature to well below 2 degrees Celsius above pre-industrial levels, and preferably limiting the increase to 1.5 degrees Celsius.

² Energy Transitions Commission, 2020. *Making Mission Possible: Delivering a Net-Zero Economy*.

³ The CASG was co-initiated by the HKMA and the Securities and Futures Commission. The other CASG members are the Environment Bureau, the Financial Services and the Treasury Bureau, Hong Kong Exchanges and Clearing Limited, the Insurance Authority and the Mandatory Provident Fund Schemes Authority.

Sustainability

Fourthly, the HKMA is stepping up its own green office initiatives to ensure its own operations conform to best practices in the management and mitigation of climate risks. As a start, the HKMA has established its carbon profile across Scope 1 and Scope 2 emissions⁴, and made corresponding disclosures. At the same time, the HKMA has implemented measures to enhance industry-wide operational efficiency and minimise resource consumption. In addition, the HKMA holds itself to high standards of corporate social responsibility (CSR) and works with its stakeholders to promote financial inclusion and financial literacy.

Greening the financial system requires close collaboration amongst central banks and supervisors. The HKMA is an active member of the international community in global policymaking and alignment of sustainability standards. The HKMA has also issued a statement to support the Central Banks and Supervisors Network for Greening the Financial System (NGFS) Glasgow Declaration⁵, reaffirming its commitment to delivering on the NGFS recommendations in taking the necessary measures to foster a greener financial system.

In driving these sustainability initiatives and assessing climate-related opportunities and risks, sustainability and green considerations are embedded in the HKMA's governance and risk management frameworks, in which the leadership is actively involved in setting the overarching objectives and guiding principles, in consultation with the Exchange Fund Advisory Committee (EFAC) and its sub-committees. The HKMA's CSR and Sustainability Committee (CSC) also assesses the potential impacts of sustainability and climate-related issues on the organisation, and devises strategies to reduce the impacts. Execution of the relevant strategies and initiatives is closely monitored and reported to the top management regularly. In addition, external consultants have been engaged to advise the HKMA in selected areas of work.

The subsequent sections of this chapter will delve into the HKMA's governance, strategies and risk management measures in undertaking green finance and sustainability work in each of its roles.

This report is prepared with reference to the disclosure elements recommended in the NGFS's *Guide on Climate-related Disclosure for Central Banks*, published in December 2021. In addition, information in relation to the HKMA's office operations makes broad reference to the reporting principles under the Global Reporting Initiative (GRI) Standards⁶ and the *ESG Reporting Guide*⁷ promulgated by the Stock Exchange of Hong Kong Limited.

Central Banks and Supervisors Network for Greening the Financial System

The NGFS provides a platform for central banks and prudential supervisory authorities to exchange experiences, share best practices, contribute to the development of environmental and climate risk management in the financial sector, and mobilise mainstream finance to support the transition towards a sustainable economy. Its purpose is to define and promote best practices to be implemented within and outside of the membership of the NGFS, and to conduct or commission analytical work on green finance.

Task Force on Climate-related Financial Disclosures

In December 2015, the Financial Stability Board created the TCFD to develop recommendations for more effective climate-related disclosures by companies to investors, lenders and insurance underwriters that could promote more informed decisions. The TCFD's recommendations are structured around four thematic areas that represent the core elements of how organisations operate: governance, strategy, risk management, and metrics and targets.

⁴ Explanations of Scope 1 and Scope 2 GHG emissions are given in the *Responsible Investment* section on page 190.

⁵ See the HKMA press release dated 3 November 2021 titled *The HKMA supports the NGFS Glasgow Declaration*.

⁶ The GRI is an international independent organisation that helps businesses, governments and other organisations understand and communicate their impacts on matters such as climate change.

⁷ The *ESG Reporting Guide* is in Appendix 27 of the *Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited*.

Sustainability

BANKING SUPERVISOR

As the core part of the financial system, banks should be proactive in managing climate risks, and support channelling more capital to green and sustainable activities. As a banking supervisor, the HKMA focuses on building banks' resilience against climate risks and accelerating banks' efforts in supporting the transition to a low-carbon economy.

Overview of the HKMA's three-phased approach

Since May 2019, the HKMA has been promoting green and sustainable banking in three phases:

Phase I

Developing a common framework to assess the "greenness baseline" of individual banks, and collaborating with international bodies to provide technical support to banks in Hong Kong.



Phase II

Consulting the industry and other stakeholders on the supervisory expectations and requirements of green and sustainable banking.



Phase III

Focusing on the implementation of supervisory requirements, monitoring and evaluation of banks' progress in green and sustainable banking.



Guidance

Supervisory requirements on climate risk management

In 2020, the HKMA developed a common framework for assessing the "greenness baseline" of individual banks in collaboration with the industry. The HKMA also conducted the first greenness assessment of banks, which marked the completion of Phase I. To help banks prepare for the new supervisory requirements, a white paper was published in June 2020, which outlined the HKMA's initial thinking on supervisory expectations for climate risk management.

In December 2021, following an industry consultation, the HKMA issued the supervisory requirements for banks to incorporate climate considerations into governance, strategy, risk management and disclosure. In particular, specific requirements and concrete timeline were set out in mandating climate-related disclosures based on the recommendations of the TCFD before 2025.

The requirements will set a benchmark to help banks upgrade their risk management capability.

The next step is for the HKMA to monitor banks' implementation of the relevant requirements. In this regard, the HKMA has stepped up its supervisory capacity by setting up a new dedicated team within its Banking Supervision Department to carry out climate risk supervision.

This three-phased approach is an iterative and evolving process. Further to the first round of greenness assessment conducted in 2020, the HKMA is reviewing the framework to encompass the new supervisory requirements on climate risk management and potentially cover a wider scope, such as other environmental risks and measures for supporting the net zero transition. The HKMA intends to launch an updated framework in the second half of 2022.

Sustainability

Sound practices supporting the transition to carbon neutrality

Apart from incorporating climate risk considerations into the risk management framework, some banks have devoted resources and taken measures to support the goals of the Paris Agreement and contribute to achieving global net zero emissions. The HKMA issued a circular in December 2021 to share with the industry the sound practices of these banks which would be of reference value to other banks in the industry in formulating their climate strategies. These sound practices are grouped into four areas: reducing GHG emissions of the banks' own operations, reducing financed emissions through portfolio alignment, assisting clients to transition, and promoting collective efforts to assist the economy to achieve a net-zero transition.

Green classification framework to facilitate green finance flows

To increase transparency across the financial markets and enable consistent policy making on green finance, the HKMA has been working with other financial regulators to explore a local green classification framework, which will facilitate navigation among the *Common Ground Taxonomy* (CGT) developed by the International Platform on Sustainable Finance (IPSF)⁸ and the green definitions adopted by China and European Union, for adoption across different financial sectors. The work will be guided by the principles of interoperability, comparability and inclusiveness, taking into account other definitions of green, transitional activities and local considerations. This initiative will reduce the risk of green washing, improve product comparability and ultimately enhance investor protection.

Assessment: climate risk stress test

To assess the banking sector's ability to cope with potential shocks brought about by climate change, the HKMA undertook a pilot exercise on climate risk stress test (CRST), which included the participation of 20 major retail banks and seven branches of international banking groups. A report summarising the results of the pilot CRST exercise was published in December 2021. The results showed that the banking sector remained resilient even in the face of extreme climate-related shocks, although these shocks could potentially give rise to significant adverse impacts on banks' financials. The CRST exercise helped to enhance banks' capabilities for measuring and assessing climate risks. In light of the CRST results, the participating banks have devised plans to strengthen their climate strategies and risk governance frameworks. The HKMA will continue to engage the industry to strengthen banks' capability and enhance the CRST framework, taking into account the lessons learnt from the pilot exercise.

Upskilling banking practitioners

As part of its capacity building work for the banking sector, the HKMA has started developing a new module on Green and Sustainable Finance under the Enhanced Competency Framework for Banking Practitioners. This is to cater for the strong demand for green and sustainable finance knowledge and skill sets in the banking industry.

⁸ The IPSF issued the CGT report on 4 November 2021. The CGT will provide a common reference point for the definition of investments which are considered as environmentally sustainable across IPSF jurisdictions.

Sustainability

FINANCIAL AND MONETARY STABILITY

Climate change presents an important source of risk to the financial system. However, global efforts to assess the financial stability impact of climate change have only just begun. The HKMA is at the forefront of this. It is undertaking efforts to assess such impact by incorporating a broader range of climate scenarios into its analysis of financial risks and conducting research studies to augment its current surveillance approaches to better capture climate risks.

Integrating climate-related risks into financial stability monitoring

The HKMA takes into account climate change in its ongoing monitoring of financial stability risks, and incorporates analyses of climate-related risks in various financial stability reports. Through its active participation in the NGFS's Macrofinancial workstream, the HKMA contributes to further enriching climate scenarios for central banks and supervisors to analyse climate-related financial risks under different future climate pathways.

The above financial stability surveillance work is supplemented with empirical analysis to assess the implications of climate change and related mitigation policies for the financial system. To date, the HKMA has conducted seven applied research projects that look deeper into the following key topics:

- ◆ impact of climate risks on syndicated loan pricing;
- ◆ corporate default risk under various NGFS climate scenarios;
- ◆ stock market spillover of climate risks;
- ◆ impact of ESG factors on the cost of corporate debt;
- ◆ the relationship between ESG performance and sovereign credit risk;
- ◆ global equity investors' awareness of climate risks; and
- ◆ the pricing of climate change risks in Hong Kong's equity market.

These research findings can contribute to the formulation of a policy and regulatory framework in addressing the impacts of climate risks on financial stability in Hong Kong and the rest of the world. Locally, these studies form the basis for the HKMA's ongoing monitoring and assessment of the financial stability impacts of climate risks. The findings of these research projects have been shared with a wide range of stakeholders through various channels, including central bank research conferences and the HKMA's *Half-Yearly Monetary and Financial Stability Reports*.

Embedding sustainability considerations in the Liquidity Facilities Framework

The HKMA's Liquidity Facilities Framework serves as a collateral-based backstop source providing timely liquidity support to banks in case of need. The HKMA is prepared to explore how sustainability considerations can be embedded in evaluating eligible collaterals under this framework. For example, designated financial assets that meet pre-specified green benchmarks may be considered as eligible collaterals.

Sustainability

MARKET FACILITATOR

The HKMA has been working to enhance Hong Kong's role as a regional green and sustainable finance hub by providing the necessary infrastructure and catalysts, and supporting international initiatives and alignment with global standards.

Green and Sustainable Finance Cross-Agency Steering Group: a champion of market developments

In a major step towards advancing the sustainable finance agenda for Hong Kong, the HKMA and the Securities and Futures Commission (SFC) initiated the establishment of the CASG in May 2020. The CASG aims to co-ordinate the management of climate and environmental risks to the financial sector, accelerate the growth of green and sustainable finance in Hong Kong and support the Government's climate strategies. To enhance transparency on the way forward for Hong Kong, in December 2020, the

CASG released its strategic plan that sets out six key focus areas and five action points for strengthening Hong Kong's financial ecosystem to support a greener and more sustainable future (Figure 1).

Since its establishment, the CASG has been making good progress. It is now taking forward its work with a focus on capacity building and data under the Centre for Green and Sustainable Finance (see page 181), taxonomies (as mentioned in the *Banking Supervisor* section on page 178), climate-related disclosures and sustainability reporting, as well as carbon market opportunities. Specifically, a preliminary feasibility assessment of carbon market opportunities for Hong Kong was published in March 2022, and the CASG will support the development of Hong Kong into a regional carbon trading centre, including the development of a global high-quality voluntary carbon market, as well as the related opportunities arising from the GBA co-operation.

Figure 1 The CASG's key focuses and action points



Risk management

Strengthen the management of climate-related financial risks to consolidate Hong Kong's position as a global risk management centre



Capacity building

Enhance capabilities of market participants and raise awareness among the general public



Mainland opportunities

Capitalise on the opportunities presented by the Mainland to develop Hong Kong into a green finance centre in the GBA



Disclosure

Promote the flow of climate-related information at all levels to facilitate risk management, capital allocation and investor protection



Innovation

Encourage innovation and explore initiatives to facilitate capital flows towards green and sustainable causes



Collaboration

Strengthen regional and international collaboration

Five near-term actions to support a greener and more sustainable future:

- ◆ **Mandatory TCFD-aligned disclosures** across all relevant sectors no later than 2025
- ◆ Adopting **Common Ground Taxonomy**
- ◆ Supporting work of IFRS Foundation on **sustainability reporting**
- ◆ **Promoting climate-focused scenario analysis**
- ◆ Establishing a **platform to act as a focal point for cross-sectoral capacity building and repository of relevant resources**

Sustainability

Centre for Green and Sustainable Finance: a cross-sector platform to help fill capacity, talent and data gaps

The CASG launched the Centre for Green and Sustainable Finance in July 2021 to co-ordinate efforts of financial regulators, Government agencies, industry stakeholders and academia in capacity building and policy development, and to serve as a resource and data repository. The Centre is taking forward measures to address the pain points faced by the financial services sector. In March 2022, the Centre launched a Data Source Repository to support the financial sector in locating data sources for climate risk management and other green and sustainable finance related analysis and research. Other measures include developing a new module on Green and Sustainable Finance under the HKMA's Enhanced Competency Framework for Banking Practitioners (as mentioned in the *Banking Supervisor* section on page 178),

working with the Government to launch a new Pilot Green and Sustainable Finance Capacity Building Support Scheme⁹ to grow the pool of green finance talent in Hong Kong, as well as launching another information repository to share useful learning resources on green and sustainable finance.

Alliance for Green Commercial Banks: an initiative supporting regional green and sustainable finance development

The HKMA has also been actively supporting regional green and sustainable finance development. In November 2020, the International Finance Corporation (IFC) and the HKMA launched the Alliance for Green Commercial Banks¹⁰ to bring together financial institutions, banking industry associations, research institutions and innovative technology providers in the region to develop a community of green commercial banks (Figure 2).

Figure 2 The Alliance for Green Commercial Banks

Why launch the Alliance?

The Alliance aims to unleash the potential of commercial banks and other financial institutions to mainstream green finance as a core business and to promote the involvement of the financial sector in global climate change activities



Market level

Unmet green financing needs



Bank level

Lack of knowledge base and capacity



The Alliance

Knowledge sharing and peer learning



Global impact

Advancing the Green Agenda globally

How does it work?

- ◆ **Acting as a knowledge hub and deploying advisory support**

Creating a one-stop shop and peer-to-peer learning platform for financial institutions to acquire knowledge, tools and information to develop their own green finance roadmaps and transform into credible green financial institutions

- ◆ **Forging a community of practice and innovation**

Bringing together the leaders in green finance to develop a community of green financial institutions across emerging markets

- ◆ **Promoting investment for green business opportunities**

Facilitating dialogue and providing thought leadership to advance the green finance agenda globally, unlocking the trillions available in green and climate-related investment opportunities

⁹ This pilot scheme was announced by the Financial Secretary in the 2022–23 Budget.

¹⁰ The HKMA is the founding member and first regional anchor for the Asia Chapter.

Sustainability

The Alliance hosted nine knowledge events comprising training and roundtable sessions in 2021, covering topical issues such as green banking transformation, green buildings, voluntary carbon markets and the regulatory landscape for climate risks (Figure 3).

Figure 3 Event outreach: The Alliance for Green Commercial Banks hosted nine knowledge events in 2021

The Alliance's knowledge events in 2021 reached around 4,500 participants globally, with 27% being senior executives



Channeled through:

- Institutional and corporate banks
- Sector and industry associations
- Chambers of commerce
- Renowned media
- Other stakeholders

27% of the participants
were senior executives
(department head or
above)

From 37 economies, covering

- Asia-Pacific
- Americas
- Europe
- The Middle East
- Africa

- Commercial banks
- Investment banks
- Non-bank financial institutions
- Development finance institutions
- Fintech
- Think tanks
- Enterprises

* Data as of 31 December 2021

Sustainability

Green finance solutions: channelling capital to green the real economy

The HKMA has been contributing to green finance development in Hong Kong by, for instance, promoting the issuance of green and sustainable debt and exploring the application of Greentech. In 2021, Hong Kong witnessed a fourfold increase in green and sustainable debt (including bonds and loans) issuance, totalling US\$57 billion.

Green and sustainable bonds

To demonstrate the Government's support for sustainable development and determination to combat climate change, and to promote the development of green finance, the Government Green Bond Programme was launched in 2018. The HKMA assists in implementing green bond issuance under the Programme. A total of over US\$9 billion equivalent of green bonds, comprising institutional and retail bonds, have been issued since 2019, with the proceeds allocated to green projects in Hong Kong including green buildings, waste management, energy efficiency and conservation, etc. Annual *Green Bond Reports* have been published, with details on the allocation of the green bond proceeds and expected environmental benefits.

To streamline its regular issuance work, the Government established the world's first government Global Medium Term Note Programme dedicated to green bond issuances in early 2021 and issued close to US\$6.5 billion equivalent of institutional green bonds in February and November, covering US dollar, euro and renminbi tranches in multiple tenors ranging from three to 30 years. These issuances included the Government's inaugural issuance of euro- and renminbi-denominated bonds, providing important new benchmarks for potential issuers in Hong Kong and the region. The green bonds were well received by the global investment community, affirming investors' confidence in Hong Kong's credit strengths and economic fundamentals in the long term, and further consolidating Hong Kong's leading role as an international finance centre and premier offshore renminbi centre.

To enable residents to participate in and share the fruit of Hong Kong's sustainable development through investment, the Financial Secretary announced in the 2021–22 Budget the plan to issue retail green bonds under the Government Green Bond Programme. The HK\$20 billion inaugural retail green

bond was issued in May 2022 and was well received by the public.

To provide the industry with useful and credible market information, the HKMA has been collaborating with the Climate Bonds Initiative and the International Capital Market Association (ICMA) respectively to release annual reports featuring the Hong Kong and regional green debt markets. The ICMA report showed that US\$31 billion, or around a third of the regional total, of international green and sustainable bond issuances were arranged in Hong Kong in 2021.

In October, the Shenzhen Municipal People's Government issued RMB5 billion of offshore municipal government bonds in Hong Kong, including RMB3.9 billion of green bonds. It was the first time a Mainland municipal government issued bonds outside the Mainland. The issuance marked another milestone in the development of Hong Kong's green and sustainable finance market, highlighting its unique role to facilitate green and sustainable capital flows between the Mainland and the rest of the world.

Green and Sustainable Finance Grant Scheme

A new Green and Sustainable Finance Grant Scheme was launched in May to attract more green and sustainable financing activities to Hong Kong. The scheme has been well received by the industry. During the first year, it has subsidised the bond issuance and external review expenses of close to 100 green and sustainable debt instruments issued in Hong Kong. The scheme has also encouraged more financial institutions and professional service providers, including external reviewers, to set up and expand their presence in Hong Kong, thus enriching the green and sustainable finance ecosystem in Hong Kong.

Greentech

As part of the efforts to explore the synergy between green finance and technology, the HKMA collaborated with the Bank for International Settlements Innovation Hub Hong Kong Centre on Project Genesis to explore the use of distributed ledger technology in improving the efficiency of the bond issuance process and enhancing the transparency of environmental impact disclosure. The project was concluded in November, with two prototypes developed and concept-tested for potential issuance of tokenised green bonds to retail investors.

Sustainability

RESPONSIBLE INVESTMENT

HKMA's journey of responsible investment

As the manager of the Exchange Fund and one of the largest asset owners globally, the HKMA proactively supports responsible investment (RI). The HKMA's RI journey commenced with the adoption of the *Principles of Responsible Ownership* promulgated by the SFC in 2016¹¹ and was accelerated by integrating ESG factors into its investment processes from 2017.

In 2019, the HKMA established the overarching guiding principle to give priority to ESG investments with comparable long-term risk-adjusted returns, reinforcing further the belief that an investment approach with ESG integration aligns with the investment objectives of the Exchange Fund. Further, the HKMA seeks to partner with like-minded investors and regulators to promote good RI practices, through which it can exchange views and better monitor the developments of ESG standards and initiatives. The HKMA thus joined the United Nations-supported *Principles for Responsible Investment* (PRI) as one of the earliest central bank signatories of the world's leading proponent of RI. To demonstrate its commitment to the adoption of ESG standards in investments, the HKMA also became a member of the NGFS and a supporter of the TCFD.

The HKMA believes that giving due attention to climate change can contribute to the global initiative to limit global warming on the one hand, and preserve the long-term portfolio value through concerted efforts in containing and reducing GHG emissions on the other. Since 2015, the HKMA has spearheaded investments in green and sustainable assets and made incremental steps to introduce ESG considerations in all asset classes through ESG integration. The positive experience built up therein has been the cornerstone for the HKMA to further expand its ESG investments.

Moving forward on its RI journey and navigating climate change, the HKMA strives to enhance its strategies and risk management by factoring in quantitative analysis of portfolio exposure while improving resilience to the adverse effects of climate change. Inaugural disclosures on climate scenario analysis and carbon footprint metrics of the Exchange Fund's portfolios are made in this report based on TCFD recommendations. The HKMA endeavours to progress further towards aligning its disclosures with the TCFD recommendations no later than 2025, as one of its commitments supporting the NGFS Glasgow Declaration at the UN Climate Change Conference in Glasgow (COP26) and the greening of Hong Kong's financial system.

HKMA's responsible investment journey: An incremental approach



¹¹ These voluntary principles aim to provide guidance to assist investors to determine how best to meet their ownership responsibilities.

Sustainability

Governance

Taking into account the statutory purposes of the Exchange Fund, as detailed in the *Reserves Management* chapter on page 151, the HKMA has been managing the Exchange Fund prudently under the principle of “capital preservation first while maintaining long-term growth”. It believes that ESG factors can unlock the long-term sustainable value and highlight the risks of an investment. By integrating ESG factors, the HKMA aims to seek better long-term risk-adjusted return that underpins the investment objectives of the Exchange Fund.

The HKMA’s belief in RI is reflected in the overarching guiding principle. The overall RI framework, as endorsed by the EFAC, comprises a three-pronged approach — integration, active ownership and collaboration — for adoption in the Exchange Fund’s investment processes. The EFAC delegates responsibility for the oversight of ESG-related risks, including climate change risks, associated with the Exchange Fund’s investments to its Investment Sub-Committee (ISC), which reviews the RI framework and climate risk management approach.

More details about the HKMA’s RI framework are available on the HKMA website:



Within the HKMA, the implementation of RI is supported by dedicated teams under the Risk and Compliance Department (RCD), headed by the Chief Risk Officer (CRO) of the Exchange Fund Investment Office (EFIO), which reports the RI initiatives and progress to the ISC at each meeting. The EFIO ESG Committee, chaired by the CRO, has been established to co-ordinate and oversee ESG efforts across the EFIO with specialist advice from the RCD. Efforts and progress discussed by the EFIO ESG Committee are reported to the Chief Executive Officer of the EFIO.

The RCD works closely with EFIO investment teams to integrate ESG factors into investment decision-making and portfolio management, and to assist the EFIO’s management team in managing ESG and climate-related risks and opportunities in a broad range of investments:

◆ **Public investments**

The Credit, Rules and Compliance Committee, composed of senior management of the EFIO, introduces ESG factors in credit evaluation and monitors the ESG profile of fixed-income portfolios via the regular reporting provided by the RCD. In addition, the RCD participates, from an ESG perspective, in the selection, appointment and monitoring processes of external managers of the public equities portfolios.

◆ **Private investments**

The Investment Committee chaired by the Chief Executive of the HKMA takes into consideration the RCD’s and private market investment team’s assessments of ESG-related issues for each prospective investment.

Sustainability

Strategies

Climate risk assessment

There is ample empirical evidence¹² indicating that the impacts of climate change and associated risks are material and the need to tackle them is getting urgent. The inherent physical and transition risks¹³, as well as market repricing of assets resulting from anticipation of possible impacts, can affect portfolio values of the Exchange Fund. As a long-term investor, the HKMA fully recognises these risks, but at the same time, also sees the potential opportunities that climate change can bring about. As such, the HKMA is building up its capabilities to better understand climate risks and opportunities, and it intends to devise sustainable investment and risk management strategies commensurate with the investment objectives of the Exchange Fund.

The trajectory of climate change is highly uncertain. Assessing its impacts over a long time horizon requires the use of modelling methodologies and assumptions that differ from traditional risk analysis. In this regard, an external consultant has been engaged with a view to advising the HKMA on leading industry practices and building up internal expertise and capacity for assessing the long term impact of climate change on the resilience of its portfolios under different scenarios.

Three climate scenarios with varying degrees of expected transition and physical damage from extreme weather events are applied to analyse the Investment Portfolio (IP) of the Exchange Fund over the short, medium and long term (see *Climate scenarios applied* below). They are broadly in line with the NGFS-recommended scenarios for forward-looking climate impact assessment. As climate scenario methodologies continue to develop, the HKMA will constantly review the scenarios as more data become available alongside the evolution of policy refinements and developments, adaptation pathways and market projections.

Climate scenarios applied

Current policies

This scenario assumes that current policies and commitments are augmented by new policies and growth in energy infrastructure spending after COP26.

Orderly transition

This scenario assumes climate policies are introduced early and become gradually more stringent to meet the Paris Agreement. Under this scenario, the energy production mix is transformed.

Hot house world

This scenario assumes only implemented policies are preserved, acceleration of emissions continues and national climate-related targets are not met, leading to irreversible changes (e.g. rise of sea levels).

¹² Intergovernmental Panel on Climate Change, 2021. *Sixth Assessment Report*.

¹³ Climate risks are widely defined by two dimensions: (i) physical risks, including acute impacts from extreme weather events, causing business disruption and physical damage of assets, and chronic changes of climate patterns that affect operations and productivity; and (ii) transition risks, involving possible abrupt devaluation of assets due to the shift towards a low-carbon economy.

Sustainability

A climate stress test is also conducted to estimate the IP's climate value-at-risk based on these three scenarios to ascertain how climate-related impacts can manifest themselves in the pricing of assets in the shorter term (Figure 4). Results of the analysis show modest return impacts across the board, demonstrating the IP's climate resilience. Among the scenarios, the best outcome for the Exchange Fund is to achieve the scenario which closely resembles an orderly transition to a global low-carbon economy.

Figure 4 Key findings of the climate scenario analysis and stress test



- ◆ Minimal return impacts across all three scenarios on fixed income investments, which comprise the largest allocation in the IP



- ◆ Public equities and private market investments can yield positive returns in the short term from opportunities driven by policy changes, economic transformation and global investment flows towards low-carbon solutions under an orderly transition scenario
- ◆ Renewable energy assets stand to benefit from the transition



- ◆ The IP will increasingly suffer from projected physical risks which will manifest over time. The negative return impact is higher under the hot house world scenario, which represents a higher degree of global warming
- ◆ Energy and conventional utilities are the most vulnerable sectors

Figure 5 Growing ESG investments

Public market



Ongoing initiatives

- ◆ Investing in green bonds since 2015, and has expanded to social and sustainability bonds
- ◆ Investing in equity mandates using an ESG equities index as a benchmark for passive portfolios managed by external managers
- ◆ Investing in the Managed Co-Lending Portfolio Program (MCP) run by the International Finance Corporation with a focus on sustainable projects in emerging markets

Private market



- ◆ Proactively sourcing and investing in projects with sustainable features such as renewable energy infrastructure, and buildings and warehouses with green accreditation

Accomplishments in 2021

- ◆ Holding of ESG bonds doubled, on top of the already doubled holdings in 2020
- ◆ Invested in a green bond fund managed by an international organisation
- ◆ Explored ESG-themed active equity mandates managed by external managers
- ◆ Participated in the MCPP One Planet program focusing on climate-smart investment aligned with the Paris Agreement in emerging markets
- ◆ Invested directly in renewable energy infrastructure projects including hydropower, wind and solar electricity generation across different markets
- ◆ Invested in private equity funds that focus on energy transition and global decarbonisation

Further expansion of ESG and green assets

The climate scenario study reaffirms the HKMA's beliefs and its practice of RI with emphasis on combating climate change. The HKMA strives to further grow its sustainable investments and capture opportunities in both public and private markets that embrace climate transition, mitigate climate change risks and enhance portfolio returns (Figure 5).

Sustainability

Exercising responsible investment in private market investments

For private market investments, the HKMA exercises RI through its general partners (GPs) who work with underlying portfolio companies to integrate ESG factors in their operations. In general, the GPs have a strong ESG commitment, since they believe that good ESG practices can create long-term value for their portfolio companies while also benefiting society. The case below illustrates how a portfolio company contributed to a lower-carbon environment through deployment of innovative technologies.

Case: Clean hydrogen and carbon black production company

The HKMA has an investment in a company involved in the production of clean hydrogen and carbon black (i.e. a carbon extract in powder form). Hydrogen is a common gas and can be used widely to produce ammonia for fertilisers, while carbon black is a reinforcing

agent used in various goods such as automobile tires, inks, plastics and other rubber products. The conventional production process for the production of hydrogen and carbon black releases large amounts of GHG into the atmosphere. The company has deployed an advanced methane pyrolysis technology to split natural gas into hydrogen and solid carbon, powered by electricity from renewable energy sources. This technique produces green hydrogen and carbon black with a much lower level of carbon emissions discharged than the prevailing conventional production process. Using this new methane pyrolysis technology, it was estimated that carbon emissions could be reduced by 97% for the same amount of hydrogen and carbon black produced, and other harmful contaminants could also be reduced. In addition, this new production technology entails a lower cost and a higher production yield than other existing methods of producing both hydrogen and carbon black.

Deploying innovative technology to produce clean hydrogen and carbon black



Natural gas

Electricity from renewable energy to split natural gas into hydrogen and carbon black through heating without oxygen (i.e. pyrolysis)

-97% less
carbon emissions
compared to
conventional
processes

Sustainability

The growth of ESG investments also hinges on market development. To this end, the HKMA continuously contributes to international efforts to facilitate green and sustainable finance development through collaborating with like-minded investors and international organisations. In November 2021, the HKMA held its annual ESG Workshop with GPs of its private market investments, during which the GPs shared views on emerging ESG issues, including COP26, climate initiatives and the impact of COVID-19 variants, and their experiences on good ESG practices.

Capacity building

The HKMA has put a lot of emphasis on building internal capacity in terms of mobilising resources and using ESG data. Apart from engaging an external consultant to advise on scenario analysis and strategy formulation, the HKMA makes reference to data developed by an external provider when incorporating ESG factors in credit analysis, engaging with external managers on ESG matters and assessing carbon emissions of its portfolios. As the HKMA's ESG journey continues, it seeks to further upgrade research efforts and keep abreast of ESG-related developments through active participation in events held by industry-leading experts and

international organisations. To facilitate internal knowledge sharing, market insights and the latest industry practices on ESG-related topics and relevant policy developments are also discussed at regular EFIO ESG Committee meetings.

Risk management measures

Integration of ESG in credit analysis

To preserve portfolio value, the management of climate risks has been an integral part of the HKMA's investment processes of relevant asset classes. For instance, ESG factors are incorporated in the ongoing credit analysis of the bond portfolios, with regular monitoring of portfolio ESG scores.

Selection, appointment and monitoring of external managers

The HKMA attaches high importance to ESG integration and active ownership. ESG factors are taken into consideration in the selection, appointment and monitoring of its suite of external managers who are expected to discharge active ownership responsibilities on the HKMA's behalf. The following case study illustrates how the HKMA practises RI with external managers.

External managers' voting practices

HKMA's expectation and monitoring

As an active responsible investor, the HKMA requires its external managers to exercise voting rights in its public equities holdings and engage with investee companies. To ensure that its ownership responsibilities are properly discharged by external managers, the HKMA regularly reviews the extent of the engagement work as well as proxy voting results. In 2021, the HKMA reviewed the active ownership practices of a group of external managers managing equities portfolios in advanced economies. The review also assessed the external managers' climate risk management.

Outcomes of the review

The review found that, in general, the active ownership practices of external managers were acceptable. The HKMA noted an exception whereby one external manager had voted against the climate-related shareholder resolutions in most cases, despite the manager's public pledge projecting itself as a responsible asset manager with distinctive objectives and targets in climate change. When queried by the HKMA about the apparent inconsistency between its public pledge and proxy voting practice, the manager positively responded that going forward it would support shareholder resolutions that bring positive actions on climate change as far as possible. The external manager believes that concerted efforts among shareholders can accelerate the transition to greener outcomes.

Sustainability

Due diligence of general partners and encouraging transparency for private investments

In private market investments, the HKMA examines ESG policies and practices of GPs as a mandatory part of due diligence for every investment mandate.

Green accreditation is a predominant factor in real estate investments. Whilst GPs are expected to work with portfolio companies to integrate ESG factors, the HKMA has embarked on an initiative of requiring GPs to provide ESG information such as climate risk assessment and relevant metrics (including carbon emissions of underlying investments) to encourage transparency and facilitate risk monitoring.

Measuring carbon emissions

Having been on its ESG journey for several years, the HKMA uses quantitative measurement to conduct continuous risk monitoring and assess the impact of actions taken, with a view to strengthening its ESG risk management. In line with industry practices, the HKMA measures the carbon emissions of the Exchange Fund portfolios. Measuring carbon emissions allows the HKMA to understand the climate risk profile of its portfolios and identify the carbon-intensive areas that require further actions. Results from the analysis can also be used to guide the external managers to engage with targeted underlying companies with a view to reducing carbon emissions going forward.

Carbon emissions, expressed as tonnes of carbon dioxide (CO₂) equivalent (tCO₂e), are grouped under three categories according to the Greenhouse Gas Protocol¹⁴:

- ◆ **Scope 1 emissions** are direct emissions from sources owned or controlled by a company;
- ◆ **Scope 2 emissions** are indirect emissions from the generation of purchased electricity, steam, heating or cooling consumed by a company; and
- ◆ **Scope 3 emissions** are all other indirect emissions as a consequence of the activities of a company.

The HKMA uses the weighted average carbon intensity (WACI) to measure the Exchange Fund's carbon exposure. Currently, Scope 3 emissions are not assessed due to the high data uncertainty and lack of consistent methodology for measurement, which is prone to double or even multiple counting.

Among the diversified portfolios of the Exchange Fund, the HKMA prioritises the monitoring of carbon emissions of public equities portfolios given the availability of higher-quality data with more established measurement and disclosure practices. In addition, public equities are more susceptible to the impact of climate risks than other asset classes based on results of the above-mentioned climate scenario analysis. In Chart 1, the HKMA presents the WACI of the Exchange Fund's public equities portfolios from 2017 to 2020 using methodologies and tools developed by an external data provider. Where reported data were not available, the data provider estimated carbon emissions using its proprietary model. The reported and estimated data together covers more than 97% of the asset value of the assessed portfolios.

¹⁴ See Greenhouse Gas Protocol (<https://ghgprotocol.org/>).

Sustainability

Chart 1

Weighted average carbon intensity of the Exchange Fund's public equities portfolios



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As depicted in Chart 1, the WACI of the public equities portfolios as at the end of 2020 was 128 tCO₂e/US\$ million revenue, representing an overall 42% reduction compared to the 2017 level. The sharp reduction reflects the HKMA's determined efforts in proactively seeking climate-friendlier assets in its portfolios since the start of its RI journey in 2017. The WACI has also positively outperformed the relevant market investment benchmarks, showing that the Exchange Fund's public equities portfolios have lower exposure to carbon-intensive assets as compared to the broader market.

Weighted average carbon intensity

The WACI is a metric recommended by TCFD and NGFS. Expressed as tCO₂e/US\$ million revenue, it measures a portfolio's exposure based on emissions relative to gross revenues of underlying investments, weighted by their relative sizes in the portfolio, i.e.

$$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{issuer's US$M revenue}_i} \right)$$

WACI captures Scopes 1 and 2 emissions.

The HKMA is aware that the WACI is subject to short term fluctuations driven by multiple factors on top of emissions, such as changes in portfolio asset mix and strategies in response to market developments, and fluctuations in underlying asset valuations, and therefore would not expect a linear decline going forward. With concerted efforts by authorities, asset owners and managers in various jurisdictions to support the transformation into a low-carbon economy, the HKMA endeavours to press on with the positive momentum to progressively reduce the carbon emissions of its portfolios over the long term.

While the WACI is widely adopted for assessing portfolios' carbon exposure, it is inherently backward looking in nature, as it captures mainly the emissions data publicly disclosed by companies and does not account for companies' future transition pathways. In that regard, there are innovations on forward-looking metrics that can complement the measurement to encompass both climate risks and transition capacities. However, these methodologies are still in their infancy. As new disclosure standards issued by different jurisdictions and related collaborative efforts continue to enhance measurement methodologies with improved data availability and quality, the HKMA will continue to closely monitor developments with the aim of exploring suitable metrics for advancing the climate exposure monitoring.

Sustainability

SUSTAINABLE HKMA

The HKMA promotes and integrates sustainability considerations into its decisions, operations and practices. In doing so, the HKMA seeks to make contributions to society by leveraging its position as a central banking institution and a responsible corporate citizen.

The HKMA's approach is underpinned by three pillars: Environment, People and Social Responsibility (Figure 6).

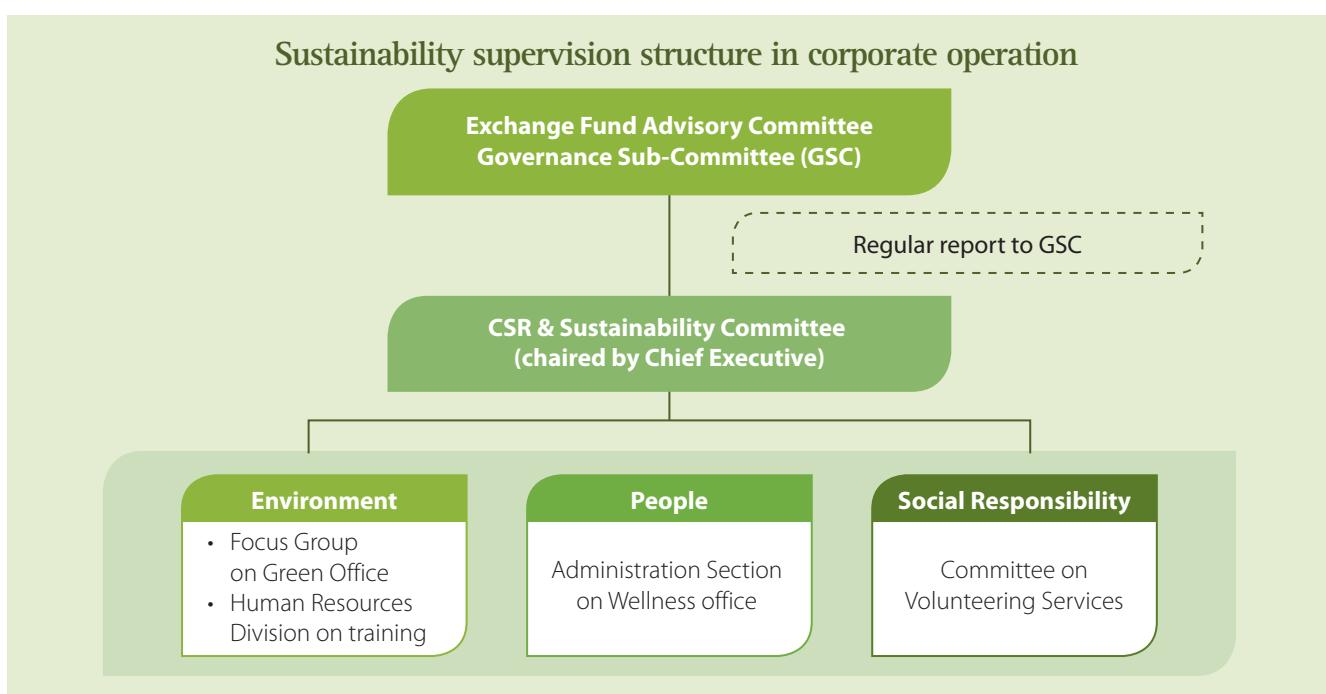
Governance

The HKMA has integrated sustainability governance into its management framework. An internal committee named CSR & Sustainability Committee (CSC) was formed in April 2021 to steer the HKMA's development and implementation of sustainability strategies. The CSC is chaired by the Chief Executive of the HKMA with the three Deputy Chief Executives and representatives from the Risk and Compliance Department and the Corporate Services Department as members. Regular reports are made to the Exchange Fund Advisory Committee's Governance Sub-Committee (GSC). Under the guidance of the CSC, there are different teams which carry out specific initiatives as shown in Figure 7 below.

Figure 6 The three pillars



Figure 7 Key components of the governance framework



Sustainability

In 2021, the HKMA strengthened its sustainability governance and conducted a survey to better understand staff's needs and expectations under the three pillars. Looking ahead, the HKMA plans to draw up a sustainability roadmap to clearly articulate its strategic directions ahead, setting out key initiatives and performance targets where appropriate, for each of the three pillars.

Climate change resilience policy

The following table summarises the HKMA's climate policy for its own operations:

Focus area	Approach
Governance 	<ul style="list-style-type: none">◆ The HKMA established the CSC, which meets regularly to discuss ESG issues, climate-related strategies and risk management, as well as to devise policies and actions to reduce the carbon footprint of the HKMA's daily operations. Regular reports are made to the GSC on these issues.
Strategy 	<ul style="list-style-type: none">◆ Climate change poses both physical and transition risks to the operations of any organisation, and the HKMA is no exception. To align with its long-term climate goals, the HKMA adopts best practices in measuring, managing and mitigating climate risks. <p>With the assistance of a consultant, the HKMA conducted a survey in 2021 to understand staff's expectations on environmental protection, and health and well-being in the office, and collected ideas to improve work in these areas. The HKMA enhanced its sustainability disclosures in its <i>Annual Report 2021</i>. A sustainability roadmap is being drawn up.</p>
Risk management 	<ul style="list-style-type: none">◆ The increasing frequency and severity of extreme weather events such as typhoons and floods may adversely affect the HKMA's premises, operations and employee safety. To minimise loss and enhance its adaptability to physical risks, the HKMA has formulated extreme weather contingency arrangements. <p>Beyond physical risks, the HKMA has also been monitoring its exposure to transition risks since 2017 by tracking its Scope 1 and Scope 2 GHG emissions, waste generation data as well as energy and paper consumption. The HKMA adopts an integrated approach to reduce its environmental footprint through energy efficiency improvements, water resources conservation and waste reduction from source in its daily operations.</p>
Metrics and Targets 	<ul style="list-style-type: none">◆ The HKMA will make best efforts to align with the Paris Agreement and will consider setting a quantifiable carbon target when drawing up the sustainability roadmap.

Sustainability

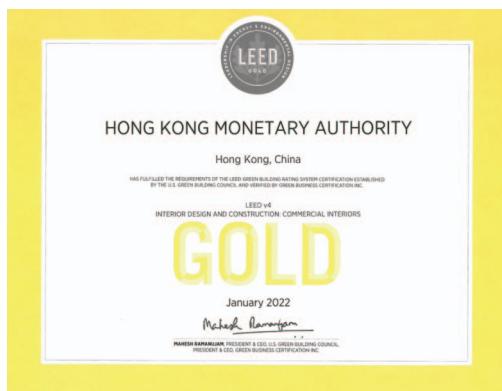
Environment

The HKMA is dedicated to enhancing environmental sustainability in its operations. Within the institution, it adopts green office initiatives to reduce its carbon footprint. Green building certification has been attained, and the HKMA will conduct energy audit and execute energy-saving plans going forward. The HKMA also pursues low-waste and recycling solutions to support Hong Kong's Municipal Waste Charging Scheme, which will become effective in 2023. At the same time, it is making best efforts to promote an environmentally friendly marketplace, including adopting measures to reduce paper usage by banks in the submission of returns to the HKMA, and to reduce the environmental impact of printing currency notes and minting coins.

Green office initiatives

Green buildings

The HKMA has obtained green building accreditation¹⁵ from LEED¹⁶. The certification demonstrates that the HKMA has adequately considered environmental factors in the interior design of the office.



The HKMA obtains Gold certification from LEED for Interior Design and Construction

Energy savings

The HKMA is committed to tackling its GHG emissions through reducing the use of electricity and fuel across its office operations and by HKMA-owned vehicles.

The HKMA has implemented various policies and energy-saving measures to reduce its energy consumption, including:

- ◆ installing energy-saving devices, including light-emitting diode (LED) lights, motion sensors and auto timers to control indoor lighting;
- ◆ setting a default room temperature of 25°C;
- ◆ procuring equipment with energy efficiency labels; and
- ◆ setting the power-saving mode as default for office equipment.



¹⁵ The accreditation is for part of the HKMA's office premises which have been recently renovated.

¹⁶ LEED (Leadership in Energy and Environmental Design) is a green building certification system developed by the United States Green Building Council and used worldwide.

Sustainability

The total energy consumption¹⁷ was 4,969.8 megawatt hour in 2021, or 3.44 megawatt-hour per head which represents a reduction of 8.06% compared to the 2017 level (Chart 2).

In 2021, the GHG emissions (Scope 1 and Scope 2)^{18,19} amounted to 2,948.18 tCO₂e, or 2.04 tCO₂e per head which represents a reduction of 22.42% compared to the 2017 level (Chart 3).

Reducing the use of paper and printing

The HKMA has rolled out various initiatives to reduce the use of paper, including:

- ◆ distributing electronic copies of meeting materials, equipping all staff with mobile devices and upgrading communication and collaboration tools in meeting rooms to achieve paperless meetings; in particular, meeting materials for the EFAC and its sub-committees have been fully digitalised;
- ◆ adopting automation and electronic processes for internal matters, including e-remittance advices for staff in relation to expense claims and payroll, training course enrolments, overseas travel records, conference room bookings and leave applications;
- ◆ using recycled paper and envelopes;
- ◆ using eco-friendly paper and ink for HKMA publications; and
- ◆ significantly scaling down the printing of hard copy HKMA publications.

Chart 2 Energy intensity

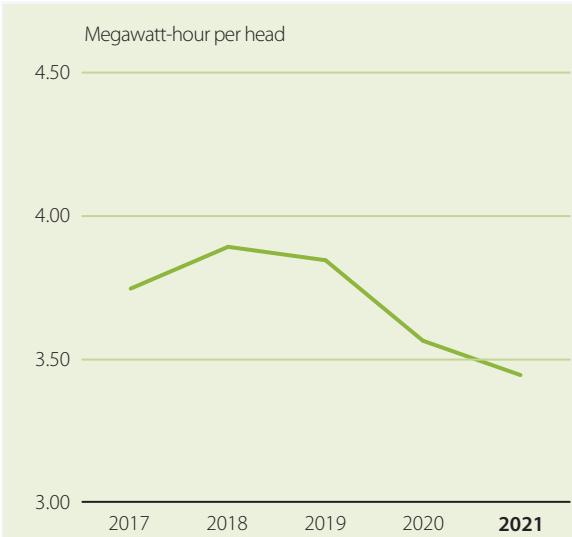


Chart 3 GHG intensity



¹⁷ Energy consumption data was based on the amount of purchased electricity and fuels consumed and the relevant conversion factors provided by the Department for Environment, Food & Rural Affairs of the UK, disclosed under the GRI requirements.

¹⁸ The calculation methodologies for GHG emissions are as follows:

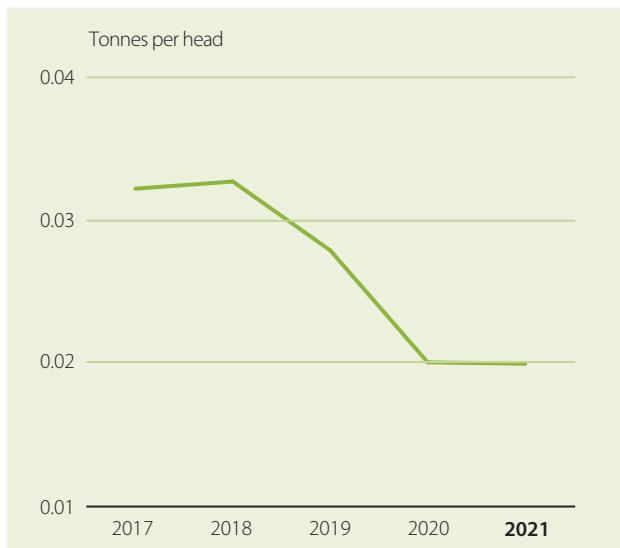
- The figures were calculated based on the reporting requirements of the *GHG Protocol Corporate Accounting and Reporting Standard* issued by the World Resources Institute and the World Business Council for Sustainable Development, and the *Practical Guide on Carbon Audit and Management — Guide to Low Carbon Offices* issued by the Environmental Protection Department in Hong Kong.
- The operational control approach was adopted for the purpose of GHG accounting and reporting.
- Scope 1 direct emissions cover carbon dioxide, methane, and nitrous oxide. Hydrofluorocarbons are insignificant in the HKMA's operations while perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride are not applicable.
- Scope 2 indirect emissions were calculated by the market-based method as defined by the *GHG Protocol Corporate Accounting and Reporting Standard*.

¹⁹ The HKMA's GHG emissions are primarily indirect GHG emissions arising from electricity consumption.

Sustainability

In 2021, the total paper consumption, covering the amount of A3 and A4 size paper consumed, was 28.72 tonnes, or 0.02 tonnes per head which represents a reduction of 38.15% compared to the 2017 level (Chart 4).

Chart 4 Paper consumption intensity



In addition, the HKMA has implemented a printing management system, which requires staff to log into the printer to confirm each print job, as a means to help bring down unnecessary printouts and toner usage.

Waste management

To support the Government's tightening waste management regulations, the HKMA has taken the following actions to reduce waste in its daily operations:

- ◆ providing reusable utensils and lunch boxes for staff to store food alongside a pledge to "stop using single-use items";
- ◆ collecting different types of waste, including paper, cans, bottles, batteries, compact discs and ink cartridges, for recycling;
- ◆ increasing the number of recycling bins in office premises; and
- ◆ encouraging colleagues to give out electronic lai sees (e-laissez) and recycle used red packets at the Chinese New Year.

The non-hazardous waste generated in 2021, including general waste and recyclable waste, totalled 176.34 tonnes, or 0.12 tonnes per head which represents a reduction of 22.73% compared to the 2017 level (Chart 5).

Chart 5 Non-hazardous waste intensity



Innovative technology and equipment solutions

Apart from reducing traditional waste, the HKMA has also put forward measures to reduce the number of hardware equipment with a view to minimising electronic waste. Since 2019, the HKMA has adopted a virtual desktop infrastructure together with lightweight (small form factor) front-end devices that reduce significantly the number of physical desktop computers to cut down on electronic waste. In 2020, the HKMA began using a private cloud infrastructure, which not only increased scalable computing and storage capacities and standardised internal system designs, but also decreased the use of physical server hardware. In addition, the HKMA has increasingly procured multifunctional devices that support printing, scanning and photocopying on one machine, which lowers the number of devices used on the office premises.

Sustainability

Green culture

The HKMA organises training sessions regularly to raise staff awareness and deepen their understanding of environmental and sustainability challenges facing the global economy. To catalyse adoption of environmentally-friendly habits by staff, regular training and adoption programmes are conducted to encourage staff to go paperless and upskill them to a green and digital way of working. Annual statistics on office-wide energy and paper consumption are shared with staff to help remind them to be environmentally conscious.

Green data centres

The HKMA runs two data centres (production and backup) which account for a major portion of the organisation's entire energy consumption. To save energy, the HKMA has adopted various green practices in its data centres, including:

- ◆ using LED lighting;
- ◆ conducting round-the-clock monitoring of data centres' environmental facilities and key metrics, such as power usage efficiency;
- ◆ carrying out ongoing enhancements of environmental factors, including fine-tuning airflow, temperature and humidity controls, to achieve energy efficiency targets comparable to leading data centres in Hong Kong;
- ◆ applying relevant green designs and energy efficiency best practices recommended in the BEAM guideline²⁰ in the data centres' fitting-out works (e.g. the in-row air-conditioning system); and
- ◆ adopting advanced technology to reduce electricity consumption; for instance, the HKMA has selected private cloud infrastructure that lessens the use of physical server hardware and, hence, consumes less electricity compared to a traditional setup.

To further enhance its data centres' energy efficiency, the HKMA engaged an external consultant in December 2021 to assess and provide suggestions on the green performance of its data centres. The consultant's study report is expected to be available in mid-2022.

The HKMA was awarded ESG Care Prize at the InnoESG Prize Presentation cum ESG Forum 2021 in recognition of its efforts to work towards a sustainable future.



Marketplace support

Electronic communication channels with banks

The HKMA advocates measures to enhance operational efficiency and minimise resource consumption for both the HKMA and the financial industry. The HKMA's online system, Submission Through Electronic Transmission (STET), is a one-stop platform for banks to make electronic submissions to the HKMA, encompassing various types of regular reports that are required on a weekly, monthly, quarterly or yearly basis. Another system, e-Delivery, enables the HKMA to disseminate information such as circulars and guidelines to the banks through a secure electronic communication channel. Both systems help to save hundreds of thousands of sheets of paper annually.

Electronic payments as an alternative to cash and paper cheques

The HKMA supports increased adoption of electronic payments by promoting the use of the Faster Payment System (FPS) and stored value facilities (SVFs). More information on FPS and SVFs can be found in the *International Financial Centre* chapter on pages 131 to 132 and 145.

²⁰ The BEAM Plus Data Centres Version 1.0 guideline was published jointly by the BEAM Society and the Hong Kong Green Building Council in September 2021.

Sustainability

Electronic lai sees

During the Chinese New Year, the HKMA encouraged the public to use electronic channels, including the FPS available via online or mobile banking, as well as SVF e-wallets, to give out e-laisees to support environmental protection and COVID-19 mitigation efforts. A publicity campaign was launched via different social and traditional media channels to educate the public on using the FPS to give out e-laisees. Major banks and e-wallet operators also launched programmes to promote the use of e-laisees, such as showing festive themes in the user interface, introducing user-friendly enhancements and rolling out lucky draws or games.



【電子派利是 過數話咁易】今個新年，齊齊用電子支付方法派利是，安全、便捷又環保！



Giving out e-laisees is safe, easy and green!

Reducing environmental impact in currency operations

Coin collection programme

The Coin Collection Programme spearheads the HKMA's efforts in the recycling of coins. Introduced in 2014, the Programme is the world's first structured coin collection scheme based on the concept of a mobile truck and has, over the years, won local and international awards in recognition of its innovative and green approach. Two Coin Carts, each equipped with two high-speed coin counting machines, visit all 18 districts of Hong Kong on a rotational basis to collect coins from the public, who are given the choices for exchanging their coins for banknotes, topping up their accounts managed by SVFs, such as Octopus cards or e-wallets, or donating to the Community Chest.

The two Coin Carts have so far served about one million people and collected more than 700 million coins with a total face value exceeding HK\$1 billion. In 2021, nearly 75% of users chose to digitalise some or all of their coin values by topping up their SVF accounts. Information about the Programme, including the service schedule, is available on a designated page of the HKMA website (coincollection.hkma.gov.hk).



The Coin Carts visit all 18 districts of Hong Kong on a rotational basis to collect coins from the public

Good-as-new notes

The HKMA has been promoting the use of good-as-new notes, i.e. used notes which are in good condition, as lai see since 2006. Apart from issuing a public announcement every year ahead of the Chinese New Year encouraging the public to make good use of good-as-new notes, *inSight*²¹ articles are also published regularly reminding readers how good-as-new notes can reduce the need for printing new notes, in turn reducing the environmental footprint. While it is difficult to quantify the exact number of good-as-new notes used as lai see, observations and reports by the note-issuing banks over the years have been encouraging. The HKMA will continue this annual campaign.

²¹

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 which are of interest to the public.

Sustainability

People

The HKMA seeks to foster a healthy and inclusive workplace that enhances employees' well-being. Championing both physical and mental health, the HKMA will further improve workplace air and water quality, provide more indoor greenery and set up additional common and social areas that encourage bonding between colleagues.

Wellness office

The HKMA strives to provide a supportive, collaborative, healthy and safe workplace that fosters staff well-being and development. The office provides an open layout that increases capacity and space efficiency. Workstations are equipped with height-adjustable desks to help improve staff health and productivity. Staff members' LCD monitors include eye protection features to lessen eye strain. Where there is an operational need, staff are provided with two or more LCD monitors for use.

Staff well-being

The HKMA promotes work-life balance. To enhance staff members' physical well-being, it regularly organises seminars related to the topics of healthy lifestyles, stress management and workplace safety, and arranges annual medical check-ups and flu vaccinations for staff. Physical and fitness activities, including special interest classes such as the eight brocades (a qigong exercise) and fitness challenges, are also organised.

On mental wellness, the HKMA sponsors personal counselling services for its staff as well as their immediate family members. These services offer professional and confidential counselling support via a consultation hotline, a face-to-face interview or a clinical psychology service.

COVID-19 pandemic support

In recognition of the exceptionally challenging working environment amid the COVID-19 pandemic, all the HKMA departments have worked together to keep the organisation's operations sufficiently resourced at all times. At the same time, the HKMA has introduced special arrangements to safeguard the health and safety of all its employees, including split-team operations, work-from-home arrangements, as well as staggered work and lunch hours to avoid people bunching up in the office during peak hours. Office hygiene has been regularly monitored and maintained at a high standard. Surgical face masks and alcohol wipes are provided to staff. Social distancing is encouraged in the office and meetings are held via video conference whenever possible. On top of a COVID-19 hotline for staff, an e-platform for COVID-19 has been rolled out as a one-stop shop for staff to receive regular updates of all COVID-19-related matters.

Equal opportunities policy

As an equal opportunities employer, the HKMA believes that everyone should be able to work in an environment free of discrimination, harassment, vilification and victimisation. The HKMA's equal opportunities policy applies to job advertisements, recruitments, terms and conditions of employment, performance assessments, promotions, transfers, training opportunities, dismissals, grievance procedures and general conduct.

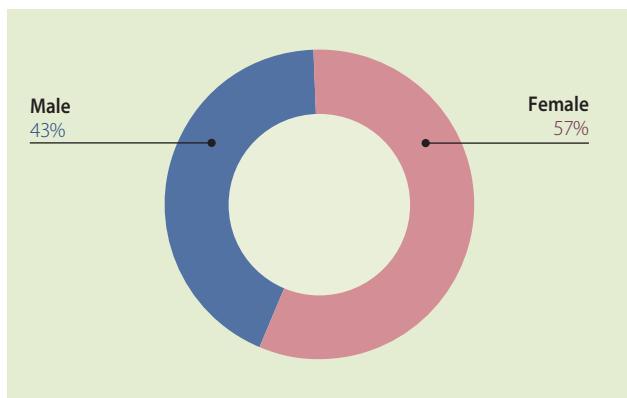
Sustainability

Diversity

The HKMA values diversity in its workforce, which has a balanced gender representation and covers a spectrum of different age groups. Female representation at the Executive Director grade or above was 31.3% as of January 2022.

Human capital key statistics as of 1 January 2022

Chart 6 Gender of staff

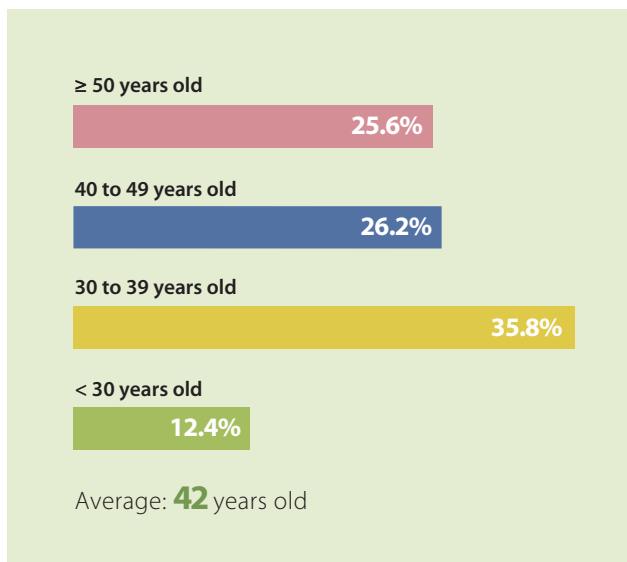


More details about the HKMA's remuneration policies and staff development initiatives can be found in the *Corporate Functions* chapter on pages 170 to 171.

Communications with staff

The HKMA values every employee's opinion. There are various communication tools for staff to offer their advice and express concerns. Two-way communication channels include corporate-wide town halls, staff suggestion box and periodic surveys.

Chart 7 Age of staff



Sustainability

Social responsibility

The HKMA is committed to fulfilling its corporate social responsibility. It looks beyond its immediate corporate boundaries to upstream and downstream sectors to broaden impacts. It advocates procuring goods and services from suppliers that uphold sustainability values. To support the wider community, it takes part in volunteer and charitable activities, and adopts measures to address the needs of special groups. The HKMA is also making ongoing efforts to promote financial literacy and inclusion. In response to the COVID-19 pandemic, the HKMA has been rolling out measures to support individuals and businesses in need to help Hong Kong's economy sail through these difficult times.

Sustainable procurement

The HKMA places high emphasis on supply chain risk management. The HKMA will continue to embed sustainability considerations in its procurement by adopting the following best practices:

- ◆ undertaking a comprehensive assessment of a supplier's product, service quality and price;
- ◆ considering a supplier's business ethics and labour practices through document screening to minimise ESG risk in the HKMA's supply chain;
- ◆ encouraging suppliers to provide environmentally friendly options in their proposals;
- ◆ including green requirements on product specifications as selection criteria where applicable; and
- ◆ procuring paper and goods that are environmentally friendly.

Volunteer services and charitable activities

The HKMA supports community services. It arranges a number of volunteer services and encourages staff to take part in different charitable activities (Table 1).

In 2021, in recognition of its commitment to care for the community, the HKMA was accredited with the "10 Years Plus Caring Organisation Logo" by the Hong Kong Council of Social Service for the 15th consecutive year.



Table 1 **Volunteer statistics from 2017–2021**

Year	Number of volunteer activities arranged	Number of participants
2017	13	135
2018	25	387
2019	26	300
2020	16	245
2021	36	758

Honour and respect the elderly

As the Hong Kong population ages, the HKMA is dedicated to caring for older adults, providing them with assistance and promoting a sense of self-worth among them. During 2021, the HKMA's volunteers reached out to 3,225 elderly and underprivileged people.

Sustainability

Distribute free meals to the elderly and underprivileged families

The HKMA Volunteer Team participated in the “Free Meal Distribution” activity organised by the Banyan Services Association and distributed 1,440 lunch boxes to the elderly and underprivileged families from February to November.



Sharing by a staff member who participated in the activity

“Greeting the elderly with big smiles and delivering hot meals to them can make a big difference in their lives. It's as simple as that, so why not lend a helping hand? I feel blessed to have the opportunity to serve. I hope that with everyone taking a small extra step, giving out an extra pinch of love, our world will be a better place.”

Other campaign highlights

Month	Campaign	Contributions
Jan	Red Packets Giving Campaign organised by Senior Citizen Home Safety Association	HKMA staff made donations, enabling deprived elderly and others in need to use the Care-on-Call Service free of charge, a 24/7 emergency support and integrated care service
Jan	Chinese New Year's charity sales organised by the Lok Sin Tong Benevolent Society	HKMA staff made donations to provide 725 meals to underprivileged families who were affected by COVID-19
Nov	Charity donations to the Banyan Services Association	HKMA staff made donations to provide 1,060 meals and 250 boxes of surgical masks
Dec	Gift packs distribution to the Banyan Services Association	HKMA staff donated and distributed 210 gift packs



Sustainability

Promoting community integration

Promoting community integration is another focus of the HKMA's volunteer services. During 2021, the HKMA participated in the following events.

Campaign highlights

	Number of participants
Paint to Love organised with the Hong Chi Association in March and December to paint canvas tote bags for the Association's students and trainees	113
 	
Fitness Challenge — "Walk More" X Hong Kong Blind Union organised from June to July to encourage staff to track the number of steps walked each day, and the top walkers enjoyed massage services offered by visually impaired individuals; this dual-purpose initiative enhanced staff's physical wellness and the employability of visually impaired masseurs	230
 	
Blindfold Lunch organised by Orbis in July and September to support services for visually impaired persons and raise public awareness of eye health	80
 	

Sustainability

Addressing the needs of special groups

Accessibility of Hong Kong banknotes

The HKMA is committed to helping the visually impaired differentiate among different denominations of Hong Kong banknotes. In addition to incorporating accessibility features, including Braille, tactile lines and high-tactility numerals in banknotes, the HKMA has sponsored the Hong Kong Society for the Blind to develop a mobile app, and together with the three note-issuing banks to sponsor the production of note-measuring templates to help the visually impaired identify the denominations of Hong Kong banknotes by scanning and measuring them respectively. Both the mobile app and the note-measuring templates are available free of charge.

Accessibility of public information

The HKMA continues to promote equal opportunities, and it endeavours to make its services accessible to all members of the public. The HKMA website has a clear navigation structure to help users search for content easily. A dedicated webpage on “Information in Other Languages” under the “Smart Consumers” section provides useful information on banking services in languages other than Chinese and English which are commonly used in Hong Kong. These languages include Bahasa Indonesia, Hindi, Nepali, Punjabi, Tagalog, Thai and Urdu, as well as Vietnamese, which was added in 2021. The HKMA is also committed to ensuring that its website and online publications conform to the World Wide Web Consortium’s *Web Content Accessibility Guidelines* 2.0 Level AA standard to the maximum extent possible, in order to help people with special needs access its online information.

Community engagement and public education

The HKMA actively runs various community engagement and education initiatives with wide-ranging themes.

The objectives of these activities are to promote smart and responsible use of banking and financial services, as well as to help the public, particularly the young generation, better understand the current developments and career opportunities in the financial industry in Hong Kong. More details about the HKMA’s public and consumer education work can be found in the *Corporate Functions* chapter on pages 160 to 162.

Sustainability

Advocating financial inclusion

The HKMA is dedicated to promoting financial inclusion in Hong Kong, and strives to enhance access to basic banking services by different segments of society to meet the basic daily needs of the public and the operational needs of legitimate businesses. In particular, the HKMA has been working closely with the banking industry on the following priority areas:

- ◆ encouraging banks to launch more physical banking facilities and develop digital and innovative channels for delivering basic banking services to serve the public, particularly the elderly, and residents in relatively remote areas and public housing estates;
- ◆ facilitating and monitoring the accessibility of bank accounts to individuals and small and medium-sized enterprises (SMEs);
- ◆ encouraging banks to launch the Simple Bank Account service that provides basic banking services with less extensive customer due diligence measures to eligible corporate customers;
- ◆ enhancing the accessibility of banking services to specific customer groups, for example, people of different races; people with physical, visual, hearing or intellectual impairments; and people with dementia (more details about the availability of barrier-free banking services at end-2021 can be found in the *Banking Stability* chapter on page 114);
- ◆ facilitating and monitoring the accessibility of bank credit to SMEs; and
- ◆ facilitating the establishment of virtual banks, which play an active role in promoting financial inclusion through their banking and other services.



Cash withdrawal service for the elderly

- Outlets of convenience store chains: **over 350**
- Hongkong Post Offices and Mobile Post Offices: **over 160**



Locations served by mobile bank branches: **30**



Simple Bank Accounts opened: **over 9,100**



Virtual bank licences granted: **8**

Sustainability

Providing guidance to banks on serving customers in need

To enhance accessibility to banking services by customers requiring special care, the HKMA has worked closely with the banking industry to develop industry guidelines which set out relevant principles and recommended good practices. Three sets of guidelines have been promulgated in recent years, with the latest guideline being issued in 2021.

Barrier-free banking measures for people with physical, visual and hearing impairments, for example:



**Practical Guideline
on Barrier-free
Banking Services**
Promulgated in
March 2018 for
implementation by
March 2021

Physical barrier-free measures

- ◆ provide permanent or temporary ramps for wheelchair access
- ◆ install call buttons at the entrance
- ◆ construct a main entrance with sufficiently clear width
- ◆ install service counters or meeting rooms for wheelchair users
- ◆ install automated teller machines (ATMs) at a height suitable for wheelchair users
- ◆ enhance design of ATM keypad protection covers

Visual barrier-free measures

- ◆ display notices stating guide dogs are welcome
- ◆ install non-slip nosings in contrasting colours on stairs
- ◆ provide voice navigation ATMs and tactile guide paths
- ◆ attach the hotline number in Braille on voice navigation ATMs
- ◆ provide audible security devices upon request
- ◆ enhance colour contrast of ATMs

Hearing barrier-free measures

- ◆ equip branches with assistive listening systems
- ◆ facilitate reporting of unauthorised transactions via live chat services
- ◆ facilitate reporting of lost credit and debit cards via online banking
- ◆ allow a third party to handle emergency services through telephone banking on behalf of the customer

Sustainability



Guideline on Banking Services for Persons with Intellectual Disabilities

Promulgated in December 2020 for implementation by December 2021



Guideline on Banking Services for Persons with Dementia

Promulgated in December 2021 for implementation by December 2022

Examples of recommended good practices

Provide services to meet banking needs

- ◆ open a basic personal or joint savings account, or a guardianship account
- ◆ offer ATM cards or debit cards with payment functions
- ◆ offer online banking services with basic functions
- ◆ allow using traditional written or seal signatures
- ◆ provide flexibility and waivers for services charges, e.g. fee for not maintaining the minimum deposit balance, counter service charge, ATM card annual fee, fee for getting printed copies of account statements, and other banking service charges

Put in place customer protection measures

- ◆ allow changing the daily limits for withdrawal, payment and transfer
- ◆ provide reminders for large transactions
- ◆ avoid encouraging applications for credit cards, loans or investment services through online or electronic channels
- ◆ avoid marketing investment, insurance and credit products

Enhance customer communications and staff training

- ◆ enhance customer communication skills and knowledge on banking services
- ◆ co-operate with social welfare institutions

Provide appropriate banking services

- ◆ open basic bank accounts
- ◆ offer ATM cards or debit cards with payment functions
- ◆ offer online and telephone banking services
- ◆ allow using traditional written or seal signatures
- ◆ exempt minimum balance requirement
- ◆ provide flexibility and waivers for service charges, e.g. counter service charge, ATM card annual fee, fee for getting printed copies of account statements and other banking service charges

Put in place customer protection measures

- ◆ allow changing daily withdrawal and debit limits
- ◆ provide reminders for large transactions
- ◆ avoid marketing investment, insurance and credit products

Enhance customer communications and staff training

- ◆ help customers understand the arrangements for authorisation under different circumstances
- ◆ explain roles and responsibilities of authorised persons
- ◆ enhance understanding on dementia and the related banking services
- ◆ co-operate with social welfare institutions

Sustainability

Community support amid the pandemic

The HKMA, together with the banking sector, has been rolling out a series of measures to support SMEs and personal customers in need to help them sail through these difficult times. Details of the HKMA's multi-pronged support measures are available on a dedicated webpage on the HKMA website.



How has the HKMA helped banks to support their customers?

Increased banking system liquidity



Corporate customers

Launched the Pre-approved Principal Payment Holiday Scheme in May 2020 and extended it four times; the new expiry date is now end-October 2022, with over 100 participating banks



Individual customers

52,000 applications for relief measures granted up to end-2021, totalling **HK\$53 billion**

Facilitate banks' support of the economy through the Banking Sector SME Lending Coordination Mechanism

83,000 applications for payment holidays and other relief measures totalling **HK\$920 billion** granted by banks up to end-2021

Banks are encouraged to offer principal payment holidays for residential mortgages and commercial vehicle loans taken out by personal customers

More flexible in handling new loan applications for upgrading commercial vehicles and extended maximum loan tenor for new commercial vehicle loans

>47,000 applications for the Special 100% Loan Guarantee approved up to end-2021, totalling **over HK\$81 billion**

Sustainability

Relief measures for businesses and individuals

Supporting smaller firms under the SME Financing Guarantee Scheme

The SME Financing Guarantee Scheme operated by HKMC Insurance Limited (HKMCI)²² helps to alleviate cash-flow pressures on SMEs. This scheme covers different products, such as the Special 100% Loan Guarantee, and the 80% and 90% Guarantee Products, which collectively approved over 26,500 applications in 2021. These initiatives have provided crucial support to SMEs, enabling them to carry on their businesses and maintain the jobs of their employees.

Setting up dedicated channels to handle enquiries on the Pre-approved Principal Payment Holiday Scheme for corporate customers

The Pre-approved Principal Payment Holiday Scheme was first launched in May 2020 to provide financial relief to eligible corporate borrowers affected by the outbreak of COVID-19. In light of another wave of local infections, the scheme was further extended to end-October 2022. The dedicated email account and enquiry hotline set up to answer queries from corporate borrowers and to follow up on their comments remained in service, handling more than 820 cases since the launch of the scheme in 2020 to end-2021.

Helping social security recipients residing on the Mainland to receive payments without returning to Hong Kong amid COVID-19

Due to pandemic-related travel restrictions, recipients and appointees of the Portable Comprehensive Social Security Assistance Scheme, Guangdong Scheme and Fujian Scheme residing in the Mainland may not be able to return to Hong Kong to receive their payments. The HKMA, the Social Welfare Department and the Hong Kong Association of Banks have jointly worked out arrangements to make it possible for these recipients and appointees to make cash withdrawals in the Mainland. Retail banks in Hong Kong allow these individuals to activate the cash withdrawal function of their Hong Kong banks' ATM cards through various channels in the Mainland. These individuals may also set up standing instructions remotely via a mail-in option, internet banking or mobile banking to regularly remit social security payments from their bank accounts in Hong Kong to their designated bank accounts in the Mainland.

²²

The Hong Kong Mortgage Corporation Limited (HKMC) is wholly owned by the Government through the Exchange Fund. HKMCI is a wholly owned subsidiary of the HKMC.

Sustainability

INTERNATIONAL COLLABORATION

The HKMA plays an active role in various international and regional sustainable finance and climate-focused groups to share experiences and co-ordinate efforts on the international front to tackle climate risks and enrich the green and sustainable finance ecosystem²³. The HKMA's participation provides an opportunity for it to contribute to the central banking and regulatory community in addressing climate change, while benefiting from the experience and insights of other jurisdictions when developing its local framework.

The HKMA is a member of the NGFS, which aims to share best practices and contribute to the development of environment and climate risk management in the financial sector, and to mobilise mainstream finance to support the transition towards a sustainable economy. The HKMA participates in NGFS workstreams relating to microprudential and supervision, macrofinancial, scaling up green finance, bridging the data gaps and research. In addition, the HKMA participates in the joint NGFS-INSPIRE²⁴ Study Group on "Biodiversity and Financial Stability".

The HKMA also participates in the work of the Basel Committee on Banking Supervision's Task Force on Climate-related Financial Risks in developing principles for the effective management and supervision of climate-related financial risks.

In addition, the HKMA participates in the Bank for International Settlements Innovation Network, which explores technology solutions that help banks identify, measure and monitor their exposures to climate risks.

The HKMA also represents Hong Kong in the International Platform on Sustainable Finance (IPSF) jointly with the SFC, which has been working to develop the Common Ground Taxonomy and promote ESG disclosures.

The HKMA actively participates in the work of the Financial Stability Board in assessing the availability of data through which climate-related risk to financial stability could be monitored. The HKMA also contributes to the Financial Stability Board's work in climate risk management, promoting climate-related disclosures, and reviewing regulatory and supervisory approaches to addressing climate risk at financial institutions.

The HKMA is a member of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)²⁵, which has been increasing its strategic focus on climate-related risks and sustainable finance. The HKMA is the Champion of the Interest Group on Sustainable Finance of EMEAP's Working Group on Banking Supervision, and has led studies on green classifications and climate risk stress testing. The HKMA also chairs EMEAP's Working Group on Financial Markets, who finalised a project to promote investment in green bonds through the Asian Bond Fund.

The HKMA is a signatory of the *Principles for Responsible Investment*, which is the world's leading proponent of RI supported by United Nations, and participates in formulating ESG best practices and encourages other investors to adopt RI.

Additionally, the HKMA is a member of the not-for-profit organisation, FCLTGlobal, which works to foster a longer-term focus in business and investment decision-making through workshops and research studies.

²³ See the *Banking Stability* chapter on pages 98 to 100 and *International Financial Centre* chapter on pages 148 to 149 for information about the HKMA's international work in non-sustainability related areas.

²⁴ The International Network for Sustainable Financial Policy Insights, Research, and Exchange (INSPIRE) is an independent research network built to support the NGFS's work.

²⁵ The EMEAP is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region.

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 217 to 319, which comprise the balance sheets of the Exchange Fund and of the Group as at 31 December 2021, 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 2021, 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 2021. 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
<i>Valuation of financial assets and financial liabilities at fair value</i>	
Refer to notes 2.5, 2.6 and 38.1 to the financial statements.	
As at 31 December 2021, the Group had financial assets totalling HK\$4,502,475 million and financial liabilities totalling HK\$1,150,861 million valued at fair value.	The audit procedures on valuation of financial assets and financial liabilities at fair value included:
For 89% 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).	<ul style="list-style-type: none"> – 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;
For the remaining 11% 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\$517,316 million, including mainly unlisted investment funds.	<ul style="list-style-type: none"> – 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.
Given the substantial amount and the estimations involved, valuation of financial assets and financial liabilities at fair value was a key audit matter.	
<i>Valuation of investment properties at fair value</i>	
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\$27,089 million as at 31 December 2021. The Group also had interests in one associate and twenty one joint ventures totalling HK\$45,172 million, whose principal activities were holding overseas investment properties. The fair values of these investment properties, whether held by the Group directly or by associate 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:
	<ul style="list-style-type: none"> – obtaining and reviewing the valuation reports of investment properties held by the Group directly or by associate 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.

Report of the Director of Audit (continued)

Other information

The Monetary Authority is responsible for the other information. The other information comprises all the information included in the 2021 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.

John Chu
Director of Audit

23 May 2022

Audit Commission
6th Floor, High Block
Queensway Government Offices
66 Queensway
Hong Kong

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Exchange Fund – Income and Expenditure Account

for the year ended 31 December 2021

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2021	2020	2021	2020
INCOME					
Interest income		21,710	32,784	20,159	31,179
Dividend income		20,371	14,662	13,983	11,799
Income from investment properties		1,158	867	–	–
Net realised and unrealised gains		135,805	194,301	30,464	137,671
Net exchange gain		15,951	9,708	16,817	9,607
Investment income	4(a)	194,995	252,322	81,423	190,256
Bank licence fees		124	127	124	127
Net premiums earned	5	2,872	2,326	–	–
Other income		623	500	75	83
TOTAL INCOME		198,614	255,275	81,622	190,466
EXPENDITURE					
Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	4(b)	(109,850)	(81,299)	(109,850)	(81,299)
Other interest expense	4(c)	(1,645)	(10,257)	(2,720)	(10,147)
Operating expenses	4(d)	(6,640)	(6,210)	(5,323)	(4,926)
Note and coin expenses	4(e)	(210)	(382)	(210)	(382)
Reversal of/(Charge for) impairment allowances	4(f)	18	(97)	–	–
Net claims incurred, benefits paid and movement in policyholders' liabilities	5	(4,079)	(3,542)	–	–
TOTAL EXPENDITURE		(122,406)	(101,787)	(118,103)	(96,754)
SURPLUS/(DEFICIT) BEFORE SHARE OF PROFIT/(LOSS)					
OF ASSOCIATES AND JOINT VENTURES		76,208	153,488	(36,481)	93,712
Share of profit/(loss) of associates and joint ventures, net of tax		3,812	(3,211)	–	–
Gain on disposal of a joint venture		188	–	–	–
SURPLUS/(DEFICIT) BEFORE TAXATION		80,208	150,277	(36,481)	93,712
Income tax	6	(641)	45	–	–
SURPLUS/(DEFICIT) FOR THE YEAR		79,567	150,322	(36,481)	93,712
SURPLUS/(DEFICIT) FOR THE YEAR ATTRIBUTABLE TO:					
Owner of the Fund		79,268	150,501	(36,481)	93,712
Non-controlling interests		299	(179)	–	–
		79,567	150,322	(36,481)	93,712

The notes on pages 225 to 319 form part of these financial statements.

Exchange Fund – Statement of Comprehensive Income

for the year ended 31 December 2021

	Group		Fund	
(Expressed in millions of Hong Kong dollars)	2021	2020	2021	2020
SURPLUS/(DEFICIT) FOR THE YEAR	79,567	150,322	(36,481)	93,712
OTHER COMPREHENSIVE (LOSS)/INCOME				
Items that will not be reclassified to income and expenditure account				
Equity securities measured at fair value through other comprehensive income				
– fair value changes on revaluation	(34)	160	(34)	160
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 on revaluation	8	(16)	–	–
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	(1,208)	2,434	–	–
Translation reserve released on dissolution of a subsidiary	–	13	–	–
OTHER COMPREHENSIVE (LOSS)/INCOME				
FOR THE YEAR, NET OF TAX	(1,234)	2,591	(34)	160
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR	78,333	152,913	(36,515)	93,872
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR ATTRIBUTABLE TO:				
Owner of the Fund	78,040	153,073	(36,515)	93,872
Non-controlling interests	293	(160)	–	–
	78,333	152,913	(36,515)	93,872

The notes on pages 225 to 319 form part of these financial statements.

Exchange Fund – Balance Sheet

as at 31 December 2021

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2021	2020	2021	2020
ASSETS					
Cash and money at call	8	185,467	148,947	179,229	145,255
Placements with banks and other financial institutions	9	164,268	143,149	121,596	121,796
Financial assets measured at fair value through income and expenditure account	10	4,492,896	4,335,548	4,035,011	3,981,157
Financial assets measured at fair value through other comprehensive income	11	4,983	5,789	1,336	1,370
Derivative financial instruments	12(a)	4,596	2,588	3,628	1,791
Debt securities measured at amortised cost	13	11,207	9,730	–	–
Loan portfolio	14	87,412	49,433	–	–
Gold	15	948	979	948	979
Other assets	16	30,501	45,545	25,230	43,178
Interests in subsidiaries	17	–	–	200,158	200,706
Interests in associates and joint ventures	18	47,545	42,718	54	–
Investment properties	19	27,089	23,135	–	–
Property, plant and equipment	20	3,353	3,441	2,965	3,016
TOTAL ASSETS		5,060,265	4,811,002	4,570,155	4,499,248
LIABILITIES AND EQUITY					
Certificates of Indebtedness	21	592,364	556,204	592,364	556,204
Government-issued currency notes and coins in circulation	21	13,126	12,844	13,126	12,844
Balance of the banking system	22	377,516	457,466	377,516	457,466
Placements by banks and other financial institutions	23	–	87,650	–	87,650
Placements by Fiscal Reserves	24	973,303	881,832	973,303	881,832
Placements by HKSAR Government funds and statutory bodies	25	394,249	342,471	394,249	342,471
Placements by subsidiaries	26	–	–	26,237	15,469
Exchange Fund Bills and Notes issued	27	1,148,569	1,068,880	1,148,569	1,068,880
Derivative financial instruments	12(a)	2,292	7,469	1,667	7,023
Bank loans	28	16,130	12,050	–	–
Other debt securities issued	29	116,334	62,587	–	–
Other liabilities	30	274,662	248,090	236,341	226,111
Total liabilities		3,908,545	3,737,543	3,763,372	3,655,950

Exchange Fund – Balance Sheet (continued)
as at 31 December 2021

(Expressed in millions of Hong Kong dollars)	Group		Fund	
	2021	2020	2021	2020
Accumulated surplus	1,150,025	1,070,757	805,940	842,421
Revaluation reserve	860	886	843	877
Translation reserve	(1,302)	(100)	–	–
Total equity attributable to owner of the Fund	1,149,583	1,071,543	806,783	843,298
Non-controlling interests	2,137	1,916	–	–
Total equity	1,151,720	1,073,459	806,783	843,298
TOTAL LIABILITIES AND EQUITY	5,060,265	4,811,002	4,570,155	4,499,248

Eddie Yue

Monetary Authority
23 May 2022

The notes on pages 225 to 319 form part of these financial statements.

Exchange Fund – Statement of Changes in Equity

for the year ended 31 December 2021

(Expressed in millions of Hong Kong dollars)	Attributable to owner of the Fund					Total
	Accumulated surplus	Revaluation reserve	Translation reserve	Total attributable to owner of the Fund	Non-controlling interests	
Group						
At 1 January 2020	920,256	742	(2,528)	918,470	2,111	920,581
Surplus for the year	150,501	–	–	150,501	(179)	150,322
Other comprehensive income for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income	–	144	–	144	–	144
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	2,415	2,415	19	2,434
Translation reserve released on dissolution of a subsidiary	–	–	13	13	–	13
Total comprehensive income for the year	150,501	144	2,428	153,073	(160)	152,913
Capital distribution to non-controlling interests	–	–	–	–	(25)	(25)
Derecognition of non-controlling interests						
on dissolution of a subsidiary	–	–	–	–	(1)	(1)
Dividends paid to non-controlling interests	–	–	–	–	(9)	(9)
At 31 December 2020	1,070,757	886	(100)	1,071,543	1,916	1,073,459
At 1 January 2021						
Surplus for the year	79,268	–	–	79,268	299	79,567
Other comprehensive loss for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income	–	(26)	–	(26)	–	(26)
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	(1,202)	(1,202)	(6)	(1,208)
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

Exchange Fund – Statement of Changes in Equity (continued)
for the year ended 31 December 2021

	Accumulated surplus	Revaluation reserve	Total attributable to owner of the Fund
(Expressed in millions of Hong Kong dollars)			
Fund			
At 1 January 2020	748,709	717	749,426
Surplus for the year	93,712	–	93,712
Other comprehensive income for the year			
Fair value changes on financial assets measured at fair value through other comprehensive income	–	160	160
Total comprehensive income for the year	93,712	160	93,872
At 31 December 2020	842,421	877	843,298
At 1 January 2021	842,421	877	843,298
Deficit for the year	(36,481)	–	(36,481)
Other comprehensive loss for the year			
Fair value changes on financial assets measured at fair value through other comprehensive income	–	(34)	(34)
Total comprehensive loss for the year	(36,481)	(34)	(36,515)
At 31 December 2021	805,940	843	806,783

The notes on pages 225 to 319 form part of these financial statements.

Exchange Fund – Statement of Cash Flows

for the year ended 31 December 2021

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2021	2020	2021	2020
Cash flows from operating activities					
Surplus/(Deficit) before taxation		80,208	150,277	(36,481)	93,712
Adjustments for:					
Interest income	4(a)	(21,710)	(32,784)	(20,159)	(31,179)
Dividend income	4(a)	(20,371)	(14,662)	(13,983)	(11,799)
Change in fair value of investment properties	4(a)	123	356	–	–
Gain on disposal of debt securities measured at amortised cost	4(a)	(3)	(11)	–	–
Interest expense	4(b) & 4(c)	111,495	91,556	112,570	91,446
Depreciation	4(d)	377	376	260	251
(Reversal of)/Charge for impairment allowances	4(f)	(18)	97	–	–
Share of (profit)/loss of associates and joint ventures		(3,812)	3,211	–	–
Gain on disposal of a joint venture		(188)	–	–	–
Elimination of exchange differences and other non-cash items		(302)	(4,999)	(2,284)	(3,185)
Interest received		22,646	34,718	20,823	33,027
Dividends received		20,191	14,693	12,356	11,609
Interest paid		(95,914)	(51,982)	(95,351)	(51,407)
Income tax paid		(164)	(153)	–	–
		92,558	190,693	(22,249)	132,475
Change in fair value of derivatives and other debt securities issued		(7,508)	785	(7,194)	616
Change in carrying amount of:					
– placements with banks and other financial institutions		(29,927)	7,219	(6,006)	(1,272)
– financial assets measured at fair value through income and expenditure account		(105,004)	(498,230)	886	(427,253)
– loan portfolio		(37,950)	(40,194)	–	–
– gold		31	(186)	31	(186)
– other assets		15,031	80,269	17,465	78,752
– Certificates of Indebtedness, government-issued currency notes and coins in circulation		36,442	39,998	36,442	39,998
– balance of the banking system		(79,950)	389,778	(79,950)	389,778
– placements by banks and other financial institutions		(87,650)	52,650	(87,650)	52,650
– placements by Fiscal Reserves		91,471	(255,658)	91,471	(255,658)
– placements by HKSAR Government funds and statutory bodies		51,778	14,065	51,778	14,065
– placements by subsidiaries		–	–	10,768	2,872
– Exchange Fund Bills and Notes issued		79,689	(83,447)	79,689	(83,447)
– other liabilities		9,887	5,662	(6,917)	(3,077)
Net cash from/(used in) operating activities		28,898	(96,596)	78,564	(59,687)

Exchange Fund – Statement of Cash Flows (continued)
for the year ended 31 December 2021

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2021	2020	2021	2020
Cash flows from investing activities					
Proceeds from sale or redemption of financial assets measured at fair value through other comprehensive income		767	1,136	–	–
Purchase of financial assets measured at fair value through other comprehensive income		–	(623)	–	–
Proceeds from sale or redemption of debt securities measured at amortised cost		1,364	3,037	–	–
Purchase of debt securities measured at amortised cost		(2,745)	(773)	–	–
Investments in subsidiaries		–	–	(2,500)	(70)
Net cash inflow from deemed acquisition of a subsidiary	18.2	64	–	–	–
Decrease/(Increase) in loans to subsidiaries		–	–	3,048	(15,982)
(Increase)/Decrease in interests in associates and joint ventures		(3,182)	1,727	(54)	–
Proceeds from disposal of a joint venture		667	–	–	–
Additions of investment properties		(495)	(105)	–	–
Additions of property, plant and equipment		(276)	(156)	(204)	(99)
Dividends received from subsidiaries		–	–	1,447	221
Net cash (used in)/from investing activities		(3,836)	4,243	1,737	(15,930)
Cash flows from financing activities					
Bank loans raised	31(c)	1,498	183	–	–
Proceeds from issue of other debt securities	31(c)	109,360	58,244	–	–
Redemption of other debt securities issued	31(c)	(55,533)	(37,027)	–	–
Principal portion of lease payments	31(c)	(115)	(122)	(77)	(72)
Capital distribution to non-controlling interests		(94)	(25)	–	–
Dividends paid to non-controlling interests		(5)	(9)	–	–
Net cash from/(used in) financing activities		55,111	21,244	(77)	(72)
Net increase/(decrease) in cash and cash equivalents		80,173	(71,109)	80,224	(75,689)
Cash and cash equivalents at 1 January		288,498	356,420	270,978	343,482
Effect of foreign exchange rate changes		2,282	3,187	2,284	3,185
Cash and cash equivalents at 31 December	31(a)	370,953	288,498	353,486	270,978

The notes on pages 225 to 319 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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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.

Certain comparative figures have been restated to conform to the current year presentation of the Group financial statements.

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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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 do 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. 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 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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(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 2025 (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 are 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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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.

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.

The lease liability is remeasured if the Group changes its assessment of whether it will exercise an extension or termination option. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in the income and expenditure account if the carrying amount of the right-of-use asset has been reduced to zero.

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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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 provision 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 is 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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

- (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 income

	Group		Fund	
	2021	2020	2021	2020
Interest income:				
– from derivative financial instruments	313	206	318	198
– from financial assets measured at fair value through income and expenditure account	19,635	29,868	19,246	29,626
– from financial assets measured at fair value through other comprehensive income	46	89	–	–
– from financial assets measured at amortised cost	1,716	2,621	595	1,355
	21,710	32,784	20,159	31,179
Dividend income:				
– from financial assets measured at fair value through income and expenditure account	20,346	14,662	12,511	11,578
– from financial assets measured at fair value through other comprehensive income	25	–	25	–
– from subsidiaries	–	–	1,447	221
	20,371	14,662	13,983	11,799
Income from investment properties:				
– rental income	1,281	1,223	–	–
– change in fair value on revaluation	(123)	(356)	–	–
	1,158	867	–	–
Net realised and unrealised gains:				
– on derivative financial instruments	(2,092)	4,019	(2,099)	3,381
– on financial assets and financial liabilities measured at fair value through income and expenditure account	137,925	190,080	32,594	134,099
– on debt securities measured at amortised cost	3	11	–	–
– on gold	(31)	191	(31)	191
	135,805	194,301	30,464	137,671
Net exchange gain	15,951	9,708	16,817	9,607
TOTAL	194,995	252,322	81,423	190,256

Net realised and unrealised gains included a loss of HK\$258 million (2020: HK\$855 million gain) on hedging instruments designated as fair value hedge and a gain of HK\$263 million (2020: HK\$849 million loss) 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	
	2021	2020
Interest expense on placements by Fiscal Reserves:		
– at a fixed rate determined annually ¹	34,448	32,644
– at a composite rate determined annually ²	58,565	37,148
Interest expense on placements by HKSAR Government funds and statutory bodies:		
– at a fixed rate determined annually ¹	16,835	11,496
– at market-based rates	2	11
TOTAL	109,850	81,299

¹ This rate was fixed at 4.7% per annum for 2021 (2020: 3.7%) – notes 24, 25 and 30.

² The composite rate was 17.8% per annum for 2021 (2020: 12.3%) – notes 24 and 30.

(c) Other interest expense

	Group		Fund	
	2021	2020	2021	2020
Interest expense on Exchange Fund Bills and Notes issued	441	8,974	441	8,974
Interest expense on placements by subsidiaries	–	–	2,157	889
Interest expense on derivative financial instruments	17	17	2	2
Interest expense on lease liabilities	16	17	4	7
Interest expense on other financial instruments	1,171	1,249	116	275
TOTAL	1,645	10,257	2,720	10,147

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(d) Operating expenses

	Group		Fund	
	2021	2020	2021	2020
Staff costs				
Salaries and other staff costs	1,954	1,896	1,477	1,439
Retirement benefit costs	155	151	127	124
Premises and equipment expenses				
Depreciation	377	376	260	251
Other premises expenses	94	93	76	74
General operating costs				
Maintenance of office and computer equipment	172	162	142	138
Financial infrastructure operation	157	137	92	63
Professional, consulting and other services	149	119	91	80
Financial information and communication services	89	83	72	68
Public education and publicity	59	46	22	16
External relations	16	13	13	12
Training	7	5	5	4
Expenses relating to investment properties				
– Operating expenses	192	136	–	–
– Variable lease payment expenses	12	19	–	–
Others	52	46	31	28
Recovery of operating expenses for special 100% loan guarantee under the SME Financing Guarantee Scheme (note 14)	(87)	(22)	–	–
Investment management and custodian fees				
Management and custodian fees	1,968	1,767	1,765	1,537
Transaction costs	283	271	280	269
Withholding tax	756	745	756	745
Professional fees and others	235	167	114	78
TOTAL	6,640	6,210	5,323	4,926

The aggregate emoluments of senior staff members (Executive Directors and above) of the Group are as follows:

	Group	
	2021	2020
Fixed pay	86.8	84.5
Variable pay	22.8	22.6
Other benefits	11.7	13.4
	121.3	120.5

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 (2020: 18). The higher figures in the table below reflected staff movements during the respective years.

HK\$	Group	
	2021	2020
1,000,000 or below	1	–
1,000,001 to 1,500,000	–	1
4,000,001 to 4,500,000	–	1
5,000,001 to 5,500,000	5	5
5,500,001 to 6,000,000	3	3
6,000,001 to 6,500,000	2	2
6,500,001 to 7,000,000	2	1
7,000,001 to 7,500,000	2	–
7,500,001 to 8,000,000	–	2
8,000,001 to 8,500,000	2	1
8,500,001 to 9,000,000	–	1
9,500,001 to 10,000,000	2	1
10,000,001 to 10,500,000	–	1
	19	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) (Reversal of)/Charge for impairment allowances

	Group		Fund	
	2021	2020	2021	2020
(Reversal of)/Charge for impairment allowances				
Placements with banks and other financial institutions (note 37.3.3(a))	3	1	–	–
Debt securities measured at amortised cost (note 37.3.3(b))	1	2	–	–
Loan portfolio (note 37.3.3(c))	(4)	73	–	–
Provision on loan commitments (note 37.3.3(d))	(18)	21	–	–
TOTAL	(18)	97	–	–

5 REVENUE ACCOUNT FOR INSURANCE BUSINESS

	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)

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group		
	2020		
	Non-life insurance	Life insurance	Total
Gross premiums written	2,072	2,538	4,610
Reinsurance premiums	(231)	–	(231)
Net premiums written	1,841	2,538	4,379
Movement in unearned premiums, net	(1,386)	–	(1,386)
Net commission and levy expenses	(666)	(1)	(667)
Net premiums earned	(211)	2,537	2,326
Net claims incurred, benefits paid and movement in policyholders' liabilities	(24)	(3,518)	(3,542)
Net premiums earned after provisions	(235)	(981)	(1,216)

6 INCOME TAX

(a) Income tax charged in/(credited to) the income and expenditure account

	Group		Fund	
	2021	2020	2021	2020
Current tax				
Hong Kong profits tax:				
– current year	56	49	–	–
– over-provision in prior years	(22)	–	–	–
Taxation outside Hong Kong:				
– current year	216	113	–	–
– under-provision in prior years	4	8	–	–
Deferred tax				
Charge/(Credit) for current year	387	(215)	–	–
TOTAL	641	(45)	–	–

No provision for Hong Kong profits tax has been made for the Fund as it is an integral part of the government. The provision for Hong Kong profits tax relates to the tax liabilities of the Fund's subsidiaries. For 2021, it is calculated at 16.5% (2020: 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.

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	
	2021	2020	2021	2020
Surplus/(Deficit) before taxation	80,208	150,277	(36,481)	93,712
Tax calculated at domestic tax rates in the respective countries	19,488	9,360	–	–
Tax effect of:				
– non-deductible expenses	846	1,381	–	–
– non-taxable income	(19,753)	(10,703)	–	–
– utilisation of tax losses previously not recognised	(29)	(22)	–	–
– (over-provision)/under-provision in prior years	(18)	8	–	–
– effect on deferred tax balances arising from change in tax rates	(82)	(135)	–	–
– others	189	66	–	–
Income tax charge/(credit)	641	(45)	–	–

(b) Tax (recoverable)/payable

	Note	Group		Fund	
		2021	2020	2021	2020
Tax recoverable	16	(24)	(21)	–	–
Tax payable	30	693	600	–	–
		669	579	–	–

(c) Deferred tax

	Note	Group		Fund	
		2021	2020	2021	2020
Deferred tax assets	16	(122)	(203)	–	–
Deferred tax liabilities	30	696	443	–	–
		574	240	–	–

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				
	Fair value changes on investment properties	Accelerated depreciation	Tax losses	Others	Net deferred tax liabilities
At 1 January 2020	481	36	(82)	(7)	428
Credited to the income and expenditure account	(91)	(3)	(119)	(2)	(215)
Exchange differences	27	–	–	–	27
At 31 December 2020	417	33	(201)	(9)	240
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

There was no significant unprovided deferred tax as at 31 December 2021 and 2020.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

7 CATEGORIES OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

	Group – 2021							
			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
	Total	Derivative financial instruments	income and expenditure account	comprehensive income	other	measured at amortised cost		
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.)

	Group – 2020					
	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	148,947	–	–	–	148,947	–
Placements with banks and other financial institutions	143,149	–	–	–	143,149	–
Financial assets measured at fair value through income and expenditure account	4,335,548	–	4,335,548	–	–	–
Financial assets measured at fair value through other comprehensive income	5,789	–	–	5,789	–	–
Derivative financial instruments	2,588	2,588	–	–	–	–
Debt securities measured at amortised cost	9,730	–	–	–	9,730	–
Loan portfolio	49,433	–	–	–	49,433	–
Others	45,129	–	–	–	45,129	–
FINANCIAL ASSETS	4,740,313	2,588	4,335,548	5,789	396,388	–
Certificates of Indebtedness	556,204	–	–	–	–	556,204
Government-issued currency notes and coins in circulation	12,844	–	–	–	–	12,844
Balance of the banking system	457,466	–	–	–	–	457,466
Placements by banks and other financial institutions	87,650	–	–	–	–	87,650
Placements by Fiscal Reserves	881,832	–	–	–	–	881,832
Placements by HKSAR Government funds and statutory bodies	342,471	–	–	–	–	342,471
Exchange Fund Bills and Notes issued	1,068,880	–	1,068,880	–	–	–
Derivative financial instruments	7,469	7,469	–	–	–	–
Bank loans	12,050	–	–	–	–	12,050
Other debt securities issued	62,587	–	–	–	–	62,587
Others	246,507	–	–	–	–	246,507
FINANCIAL LIABILITIES	3,735,960	7,469	1,068,880	–	–	2,659,611

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

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2020					
	Total	Derivative financial instruments	income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through amortised cost	Other financial liabilities
Cash and money at call	145,255	–	–	–	145,255	–
Placements with banks and other financial institutions	121,796	–	–	–	121,796	–
Financial assets measured at fair value through income and expenditure account	3,981,157	–	3,981,157	–	–	–
Financial assets measured at fair value through other comprehensive income	1,370	–	–	1,370	–	–
Derivative financial instruments	1,791	1,791	–	–	–	–
Others	43,138	–	–	–	43,138	–
FINANCIAL ASSETS	4,294,507	1,791	3,981,157	1,370	310,189	–
Certificates of Indebtedness	556,204	–	–	–	–	556,204
Government-issued currency notes and coins in circulation	12,844	–	–	–	–	12,844
Balance of the banking system	457,466	–	–	–	–	457,466
Placements by banks and other financial institutions	87,650	–	–	–	–	87,650
Placements by Fiscal Reserves	881,832	–	–	–	–	881,832
Placements by HKSAR Government funds and statutory bodies	342,471	–	–	–	–	342,471
Placements by subsidiaries	15,469	–	–	–	–	15,469
Exchange Fund Bills and Notes issued	1,068,880	–	1,068,880	–	–	–
Derivative financial instruments	7,023	7,023	–	–	–	–
Others	225,965	–	–	–	–	225,965
FINANCIAL LIABILITIES	3,655,804	7,023	1,068,880	–	–	2,579,901

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

8 CASH AND MONEY AT CALL

	Group		Fund	
	2021	2020	2021	2020
At amortised cost				
Balance with central banks	9,198	6,473	9,198	6,473
Balance with banks	176,269	142,474	170,031	138,782
TOTAL	185,467	148,947	179,229	145,255

9 PLACEMENTS WITH BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group		Fund	
	2021	2020	2021	2020
At amortised cost				
Placements in respect of reverse repurchase agreements:				
– with central banks	23,762	8,122	23,762	8,122
– with banks and other financial institutions	6,932	8,942	6,932	8,942
Other placements:				
– with central banks	–	31,015	–	31,015
– with banks	133,582	95,075	90,905	73,720
	164,276	143,154	121,599	121,799
Less: allowances for expected credit losses	(8)	(5)	(3)	(3)
TOTAL	164,268	143,149	121,596	121,796

Exchange Fund – Notes to the Financial Statements (continued)

(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	
	2021	2020	2021	2020
At fair value				
Debt securities				
Treasury bills and commercial paper				
Listed outside Hong Kong	–	1,179	–	1,179
Unlisted	1,175,456	975,159	1,175,456	975,159
Certificates of deposit				
Unlisted	180,789	194,020	180,789	194,020
Other debt securities				
Listed in Hong Kong	16,405	6,237	16,394	6,226
Listed outside Hong Kong	1,812,417	1,934,983	1,812,417	1,934,983
Unlisted	104,927	126,467	104,927	126,467
Total debt securities	3,289,994	3,238,045	3,289,983	3,238,034
Equity securities				
Listed in Hong Kong	183,189	207,118	183,189	206,864
Listed outside Hong Kong	403,313	339,697	401,446	337,852
Unlisted	173,573	207,259	160,393	198,407
Total equity securities	760,075	754,074	745,028	743,123
Investment funds				
Unlisted	442,827	343,429	–	–
TOTAL	4,492,896	4,335,548	4,035,011	3,981,157

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

11 FINANCIAL ASSETS MEASURED AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	Group		Fund	
	2021	2020	2021	2020
At fair value				
Debt securities				
Listed in Hong Kong	754	1,103	–	–
Listed outside Hong Kong	1,604	1,732	–	–
Unlisted	1,289	1,584	–	–
	3,647	4,419	–	–
Equity securities				
Unlisted	1,336	1,370	1,336	1,370
TOTAL	4,983	5,789	1,336	1,370

The Group's investment in unlisted equity securities as at 31 December 2021 represents a holding of 4,285 shares (2020: 4,285 shares) in the Bank for International Settlements. As at 31 December 2021 and 2020, 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			
	2021		2020		2021		2020	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Derivatives categorised as held for trading								
Interest rate derivatives								
Interest rate swap contracts	941	284	1,223	79	745	235	1,208	25
Interest rate futures contracts	1	1	–	–	1	1	–	–
Swaption contracts	–	–	1	–	–	–	1	–
Equity derivatives								
Equity index futures contracts	147	54	97	257	147	54	97	257
Total return swap contracts	19	15	–	–	19	15	–	–
Currency derivatives								
Forward foreign exchange contracts	2,523	1,376	276	6,781	2,523	1,135	276	6,669
Currency swap contracts	–	95	–	224	–	–	–	–
Bond derivatives								
Bond futures contracts	46	35	20	12	46	35	20	12
Commodity derivatives								
Commodity futures contracts	147	192	189	60	147	192	189	60
	3,824	2,052	1,806	7,413	3,628	1,667	1,791	7,023
Derivatives designated as hedging instruments in fair value hedges								
Interest rate derivatives								
Interest rate swap contracts	214	122	405	2	–	–	–	–
Currency derivatives								
Currency swap contracts	485	118	377	54	–	–	–	–
	699	240	782	56	–	–	–	–
Derivatives designated as hedging instruments in cash flow hedges								
Currency derivatives								
Currency swap contracts	73	–	–	–	–	–	–	–
TOTAL	4,596	2,292	2,588	7,469	3,628	1,667	1,791	7,023

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									
	2021					2020				
	1 year or less		5 years or less			1 year or less		5 years or less		
	Total	3 months or less	but over 3 months	but over 1 year	Over 5 years	Total	3 months or less	but over 3 months	but over 1 year	Over 5 years
Derivatives categorised as held for trading										
Interest rate derivatives										
Interest rate swap contracts	52,358	2,440	2,863	32,340	14,715	34,892	1,500	1,600	21,906	9,886
Interest rate futures contracts	13,300	566	4,607	8,127	–	–	–	–	–	–
Swaption contracts	–	–	–	–	–	312	192	120	–	–
Equity derivatives										
Equity index futures contracts	66,415	66,415	–	–	–	55,808	55,808	–	–	–
Total return swap contracts	2,339	–	2,339	–	–	–	–	–	–	–
Currency derivatives										
Forward foreign exchange contracts	224,622	222,583	836	1,203	–	274,288	271,041	1,405	1,842	–
Currency swap contracts	4,637	218	775	3,572	72	2,900	–	613	2,041	246
Bond derivatives										
Bond futures contracts	77,601	77,601	–	–	–	42,552	42,552	–	–	–
Commodity derivatives										
Commodity futures contracts	37,483	22,869	14,614	–	–	33,104	16,236	16,868	–	–
	478,755	392,692	26,034	45,242	14,787	443,856	387,329	20,606	25,789	10,132
Derivatives designated as hedging instruments in fair value hedges										
Interest rate derivatives										
Interest rate swap contracts	48,053	2,767	17,387	25,855	2,044	28,250	2,431	14,365	9,825	1,629
Currency derivatives										
Currency swap contracts	41,498	9,748	21,358	9,590	802	18,914	2,739	10,210	4,908	1,057
	89,551	12,515	38,745	35,445	2,846	47,164	5,170	24,575	14,733	2,686
Derivatives designated as hedging instruments in cash flow hedges										
Currency derivatives										
Currency swap contracts	3,385	387	–	2,998	–	269	269	–	–	–
TOTAL	571,691	405,594	64,779	83,685	17,633	491,289	392,768	45,181	40,522	12,818

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										
	2021					2020					
	1 year or less					1 year or less					
		3 months	but over	but over	Over	3 months	but over	but over	Over		
		Total	or less	3 months	1 year	5 years	Total	or less	3 months	1 year	5 years
Derivatives categorised as held for trading											
Interest rate derivatives											
Interest rate swap contracts	30,922	1,340	2,105	19,251	8,226	16,011	–	1,600	7,600	6,811	
Interest rate futures contracts	13,300	566	4,607	8,127	–	–	–	–	–	–	
Swaption contracts	–	–	–	–	–	312	192	120	–	–	
Equity derivatives											
Equity index futures contracts	66,415	66,415	–	–	–	55,808	55,808	–	–	–	
Total return swap contracts	2,339	–	2,339	–	–	–	–	–	–	–	
Currency derivatives											
Forward foreign exchange contracts	221,667	221,170	497	–	–	272,446	271,041	1,405	–	–	
Bond derivatives											
Bond futures contracts	77,601	77,601	–	–	–	42,552	42,552	–	–	–	
Commodity derivatives											
Commodity futures contracts	37,483	22,869	14,614	–	–	33,104	16,236	16,868	–	–	
TOTAL	449,727	389,961	24,162	27,378	8,226	420,233	385,829	19,993	7,600	6,811	

13 DEBT SECURITIES MEASURED AT AMORTISED COST

	Group		Fund	
	2021	2020	2021	2020
At amortised cost				
Debt securities				
Listed in Hong Kong	6,858	6,705	–	–
Listed outside Hong Kong	2,411	2,032	–	–
Unlisted	1,942	996	–	–
	11,211	9,733	–	–
Less: allowances for expected credit losses	(4)	(3)	–	–
TOTAL	11,207	9,730	–	–

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	
	2021	2020	2021	2020
At amortised cost				
Loans with special 100% guarantee under the SME Financing Guarantee Scheme ¹	71,063	36,085	–	–
Mortgage loans	3,623	4,093	–	–
Other loans	12,886	9,419	–	–
	87,572	49,597	–	–
Less: allowances for expected credit losses	(160)	(164)	–	–
TOTAL	87,412	49,433	–	–

¹ The Hong Kong Mortgage Corporation Limited (HKMC), 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 HKMC 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	
	2021	2020
At fair value		
Gold		
66,798 ounces (2020: 66,798 ounces)	948	979

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	
	2021	2020	2021	2020
Unsettled sales and redemption of securities	12,783	25,012	11,021	24,911
Interest and dividends receivable	10,502	10,674	9,751	10,234
Prepayments, receivables and other assets	6,295	8,834	4,174	7,610
Staff housing loans	197	259	197	259
Loan to the International Monetary Fund	87	164	87	164
Reinsurance assets	491	378	–	–
Tax recoverable	24	21	–	–
Deferred tax assets	122	203	–	–
TOTAL	30,501	45,545	25,230	43,178

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

17 INTERESTS IN SUBSIDIARIES

	Fund	
	2021	2020
Unlisted shares, at cost	9,962	7,462
Loans to subsidiaries	190,196	193,244
TOTAL	200,158	200,706

The following is a list of the principal subsidiaries which are wholly owned by the Fund (except for Hong Kong Note Printing Limited¹) as at 31 December 2021:

Name of company	Principal activities	Issued equity capital
The Hong Kong Mortgage Corporation Limited	Investment in mortgages and loans	HK\$9,500,000,000
HKMC Annuity Limited ²	Long term insurance	HK\$7,500,000,000
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
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.

Exchange Fund – Notes to the Financial Statements (continued)

(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 (2020: 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 (2020: Nil) to The Hong Kong Mortgage Corporation Limited was made under this arrangement and the outstanding commitment as at 31 December 2021 was HK\$17.5 billion (2020: HK\$20 billion).

The Fund has provided The Hong Kong Mortgage Corporation Limited with a revolving credit facility of HK\$80 billion (2020: HK\$80 billion) at prevailing market interest rates. As at 31 December 2021, there was no outstanding balance due from The Hong Kong Mortgage Corporation Limited under this facility (2020: Nil).

The Fund has committed to provide a funding support up to HK\$300 million (2020: HK\$300 million), in the form of callable capital of HK\$150 million and a non-revolving callable loan facility of HK\$150 million, to Hong Kong Academy of Finance Limited for the purpose of financing the company's operations. The loan facility, which will expire in June 2022, is unsecured, interest-free and repayable on demand. Capital injections of HK\$80 million and HK\$70 million were made in 2019 and 2020 respectively, and a loan of HK\$60 million (2020: Nil) was drawn during the year. The outstanding commitment of the loan facility was HK\$90 million as at 31 December 2021 (2020: HK\$150 million).

Loans to subsidiaries which principally hold investments including properties are unsecured, interest-free and repayable on demand.

Placements by subsidiaries are disclosed in note 26.

The financial statements of the principal 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 14% (2020: 11%) and 4% (2020: 3%) of the Group's total assets and total liabilities, respectively.

18 INTERESTS IN ASSOCIATES AND JOINT VENTURES

	Group		Fund	
	2021	2020	2021	2020
Associates				
Share of net assets ¹	3,266	2,011	–	–
Due from an associate	54	–	54	–
	3,320	2,011	54	–
Joint ventures²				
Share of net assets	14,718	11,589	–	–
Due from joint ventures	29,507	29,118	–	–
	44,225	40,707	–	–
TOTAL	47,545	42,718	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 (2020: 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 four associates. One associate, incorporated in Hong Kong, provides interbank clearing services. The other three associates, incorporated outside Hong Kong, hold overseas investment properties and investment funds. The Group holds equity interests in these associates ranging from 25% to 50%.

Aggregate information of the Group's associates, which are not individually material, is summarised below:

	Group	
	2021	2020
Share of profit/(loss) for the year	340	(41)
Share of other comprehensive (loss)/income	(30)	53
Share of total comprehensive income	310	12
Aggregate carrying amount of interests in associates	3,320	2,011

As at 31 December 2021, the Group has no outstanding investment commitments to associates (2020: Nil).

The Fund has provided an associate with a non-revolving credit facility of HK\$116 million (2020: Nil) 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\$54 million (2020: Nil) was drawn during the year and the outstanding commitment of the loan facility was HK\$62 million as at 31 December 2021 (2020: Nil).

18.2 Interests in joint ventures

The Group holds investments in 21 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 2021, the aggregate interest in these joint ventures amounted to 0.87% (2020: 0.85%) of the Group's total assets.

Aggregate information of the Group's joint ventures, which are not individually material, is summarised below:

	Group	
	2021	2020
Share of profit/(loss) for the year	3,472	(3,170)
Share of other comprehensive (loss)/income	(505)	1,042
Share of total comprehensive income/(loss)	2,967	(2,128)
Aggregate carrying amount of interests in joint ventures	44,225	40,707

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	
	2021	2020
Commitments to contribute funds	3,008	2,988

During the year, a joint venture held by the Group paid off the entire equity interest held by a venturer. Following the exit of the venturer, the Group held the entire equity share of the entity and reclassified the entity as a subsidiary. The transaction was accounted for as an asset acquisition rather than a business combination. At the date of the deemed acquisition, the major assets and liabilities of the entity included investment properties with fair value of HK\$4,198 million, cash of HK\$64 million and bank loans of HK\$2,975 million. The cash of HK\$64 million acquired was included as part of the net cash inflows from investing activities in the statement of cash flows.

19 INVESTMENT PROPERTIES

	Group		Fund	
	2021	2020	2021	2020
At fair value				
At 1 January	23,135	22,481	–	–
Additions	495	105	–	–
Additions through deemed acquisition of a subsidiary (note 18.2)	4,198	–	–	–
Change in fair value on revaluation	(123)	(356)	–	–
Exchange differences	(616)	905	–	–
At 31 December	27,089	23,135	–	–

The carrying amount of the Group's investment properties is analysed as follows:

	Group		Fund	
	2021	2020	2021	2020
Held outside Hong Kong				
on freehold	13,045	9,426	–	–
on long-term lease (over 50 years)	14,044	13,709	–	–
TOTAL	27,089	23,135	–	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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	
	2021	2020	2021	2020
Gross rental income	1,281	1,223	–	–
Direct expenses	(204)	(155)	–	–
Net rental income	1,077	1,068	–	–

The Group's total future minimum lease payments receivable under non-cancellable operating leases are as follows:

	Group		Fund	
	2021	2020	2021	2020
Within one year	1,143	1,027	–	–
After one year but not later than five years	3,077	2,808	–	–
After five years but not later than ten years	611	876	–	–
After ten years but not later than fifteen years	127	189	–	–
TOTAL	4,958	4,900	–	–

As at 31 December 2021, investment properties with a fair value of HK\$26,398 million (2020: HK\$22,731 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 4.25% to 7.25% (2020: 4.10% to 5.00%), equivalent yields which ranged from 4.06% to 5.62% (2020: 4.10% to 5.36%) and terminal capitalisation rates which ranged from 2.90% to 6.20% (2020: 3.10% to 3.75%). Significant increases or decreases in any of those inputs in isolation would result in significantly lower or higher fair value measurements, respectively.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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\$123 million (2020: HK\$356 million).

20 PROPERTY, PLANT AND EQUIPMENT

	Group				
	Owned assets		Right-of-use assets		
	Computer software	licences and system	Plant and development costs	Premises	Total
Premises					
Cost					
At 1 January 2020	3,854	1,564	505	430	6,353
Additions	–	126	30	400	556
Disposals/write-offs	–	(7)	–	(92)	(99)
At 31 December 2020	3,854	1,683	535	738	6,810
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
Accumulated depreciation					
At 1 January 2020	1,426	1,152	394	120	3,092
Charge for the year	89	125	26	136	376
Written back on disposal/write-offs	–	(7)	–	(92)	(99)
At 31 December 2020	1,515	1,270	420	164	3,369
At 1 January 2021	1,515	1,270	420	164	3,369
Charge for the year	88	135	27	127	377
Written back on disposal/write-offs	–	(32)	–	(21)	(53)
At 31 December 2021	1,603	1,373	447	270	3,693
Net book value					
At 31 December 2021	2,251	476	166	460	3,353
At 31 December 2020	2,339	413	115	574	3,441

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 2020	3,843	713	505	323	5,384
Additions	–	69	30	203	302
At 31 December 2020	3,843	782	535	526	5,686
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
Accumulated depreciation					
At 1 January 2020	1,417	543	394	65	2,419
Charge for the year	88	62	26	75	251
At 31 December 2020	1,505	605	420	140	2,670
At 1 January 2021	1,505	605	420	140	2,670
Charge for the year	87	69	27	77	260
Written back on disposal/write-offs	–	(1)	–	(4)	(5)
At 31 December 2021	1,592	673	447	213	2,925
Net book value					
At 31 December 2021	2,251	234	166	314	2,965
At 31 December 2020	2,338	177	115	386	3,016

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	
	2021	2020	2021	2020
In Hong Kong				
Leasehold land and the building situated thereon (leasehold between 10 and 50 years)	2,230	2,318	2,230	2,317
Outside Hong Kong				
Freehold land and the building situated thereon	21	21	21	21
TOTAL	2,251	2,339	2,251	2,338

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	
	2021	2020	2021	2020
Carrying amount	592,364	556,204	13,126	12,844
Reconciliation with face value:				
Hong Kong dollar face value	592,645	559,515	13,132	12,920
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\$75,980 million	US\$71,733 million	US\$1,684 million	US\$1,656 million
Market exchange rate for translation into Hong Kong dollars	US\$1=HK\$7.7963	US\$1=HK\$7.75385	US\$1=HK\$7.7963	US\$1=HK\$7.75385
Carrying amount	592,364	556,204	13,126	12,844

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	
	2021	2020
At amortised cost		
Placements by banks	–	87,650
TOTAL	–	87,650

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

24 PLACEMENTS BY FISCAL RESERVES

	Group and Fund	
	2021	2020
Placements by Operating and Capital Reserves		
(i) with interest payable at a fixed rate determined annually		
General Revenue Account	392,933	402,880
Capital Works Reserve Fund	239,948	175,609
Civil Service Pension Reserve Fund	48,813	42,770
Innovation and Technology Fund	27,328	24,570
Lotteries Fund	22,481	21,350
Capital Investment Fund	21,257	5,772
Loan Fund	2,785	3,843
Disaster Relief Fund	88	42
	755,633	676,836
(ii) with interest payable at market-based rates		
General Revenue Account	3	5
	755,636	676,841
Placements by Future Fund with interest payable at a composite rate determined annually		
Land Fund	212,867	200,191
General Revenue Account	4,800	4,800
	217,667	204,991
TOTAL	973,303	881,832

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 every January. 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 4.7% per annum for 2021 (2020: 3.7%).

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 2021 was 17.8% (2020: 12.3%). During the year, ad-hoc transfers from the Land Fund to the placements by Future Fund and withdrawal of placements by the Future Fund as directed by the Financial Secretary amounted to HK\$12,677 million (2020: Nil) and HK\$1 million (2020: HK\$19,539 million) respectively. Placements by Future Fund, together with the interest thereon (note 30), are repayable on 31 December 2025 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	
	2021	2020
Placements with interest payable at a fixed rate¹ determined annually		
Bond Fund	208,067	150,846
Community Care Fund	6,060	9,806
Elite Athletes Development Fund	10,684	11,183
Employees Retraining Board	11,578	11,059
Environment and Conservation Fund	6,055	5,803
Hong Kong Housing Authority	34,887	38,151
Hospital Authority	16,263	15,866
Language Fund	6,732	6,429
Research Endowment Fund	50,914	49,990
Samaritan Fund	6,749	6,446
Trading Funds	10,048	9,597
West Kowloon Cultural District Authority	8,306	8,902
Other funds ²	13,719	13,311
	390,062	337,389
Placements with interest payable at market-based rates		
Deposit Protection Scheme Fund	4,187	5,082
TOTAL	394,249	342,471

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 4.7% per annum for 2021 (2020: 3.7%).

² This is a collective placement by 15 HKSAR Government funds (2020: 15 HKSAR Government funds).

26 PLACEMENTS BY SUBSIDIARIES

	Fund	
	2021	2020
Placements by:		
HKMC Annuity Limited ¹	18,251	12,297
HKMC Insurance Limited ²	3,321	3,172
The Hong Kong Mortgage Corporation Limited ³	4,665	–
TOTAL	26,237	15,469

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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

27 EXCHANGE FUND BILLS AND NOTES ISSUED

	Group and Fund	
	2021	2020
At fair value		
Exchange Fund Bills and Notes issued		
Exchange Fund Bills	1,124,908	1,043,062
Exchange Fund Notes	23,861	26,118
	1,148,769	1,069,180
Exchange Fund Bills held		
	(200)	(300)
TOTAL	1,148,569	1,068,880

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			
	2021		2020	
	Exchange Fund Bills	Exchange Fund Notes	Exchange Fund Bills	Exchange Fund Notes
Issued by the Currency Board Operations segment				
Nominal value at 1 January	1,043,130	25,000	1,130,094	26,600
Issuance	3,399,074	4,800	3,313,257	4,800
Redemption	(3,316,987)	(6,400)	(3,400,221)	(6,400)
Nominal value at 31 December	1,125,217	23,400	1,043,130	25,000
Long positions held by the Financial Stability and Other Activities segment				
Nominal value at 31 December	(200)	–	(300)	–
Total nominal value	1,125,017	23,400	1,042,830	25,000
Carrying amount, at fair value	1,124,708	23,861	1,042,762	26,118
Difference	309	(461)	68	(1,118)

The fair value changes of EFBN issued are attributable to changes in benchmark interest rates.

28 BANK LOANS

	Group		Fund	
	2021	2020	2021	2020
At amortised cost				
Bank loans repayable:				
Within one year	24	–	–	–
After one year but not later than two years	48	–	–	–
After two years but not later than five years	8,798	1,685	–	–
After five years but not later than ten years	7,260	10,365	–	–
TOTAL	16,130	12,050	–	–

As at 31 December 2021, the banking facilities of the Group were secured by mortgage over the investment properties with a fair value of HK\$26,398 million (2020: HK\$22,731 million) (note 19).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

29 OTHER DEBT SECURITIES ISSUED

	Group		Fund	
	2021	2020	2021	2020
Debt securities issued, carried at amortised cost	25,609	18,158	–	–
Debt securities issued, designated as hedged items under fair value hedge	87,272	44,158	–	–
Debt securities issued, designated as hedged items under cash flow hedge	3,453	271	–	–
TOTAL	116,334	62,587	–	–

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	
	2021	2020	2021	2020
Total debt securities issued				
Nominal value at 1 January	61,953	40,585	–	–
Issuance	109,470	58,372	–	–
Redemption	(55,533)	(37,027)	–	–
Exchange differences	70	23	–	–
Nominal value at 31 December	115,960	61,953	–	–
Carrying amount	116,334	62,587	–	–
Difference	(374)	(634)	–	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

30 OTHER LIABILITIES

	Group		Fund	
	2021	2020	2021	2020
Accrued interest on placements by Fiscal Reserves (Future Fund) ¹	169,253	110,688	169,253	110,688
Housing Reserve ²	23,079	65,931	23,079	65,931
Accrued interest on placements by a subsidiary	–	–	2,396	868
Other interest payable	849	523	93	115
Unsettled purchases of securities	33,882	46,598	33,882	46,598
Accrued charges and other liabilities	28,516	11,089	7,301	1,502
Lease liabilities	887	990	337	409
Insurance liabilities	16,784	11,187	–	–
Tax payable	693	600	–	–
Deferred tax liabilities	696	443	–	–
Provision for expected credit losses on loan commitments	23	41	–	–
TOTAL	274,662	248,090	236,341	226,111

¹ In accordance with the directive made by the Financial Secretary in December 2015, 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 2025) unless otherwise directed by the Financial Secretary according to the terms of the placements. As announced by the Financial Secretary in his 2021-22 Budget Speech in February 2021, starting from the financial year ending 31 March 2022, accrued interest on placements by Future Fund will be brought back to the Government's accounts on a progressive basis.

In February 2022, part of the accrued interest on placements by Future Fund amounting to HK\$25,000 million was paid and brought back to the Fiscal Reserves.

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. The interest accrued on the Housing Reserve for 2021 was HK\$2,199 million (2020: HK\$2,359 million). 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. During the year, part of the Housing Reserve amounting to HK\$45,051 million (2020: Nil) was paid and brought back to the Fiscal Reserves.

Exchange Fund – Notes to the Financial Statements (continued)

(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	
	2021	2020	2021	2020
Cash and money at call	185,467	148,947	179,229	145,255
Placements with banks and other financial institutions	125,550	134,355	114,321	120,527
Treasury bills and commercial paper	59,936	5,196	59,936	5,196
TOTAL	370,953	288,498	353,486	270,978

(b) Reconciliation of cash and cash equivalents

	Note	Group		Fund	
		2021	2020	2021	2020
Amounts shown in the balance sheet					
Cash and money at call	8	185,467	148,947	179,229	145,255
Placements with banks and other financial institutions	9	164,276	143,154	121,599	121,799
Treasury bills and commercial paper	10	1,175,456	976,338	1,175,456	976,338
Certificates of deposit	10	180,789	194,020	180,789	194,020
		1,705,988	1,462,459	1,657,073	1,437,412
Less: Amounts with original maturity beyond 3 months		(1,335,035)	(1,173,961)	(1,303,587)	(1,166,434)
Cash and cash equivalents in the statement of cash flows		370,953	288,498	353,486	270,978

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	
	Other debt securities		Lease liabilities	Lease liabilities
	Bank loans	issued		
	(note 28)	(note 29)	(note 30)	(note 30)
At 1 January 2020	11,348	40,370	717	278
Changes from financing cash flows				
Bank loans raised	183	–	–	–
Proceeds from issue of other debt securities	–	58,244	–	–
Redemption of other debt securities issued	–	(37,027)	–	–
Principal portion of lease payments	–	–	(122)	(72)
Non-cash changes				
Increase in lease liabilities relating to new leases	–	–	383	203
Amortisation	15	127	17	7
Exchange differences	504	22	12	–
Change in fair value	–	851	–	–
Other changes				
Interest portion of lease payments	–	–	(17)	(7)
At 31 December 2020	12,050	62,587	990	409
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 (note 18.2)	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

The total cash outflows for leases of the Group and the Fund in 2021 were HK\$143 million (2020: HK\$158 million) and HK\$81 million (2020: HK\$79 million) respectively.

Exchange Fund – Notes to the Financial Statements (continued)

(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	
	2021	2020	2021	2020	2021	2020	2021	2020
Income								
Interest and dividend income	5,658	14,277	35,194	31,559	1,229	1,610	42,081	47,446
Investment gains	1,624	19,527	149,642	182,015	1,648	3,334	152,914	204,876
Other income	–	–	128	52	3,491	2,901	3,619	2,953
	7,282	33,804	184,964	213,626	6,368	7,845	198,614	255,275
Expenditure								
Interest expense	441	8,974	110,431	81,894	623	688	111,495	91,556
Other expenses	1,798	1,544	2,150	2,174	6,963	6,513	10,911	10,231
	2,239	10,518	112,581	84,068	7,586	7,201	122,406	101,787
Surplus/(Deficit) before share of profit/(loss) of associates and joint ventures	5,043	23,286	72,383	129,558	(1,218)	644	76,208	153,488
Share of profit/(loss) of associates and joint ventures, net of tax	–	–	3,773	(3,248)	39	37	3,812	(3,211)
Gain on disposal of a joint venture	–	–	188	–	–	–	188	–
Surplus/(Deficit) before taxation	5,043	23,286	76,344	126,310	(1,179)	681	80,208	150,277

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group									
	Currency Board		Reserves		Financial Stability and Other Activities		Re-allocation (notes (b) & (c))		Total	
	Operations (note (a))		Management		2021		2020		2021	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
Assets										
Backing Assets										
Investment in designated										
US dollar assets	2,347,389	2,302,796	-	-	-	-	-	-	2,347,389	2,302,796
Interest receivable on designated										
US dollar assets	2,412	3,509	-	-	-	-	-	-	2,412	3,509
Other investments	-	-	2,473,375	2,320,522	201,251	136,410	(200)	(300)	2,674,426	2,456,632
Other assets	-	-	27,020	40,444	8,415	6,427	603	1,194	36,038	48,065
TOTAL ASSETS	2,349,801	2,306,305	2,500,395	2,360,966	209,666	142,837	403	894	5,060,265	4,811,002
Liabilities										
Monetary Base										
Certificates of Indebtedness	592,364	556,204	-	-	-	-	-	-	592,364	556,204
Government-issued currency notes										
and coins in circulation	13,126	12,844	-	-	-	-	-	-	13,126	12,844
Balance of the banking system	377,516	457,466	-	-	-	-	-	-	377,516	457,466
Exchange Fund Bills and Notes issued	1,148,769	1,069,180	-	-	-	-	(200)	(300)	1,148,569	1,068,880
Interest payable on Exchange										
Fund Notes	92	110	-	-	-	-	-	-	92	110
Net accounts (receivable)/payable	(603)	(1,194)	-	-	-	-	603	1,194	-	-
Placements by banks and other										
financial institutions	-	-	-	87,650	-	-	-	-	-	87,650
Placements by Fiscal Reserves	-	-	973,303	881,832	-	-	-	-	973,303	881,832
Placements by HKSAR Government										
funds and statutory bodies	-	-	390,062	337,389	4,187	5,082	-	-	394,249	342,471
Bank loans	-	-	16,130	12,050	-	-	-	-	16,130	12,050
Other debt securities issued	-	-	681	678	115,653	61,909	-	-	116,334	62,587
Other liabilities	-	-	236,790	233,061	40,072	22,388	-	-	276,862	255,449
TOTAL LIABILITIES	2,131,264	2,094,610	1,616,966	1,552,660	159,912	89,379	403	894	3,908,545	3,737,543

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.

In 2021 and 2020, the Backing Ratio did not reach the above trigger points. It stood at 110.24% as at 31 December 2021 (2020: 109.93%).

(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" to offset corresponding investments in the Backing Assets. As at 31 December 2021, there were no "other liabilities" (2020: Nil) deducted from the Backing Assets; 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 of HK\$27 million (2020: HK\$29 million) and unrealised gains of HK\$576 million (2020: HK\$1,165 million) on these interest rate swaps are included in "net accounts (receivable)/payable" to reduce the Monetary Base. As at 31 December 2021, deductions from the Monetary Base comprised "other assets" of HK\$603 million (2020: HK\$1,194 million).

(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.

Exchange Fund – Notes to the Financial Statements (continued)

(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.

	Note	Group		Fund	
		2021	2020	2021	2020
Assets pledged					
Cash and money at call		3,084	76	3,084	76
Financial assets measured at fair value through income and expenditure account		8,349	8,800	8,349	8,800
Equity interests in associates		1,826	1,739	–	–
Equity interests in joint ventures		3,029	–	–	–
Investment properties	19	26,398	22,731	–	–
Secured liabilities					
Commodity futures contracts, at fair value		45	–	45	–
Equity index futures contracts, at fair value		–	160	–	160
Bank loans	28	16,130	12,050	–	–
Other debt securities issued		681	678	–	–

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	
	2021	2020	2021	2020
Contracted for	33	13	30	6
Authorised but not yet contracted for	1,417	1,477	1,342	1,356
TOTAL	1,450	1,490	1,372	1,362

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 2021, the Fund had an undertaking under the NAB to lend foreign currencies to the IMF up to HK\$7,433 million equivalent (2020: HK\$3,809 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\$87 million equivalent (2020: HK\$164 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 (2020: 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 2021, there was no outstanding balance due from the HKDPB under this facility (2020: 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\$44,829 million equivalent (2020: HK\$44,585 million equivalent). The arrangement allows each organisation to enhance the liquidity of its foreign reserve portfolio with minimal additional risk. As at 31 December 2021, there was no outstanding transaction with any central bank under this arrangement (2020: 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 (2020: US\$240 billion). Hong Kong, through the HKMA, participates in the CMIM and has undertaken to commit up to US\$8.4 billion (2020: US\$8.4 billion) out of the Fund. Hong Kong has the right to request liquidity support up to US\$8.4 billion (2020: US\$6.3 billion) from the CMIM in case of emergency. Up to 31 December 2021, there had been no request to activate the CMIM (2020: Nil).

(f) Bilateral swap agreement

The People's Bank of China and the HKMA renewed a bilateral currency swap agreement in November 2020 for a term of five years, with a maximum size of RMB500 billion/HK\$590 billion. The arrangement helps facilitate the development of offshore renminbi business in Hong Kong. As at 31 December 2021, there was no currency swap activated under this arrangement (2020: Nil).

(g) Investment commitments

The Group's subsidiaries with principal activities of holding investments, including properties, had outstanding investment commitment of HK\$232,215 million equivalent as at 31 December 2021 (2020: HK\$232,512 million equivalent).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(h) Other commitments

A subsidiary of the Group, The Hong Kong Mortgage Corporation Limited, had outstanding undrawn loan commitments of HK\$2,847 million as at 31 December 2021 (2020: HK\$2,028 million).

35 CONTINGENT LIABILITIES

(a) Uncalled portion of investment in the Bank for International Settlements

As at 31 December 2021, the Fund had a contingent liability of up to 16.1 million SDRs or HK\$176 million equivalent (2020: 16.1 million SDRs or HK\$180 million equivalent), in respect of the uncalled portion of its 4,285 shares (2020: 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, Japanese yen and pound sterling. As at 31 December 2021, SDR 1 was valued at US\$1.40203 (2020: US\$1.44498).

(b) Financial guarantees

The Group has provided guarantees in respect of bank loans granted to joint ventures. The maximum liability as at 31 December 2021 was HK\$1,024 million equivalent (2020: HK\$1,583 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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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:

	2021	2020
Asset type		
Bonds	73%	73%
Equities and related investments	27%	27%
	100%	100%
Currency		
US dollar and Hong Kong dollar	84%	88%
Others ¹	16%	12%
	100%	100%

¹ Other currencies included mainly euro, renminbi, pound sterling and Japanese 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 country 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) Country risk

Country 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 the debtors in the country to foreign creditors. Under the existing framework, country limits are established to control the Fund's overall credit risk exposures to the countries 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:

	Note	Group		Fund	
		2021	2020	2021	2020
Risk in force – mortgage insurance	37.6	88,917	54,543	–	–
Risk in force – other guarantees and insurance	37.6	18,661	15,020	–	–
Loan commitments, guarantees and other credit related commitments		244,462	239,115	317,815	313,513
TOTAL		352,040	308,678	317,815	313,513

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	
	2021	2020	2021	2020
Credit rating¹				
AA- to AA+	72,274	61,755	65,267	61,560
A- to A+	78,889	42,996	48,551	25,362
Lower than A- or un-rated ²	13,113	38,403	7,781	34,877
Gross carrying amount	164,276	143,154	121,599	121,799
Less: allowances for expected credit losses	(8)	(5)	(3)	(3)
Carrying amount	164,268	143,149	121,596	121,796

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 2020	4	3
Increase in loss allowances recognised in the income and expenditure account	1	–
At 31 December 2020	5	3
At 1 January 2021	5	3
Increase in loss allowances recognised in the income and expenditure account	3	–
At 31 December 2021	8	3

(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 2021, approximately 64% (2020: 69%) 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	
	2021	2020	2021	2020
Credit rating¹				
Debt securities measured at fair value through income and expenditure account				
AAA	493,424	464,536	493,424	464,536
AA- to AA+	1,624,181	1,763,112	1,624,181	1,763,112
A- to A+	543,022	450,126	543,022	450,126
Lower than A- or un-rated ²	629,367	560,271	629,356	560,260
TOTAL	3,289,994	3,238,045	3,289,983	3,238,034
Debt securities measured at fair value through other comprehensive income				
AAA	138	–	–	–
AA- to AA+	2,458	3,022	–	–
A- to A+	1,051	1,397	–	–
TOTAL	3,647	4,419	–	–

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	
	2021	2020
Credit rating¹		
AAA	776	77
AA- to AA+	2,170	1,169
A- to A+	8,265	8,487
Gross carrying amount	11,211	9,733
Less: allowances for expected credit losses	(4)	(3)
Carrying amount	11,207	9,730

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 2021 and 2020. The movements in loss allowances for debt securities measured at amortised cost during the year are as follows:

	Group	
	2021	2020
At 1 January	3	1
Increase in loss allowances recognised in the income and expenditure account	1	2
At 31 December	4	3

(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 SFSGS 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 – 2021			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating¹				
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

	Group – 2020			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating¹				
BBB- to BBB+	1,236	–	–	1,236
BB- to BB+	1,531	–	–	1,531
Lower than BB–	3,118	272	296	3,686
Gross carrying amount	5,885	272	296	6,453
Less: allowances for expected credit losses	(35)	(23)	(103)	(161)
	5,850	249	193	6,292
Loan portfolio with internal credit rating				
Gross carrying amount	7,046	9	4	7,059
Less: allowances for expected credit losses	(2)	–	(1)	(3)
	7,044	9	3	7,056
TOTAL	12,894	258	196	13,348

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 2020	13	–	76	89
Increase in loss allowances for net new lending	23	7	3	33
Increase in loss allowances for change in credit risk	2	13	25	40
Transfers into Stage 2	(1)	1	–	–
Exchange differences	–	2	–	2
At 31 December 2020	37	23	104	164
At 1 January 2021	37	23	104	164
Increase/(Decrease) in loss allowances for net new lending	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

As at 31 December 2021, there was no repossessed asset obtained (2020: Nil).

(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 2020	18	–	–	18
Increase in provision for expected credit losses recognised in the income and expenditure account	9	10	2	21
Transfers into Stage 2	(1)	1	–	–
Exchange differences	–	2	–	2
At 31 December 2020	26	13	2	41
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

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	
	2021	2020	2021	2020
Governments and government agencies	2,344,877	2,406,068	2,270,949	2,368,487
Supra-nationals	239,712	194,355	239,331	194,053
States, provinces and public-sector entities	221,806	180,898	300,542	260,590
Financial institutions	530,555	457,947	471,913	424,431
Others ¹	791,871	711,022	844,954	809,213
TOTAL	4,128,821	3,950,290	4,127,689	4,056,774

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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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 HKMA has put in place a cap to guide the pace of diversification into the Long-Term Growth Portfolio since its inception. The cap for the market value of investments under the Long-Term Growth Portfolio was set at the aggregate of one-third of the accumulated surplus of the Fund, and the portion of the placements by Future Fund and subsidiaries of the Fund linked to the Long-Term Growth Portfolio. As the Long-Term Growth Portfolio becomes increasingly mature in investment scale and asset diversity, starting from 2022, its target asset allocation is determined concurrently with that of other asset classes, subject to prudent risk management principles. Accordingly, the target asset allocation of the Long-Term Growth Portfolio has replaced the market value cap for managing the size of the Long-Term Growth Portfolio.

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 – 2021							Non-interest-bearing financial instruments	
	Repricing period of interest-bearing financial instruments								
	1 month or less	3 months but over 1 month	1 year but over 3 months	5 years but over 1 year	10 years but over 5 years	Over 10 years	Total		
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.)

	Group – 2020						Non-interest-bearing financial instruments	
	Repricing period of interest-bearing financial instruments							
	1 month or less	3 months but over 1 month	1 year but over 3 months	5 years but over 1 year	10 years but over 5 years	Over 10 years		
Assets								
Cash and money at call	148,261	–	–	–	–	–	148,261 686	
Placements with banks and other financial institutions	129,420	11,476	2,234	–	–	–	143,130 19	
Financial assets measured at fair value through income and expenditure account	306,099	352,624	1,140,785	1,008,757	264,581	154,640	3,227,486 1,108,062	
Financial assets measured at fair value through other comprehensive income	544	2,836	303	410	326	–	4,419 1,370	
Debt securities measured at amortised cost	911	23	387	3,317	5,092	–	9,730 –	
Loan portfolio	41,901	2,263	5,137	7	125	–	49,433 –	
Interest-bearing assets	627,136	369,222	1,148,846	1,012,491	270,124	154,640	3,582,459	
Liabilities								
Placements by banks and other financial institutions	82,650	5,000	–	–	–	–	87,650 –	
Placements by Fiscal Reserves with interest payable at market-based rates ¹	5	–	–	–	–	–	5 –	
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	5,082	–	–	–	–	–	5,082 –	
Exchange Fund Bills and Notes issued	279,369	535,634	234,213	14,339	5,325	–	1,068,880 –	
Bank loans	5,738	–	–	–	6,312	–	12,050 –	
Other debt securities issued	7,152	12,012	25,856	12,043	2,725	2,799	62,587 –	
Interest-bearing liabilities	379,996	552,646	260,069	26,382	14,362	2,799	1,236,254	
Net interest-bearing assets/(liabilities)	247,140	(183,424)	888,777	986,109	255,762	151,841	2,346,205	
Interest rate derivatives (net position, notional amounts)	4,484	(24,830)	11,111	3,688	5,670	(5)	118	
Interest rate sensitivity gap	251,624	(208,254)	899,888	989,797	261,432	151,836	2,346,323	

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 2020, such placements amounted to HK\$1,219,216 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund - 2021							Non-interest-bearing financial instruments	
	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		
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.)

	Fund – 2020 Repricing period of interest-bearing financial instruments						Non-interest-bearing financial instruments	
	1 month or less	3 months or less but over 1 month	1 year but over 3 months	5 years but over 1 year	10 years but over 5 years	Over 10 years	Total	
Assets								
Cash and money at call	144,968	–	–	–	–	–	144,968	287
Placements with banks and other financial institutions	121,021	775	–	–	–	–	121,796	–
Financial assets measured at fair value through income and expenditure account	306,099	352,624	1,140,785	1,008,757	264,581	154,640	3,227,486	753,671
Interest-bearing assets	572,088	353,399	1,140,785	1,008,757	264,581	154,640	3,494,250	
Liabilities								
Placements by banks and other financial institutions	82,650	5,000	–	–	–	–	87,650	–
Placements by Fiscal Reserves with interest payable at market-based rates ¹	5	–	–	–	–	–	5	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	5,082	–	–	–	–	–	5,082	–
Exchange Fund Bills and Notes issued	279,369	535,634	234,213	14,339	5,325	–	1,068,880	–
Interest-bearing liabilities	367,106	540,634	234,213	14,339	5,325	–	1,161,617	
Net interest-bearing assets/(liabilities)	204,982	(187,235)	906,572	994,418	259,256	154,640	2,332,633	
Interest rate derivatives (net position, notional amounts)	(618)	(13,813)	1,600	7,600	5,236	(5)	–	
Interest rate sensitivity gap	204,364	(201,048)	908,172	1,002,018	264,492	154,635	2,332,633	

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 2020, such placements amounted to HK\$1,234,685 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			
	2021		2020	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	316.6	3,203.6	276.6	3,082.9
US dollar	4,071.5	657.3	4,014.1	627.5
	4,388.1	3,860.9	4,290.7	3,710.4
Others ¹	672.2	47.6	520.3	27.1
TOTAL	5,060.3	3,908.5	4,811.0	3,737.5

	Fund			
	2021		2020	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	202.3	3,121.9	221.0	3,033.0
US dollar	3,790.2	640.0	3,829.1	616.1
	3,992.5	3,761.9	4,050.1	3,649.1
Others ¹	577.7	1.5	449.1	6.9
TOTAL	4,570.2	3,763.4	4,499.2	3,656.0

¹ Other currencies included mainly euro, renminbi, pound sterling and Japanese yen.

(c) Equity price risk

As at 31 December 2021 and 2020, 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 Value-at-Risk 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	
	2021	2020
Value-at-Risk		
At 31 December ¹	40,177	43,255
During the year		
Average	43,508	61,579
Maximum	51,572	108,318
Minimum	36,518	31,121

¹ The amount represented 0.9% of the Fund's investments which were subject to VaR measurement as at 31 December 2021 (2020: 1.0%).

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 – 2021 Remaining maturity							Total	
	1 month or less	3 months or less	1 year or less	5 years or less	10 years or less	Over 10 years			
		but over 1 month	but over 3 months	but over 1 year	but over 5 years				
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.)

	Group – 2020 Remaining maturity						Total
	1 month or less	3 months or less	1 year but over 1 month	5 years but over 3 months	10 years but over 1 year	Over 5 years 10 years	
Non-derivative cash outflows							
Certificates of Indebtedness	556,204	–	–	–	–	–	556,204
Government-issued currency notes and coins in circulation	12,844	–	–	–	–	–	12,844
Balance of the banking system	457,466	–	–	–	–	–	457,466
Placements by banks and other financial institutions	82,650	5,000	–	–	–	–	87,650
Placements by Fiscal Reserves	676,841	–	–	204,991	–	–	881,832
Placements by HKSAR Government funds and statutory bodies	185,869	15,000	24,000	91,272	26,330	–	342,471
Exchange Fund Bills and Notes issued	279,371	535,797	234,449	14,626	5,019	–	1,069,262
Bank loans	59	12	211	2,808	10,691	–	13,781
Other debt securities issued	6,417	8,529	27,276	16,139	3,078	3,916	65,355
Lease liabilities	11	25	92	456	116	2,037	2,737
Other liabilities (excluding lease liabilities)	117,183	16,985	35	110,798	–	–	245,001
Loan commitments, guarantees and other credit related commitments	239,115	–	–	–	–	–	239,115
TOTAL	2,614,030	581,348	286,063	441,090	45,234	5,953	3,973,718
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	331	4	(5)	123	13	–	466
– on gross basis							
Total outflows	64,550	190,874	12,561	7,162	1,375	–	276,522
Total inflows	(63,238)	(185,840)	(12,678)	(7,101)	(1,360)	–	(270,217)
TOTAL	1,643	5,038	(122)	184	28	–	6,771

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2021						Total	
	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		
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	

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2020 Remaining maturity						Total
	1 month or less	3 months or less	1 year but over 1 month	5 years but over 3 months	10 years but over 1 year	Over 5 years	
						10 years	
Non-derivative cash outflows							
Certificates of Indebtedness	556,204	–	–	–	–	–	556,204
Government-issued currency notes and coins in circulation	12,844	–	–	–	–	–	12,844
Balance of the banking system	457,466	–	–	–	–	–	457,466
Placements by banks and other financial institutions	82,650	5,000	–	–	–	–	87,650
Placements by Fiscal Reserves	676,841	–	–	204,991	–	–	881,832
Placements by HKSAR Government funds and statutory bodies	185,869	15,000	24,000	91,272	26,330	–	342,471
Placements by subsidiaries	671	–	–	7,900	6,898	–	15,469
Exchange Fund Bills and Notes issued	279,371	535,797	234,449	14,626	5,019	–	1,069,262
Lease liabilities	7	15	58	302	41	–	423
Other liabilities (excluding lease liabilities)	97,260	16,765	33	111,400	–	–	225,458
Credit related commitments	313,513	–	–	–	–	–	313,513
TOTAL	2,662,696	572,577	258,540	430,491	38,288	–	3,962,592
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	329	1	2	9	13	–	354
– on gross basis							
Total outflows	61,860	190,469	1,442	–	–	–	253,771
Total inflows	(60,448)	(185,398)	(1,406)	–	–	–	(247,252)
TOTAL	1,741	5,072	38	9	13	–	6,873

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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 2021, the total risk-in-force was HK\$88.9 billion (2020: HK\$54.5 billion), of which HK\$80.6 billion (2020: HK\$47.6 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 2021, the total risk-in-force of the reverse mortgage loans was HK\$18.7 billion (2020: HK\$15.0 billion), of which HK\$14.0 billion (2020: HK\$12.3 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.

Exchange Fund – Notes to the Financial Statements (continued)

(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 – 2021			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	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.)

	Group – 2020			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	114,802	861,536	–	976,338
Certificates of deposit	–	194,020	–	194,020
Other debt securities	1,975,963	91,724	–	2,067,687
Equity securities	544,970	132,578	76,526	754,074
Investment funds	–	–	343,429	343,429
	2,635,735	1,279,858	419,955	4,335,548
Financial assets measured at fair value through other comprehensive income				
Debt securities	2,835	1,584	–	4,419
Equity securities	–	–	1,370	1,370
	2,835	1,584	1,370	5,789
Derivative financial instruments	306	2,282	–	2,588
TOTAL	2,638,876	1,283,724	421,325	4,343,925
Liabilities				
Exchange Fund Bills and Notes issued	–	1,068,880	–	1,068,880
Derivative financial instruments	329	7,140	–	7,469
TOTAL	329	1,076,020	–	1,076,349

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	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 paper	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

	Fund – 2020			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	114,802	861,536	–	976,338
Certificates of deposit	–	194,020	–	194,020
Other debt securities	1,975,952	91,724	–	2,067,676
Equity securities	544,716	132,578	65,829	743,123
	2,635,470	1,279,858	65,829	3,981,157
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,370	1,370
Derivative financial instruments	306	1,485	–	1,791
TOTAL	2,635,776	1,281,343	67,199	3,984,318
Liabilities				
Exchange Fund Bills and Notes issued	–	1,068,880	–	1,068,880
Derivative financial instruments	329	6,694	–	7,023
TOTAL	329	1,075,574	–	1,075,903

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.

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:

	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	–

	2020			
	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 2020	337,548	1,210	57,368	1,210
Net gains recognised in the income and expenditure account	46,042	–	5,232	–
Net gains recognised in other comprehensive income	–	160	–	160
Purchases	76,255	–	26,327	–
Sales	(42,791)	–	(25,743)	–
Exchange differences	256	–	–	–
Transfers into Level 3	3,260	–	3,260	–
Transfers out of Level 3	(615)	–	(615)	–
At 31 December 2020	419,955	1,370	65,829	1,370
Net gains recognised in the income and expenditure account relating to revaluation of those assets held at the reporting date	47,085	–	6,275	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

During the year, 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.

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 paper 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	
	2021	2020
Earning multiples of similar companies	5.8 – 25.9	5.3 – 21.5
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 an increase/a decrease in the Group's surplus for the year of HK\$51,598 million (2020: HK\$41,996 million) and in other comprehensive income of HK\$134 million (2020: HK\$137 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:

	Note	Group – 2021			Total
		Carrying value		Fair value	
		Level 1	Level 2		
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

	Note	Group – 2020			Total
		Carrying value		Fair value	
		Level 1	Level 2		
Financial assets					
Debt securities measured at amortised cost	13	9,730	9,499	1,050	10,549
Financial liabilities					
Other debt securities issued	29	62,587	–	63,608	63,608

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 2021 and 2020.

Exchange Fund – Notes to the Financial Statements (continued)

(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 2021

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 2021 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 is in the process of preparing the implementation of HKFRS 17.

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. The standard requires entities to measure insurance contract liabilities at their current fulfilment values. The Group is yet to assess the full impact of the standard on its financial position and results of operations. The new standard is effective for annual periods beginning on or after 1 January 2023 and will be applied retrospectively with restatement of comparatives unless impracticable. At this stage, the Group does not intend to adopt the standard before its effective date.

40 APPROVAL OF FINANCIAL STATEMENTS

The financial statements were approved by the Financial Secretary on the advice of the Exchange Fund Advisory Committee on 23 May 2022.

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Annex Authorized Institutions and Local Representative Offices

at 31 December 2021

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
BNP PARIBAS SECURITIES SERVICES
CA Indosuez (Switzerland) SA
Canadian Imperial Bank of Commerce
CANARA BANK
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
Coöperative 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

Addition in 2021

Annex Authorized Institutions and Local Representative Offices at 31 December 2021 (continued)

E.Sun Commercial Bank, Ltd.	Mashreq Bank — Public Shareholding Company also known as Mashreqbank psc	Sumitomo Mitsui Banking Corporation Sumitomo Mitsui Trust Bank, Limited TAIPEI FUBON COMMERCIAL BANK CO., LTD.
EAST WEST BANK	MEGA INTERNATIONAL COMMERCIAL BANK CO., LTD.	TAISHIN INTERNATIONAL BANK CO., LTD
EFG Bank AG	MELLI BANK PLC	Taiwan Business Bank, Ltd.
also known as:	Mitsubishi UFJ Trust and Banking Corporation	Taiwan Cooperative Bank, Ltd.
EFG Bank SA	Mizuho Bank, Ltd.	Taiwan Shin Kong Commercial Bank Co., Ltd.
EFG Bank Ltd	MUFG Bank, Ltd.	Toronto-Dominion Bank
ERSTE GROUP BANK AG	National Australia Bank Limited	UBS AG
FAR EASTERN INTERNATIONAL BANK	National Bank of Pakistan	UCO Bank
First Abu Dhabi Bank PJSC	NATIXIS	UniCredit Bank AG
First Commercial Bank, Ltd.	NATWEST MARKETS PLC	UNION BANCAIRE PRIVÉE, UBP SA
Hachijuni Bank, Ltd. (The)	NongHyup Bank #	also known as UNITED PRIVATE BANK, UBP LTD
HDFC BANK LIMITED	O-Bank Co., Ltd.	Union Bank of India
HONG LEONG BANK BERHAD	Oversea-Chinese Banking Corporation Limited	United Overseas Bank Ltd.
HSBC Bank plc	Philippine National Bank	Wells Fargo Bank, National Association
HSBC Bank USA, National Association	Pictet & Cie (Europe) S.A.	Westpac Banking Corporation
Hua Nan Commercial Bank, Ltd.	Ping An Bank Co., Ltd.	Woori Bank
HUA XIA BANK CO., Limited	PT. Bank Negara Indonesia (Persero) Tbk.	Yuanta Commercial Bank Co., Ltd
ICICI BANK LIMITED	Punjab National Bank	
Indian Overseas Bank	Qatar National Bank (Q.P.S.C.)	
Industrial and Commercial Bank of China Limited	Royal Bank of Canada	
Industrial Bank Co., Ltd.	Shanghai Commercial & Savings Bank, Ltd. (The)	
Industrial Bank of Korea	Shanghai Pudong Development Bank Co., Ltd.	
ING Bank N.V.	Shiga Bank, Ltd. (The)	Deletion in 2021
INTESA SANPAOLO SPA	Shinhan Bank	Bank of Baroda
JPMorgan Chase Bank, National Association	Shizuoka Bank, Ltd. (The)	ICBC STANDARD BANK PLC
KBC Bank N.V.	Skandinaviska Enskilda Banken AB	Svenska Handelsbanken AB (publ)
KEB Hana Bank	Societe Generale	
Kookmin Bank	Standard Chartered Bank	
Land Bank of Taiwan Co., Ltd.	State Bank of India	
LGT Bank AG	State Street Bank and Trust Company	
also known as:		
LGT Bank Ltd.		
LGT Bank SA		
MACQUARIE BANK LIMITED		
MALAYAN BANKING BERHAD		

Annex Authorized Institutions and Local Representative Offices at 31 December 2021 (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
SCOTIABANK (HONG KONG) LIMITED

Deletion in 2021

Nippon Wealth 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 KASIKORN BANK PUBLIC
COMPANY LIMITED

Deletion in 2021

RBC Investor Services Bank S.A.

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

[#] Addition in 2021

Annex Authorized Institutions and Local Representative Offices at 31 December 2021 (continued)

Local Representative Offices

ABC BANKING CORPORATION LTD	Habib Bank A.G. Zurich	Union Bank of Taiwan
Ashikaga Bank, Ltd. (The)	Iyo Bank, Ltd. (The)	VP Bank Ltd
BANCO BPM SOCIETA' PER AZIONI	JIH SUN INTERNATIONAL Bank, Ltd.	also known as :
Banco Bradesco S.A.	Manulife Bank of Canada	VP Bank AG
Banco Security	Metropolitan Bank and Trust Company	VP Bank SA
Bank of Baroda #	National Bank of Canada	Yamaguchi Bank, Ltd. (The)
BANK OF BEIJING CO., LTD.	Nishi-Nippon City Bank, Ltd. (The)	
Bank of Fukuoka, Ltd. (The)	Norinchukin Bank (The)	
Bank of Kyoto, Ltd. (The)	Oita Bank, Ltd. (The)	
Bank of Yokohama, Ltd. (The)	P.T. Bank Central Asia	
Banque Cantonale de Genève	P.T. Bank Rakyat Indonesia (Persero)	
Banque Transatlantique S.A.	Resona Bank, Limited	
BENDURA BANK AG	Shinkin Central Bank	
CAIXABANK S.A.	Shoko Chukin Bank, Ltd. (The)	
Citco Bank Nederland N.V.	Silicon Valley Bank	Deletion in 2021
CLEARSTREAM BANKING S.A.	Swissquote Bank SA	BANK OF DONGGUAN CO., LTD.
Doha Bank Q.P.S.C.	also known as :	Korea Development Bank (The)
Dukascopy Bank SA	Swissquote Bank AG	Nanto Bank, Ltd. (The)
Export-Import Bank of China (The)	Swissquote Bank Inc.	Unione di Banche Italiane S.p.A.
also known as China Exim Bank	Swissquote Bank Ltd	Yamanashi Chuo Bank, Ltd. (The)
Gunma Bank, Ltd. (The)		

Table A Five-year Financial Summary

(HK\$ billion)	2017	2018	2019	2020	2021
For the year					
Total income	245.4	15.8	267.4	255.3	198.6
Total expenditure	66.6	97.4	92.2	101.8	122.4
<i>Of which include interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies</i>	54.8	74.0	62.8	81.3	109.9
Surplus/(Deficit)	181.3	(79.4)	177.6	150.3	79.6
At year end					
Total assets	4,182.0	4,242.0	4,431.2	4,811.0	5,060.3
Total liabilities	3,358.5	3,498.9	3,510.6	3,737.5	3,908.5
<i>Of which include:</i>					
<i>Certificates of Indebtedness</i>	456.7	485.7	516.1	556.2	592.4
<i>Balance of the banking system</i>	179.8	78.6	67.7	457.5	377.5
<i>Exchange Fund Bills and Notes issued</i>	1,045.2	1,129.6	1,152.3	1,068.9	1,148.6
<i>Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies</i>	1,378.9	1,494.0	1,465.9	1,224.3	1,367.6
Accumulated surplus	788.5	742.9	920.3	1,070.8	1,150.0

Table B Major Economic Indicators

	2017	2018	2019	2020	2021
I. Gross Domestic Product					
Real GDP growth (%)	3.8	2.8	(1.7)	(6.5)	6.3 ^(a)
Nominal GDP growth (%)	6.8	6.6	0.3	(5.9)	7.2 ^(a)
Real growth of major expenditure components of GDP (%)					
– Private consumption expenditure	5.5	5.3	(0.8)	(10.5)	5.4 ^(a)
– Government consumption expenditure	2.8	4.2	5.1	7.9	4.6 ^(a)
– Gross domestic fixed capital formation of which	3.1	1.7	(14.9)	(11.5)	9.8 ^(a)
– Building and construction	(0.5)	(0.5)	(10.8)	(9.8)	0.7 ^(a)
– Machinery, equipment and intellectual property products	3.8	8.8	(20.8)	(16.0)	16.8 ^(a)
– Exports ^(b)	5.8	3.7	(6.1)	(6.7)	17.0 ^(a)
– Imports ^(b)	6.6	4.5	(7.2)	(6.9)	16.0 ^(a)
GDP at current market prices (US\$ billion)	341.2	361.7	363.1	344.9	369.2 ^(a)
Per capita GDP at current market prices (US\$)	46,156	48,537	48,357	46,108	49,797 ^(a)
II. External Trade (HK\$ billion) ^(b)					
Trade in goods ^(c)					
– Exports of goods	4,212.8	4,453.4	4,255.1	4,198.3	5,243.8 ^(a)
– Imports of goods	4,391.3	4,706.3	4,375.6	4,239.7	5,222.5 ^(a)
– Balance of trade in goods	(178.5)	(253.0)	(120.5)	(41.3)	21.3 ^(a)
Trade in services					
– Exports of services	811.3	886.9	798.9	518.9	596.7 ^(a)
– Imports of services	605.9	639.9	634.2	426.3	479.6 ^(a)
– Balance of trade in services	205.4	246.9	164.7	92.7	117.1 ^(a)
III. Fiscal Expenditure and Revenue (HK\$ million, fiscal year)					
Total government expenditure ^(d)	470,863	531,825	609,330	816,075	693,320
Total government revenue ^(e)	619,837	599,774	598,755	583,534	722,700
Consolidated surplus/(deficit)	148,974	67,949	(10,575)	(232,541)	29,380
Reserve balance as at end of fiscal year ^(f)	1,102,934	1,170,882	1,160,308	927,767	957,146
IV. Prices (annual change,%)					
Consumer Price Index (A)	1.5	2.7	3.3	(0.6)	2.9
Composite Consumer Price Index	1.5	2.4	2.9	0.3	1.6
Trade Unit Value Indices					
– Domestic exports	2.0	1.8	1.1	0.3	4.9
– Re-exports	1.8	2.4	1.1	(0.6)	5.4
– Imports	1.9	2.6	1.3	(0.7)	5.5
Property Price Indices					
– Residential flats	16.7	13.0	1.5	(0.5)	3.0
– Office premises	14.1	13.9	(2.1)	(13.7)	7.2
– Retail premises	6.0	5.9	(7.1)	(5.6)	4.7
– Flatted factory premises	12.3	14.1	(0.0)	(7.0)	6.4

Table B Major Economic Indicators (continued)

	2017	2018	2019	2020	2021
V. Labour					
Labour force (annual change,%)	0.9	1.0	(0.2)	(1.7)	(1.2)
Employment (annual change,%)	1.2	1.4	(0.3)	(4.7)	(0.6)
Unemployment rate (annual average,%)	3.1	2.8	2.9	5.8	5.2
Underemployment rate (annual average,%)	1.2	1.1	1.1	3.3	2.6
Employment ('000)	3,832.4	3,884.6	3,871.4	3,690.9	3,670.2
VI. Money Supply (HK\$ billion)					
HK\$ money supply					
– M1	1,598.0	1,555.7	1,533.1	1,972.7	2,078.9
– M2 ^(g)	7,010.3	7,262.5	7,438.8	7,922.1	8,044.0
– M3 ^(g)	7,024.5	7,284.3	7,454.7	7,937.0	8,057.4
Total money supply					
– M1	2,431.5	2,421.6	2,484.7	3,231.9	3,490.9
– M2	13,755.3	14,348.1	14,745.9	15,606.6	16,272.6
– M3	13,803.8	14,403.7	14,786.4	15,644.0	16,310.9
VII. Interest Rates (end of period,%)					
Three-month interbank rate ^(h)	1.31	2.33	2.43	0.35	0.26
Savings deposit	0.01	0.13	0.00	0.00	0.00
One-month time deposit	0.01	0.14	0.12	0.02	0.02
Banks' 'Best lending rate'	5.00	5.13	5.00	5.00	5.00
Banks' 'Composite rate' ⁽ⁱ⁾	0.38	0.89	1.09	0.28	0.21
VIII. Exchange Rates (end of period)					
HK\$/US\$	7.814	7.834	7.787	7.753	7.798
Trade-weighted Effective Exchange Rate Index (Jan 2020=100)	95.3	99.0	100.1	95.3	95.3
IX. Foreign Currency Reserve Assets (US\$ billion) ^(j)	431.4	424.6	441.4	491.9	496.9
X. Stock Market (end of period figures)					
Hang Seng Index	29,919	25,846	28,190	27,231	23,398
Average price/earnings ratio	16.3	10.5	13.3	17.6	15.1
Market capitalisation (HK\$ billion)	33,718.0	29,723.2	38,058.3	47,392.2	42,272.8

(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						Retail Banks				
	2017 %	2018 %	2019 %	2020 %	2021 %		2017 %	2018 %	2019 %	2020 %	2021 %
Asset Quality^(b)											
As % of total credit exposures ^(c)											
Total outstanding provisions/impairment allowances	0.48	0.49	0.49	0.62	0.59		0.26	0.34	0.36	0.51	0.51
Classified ^(d) exposures:											
– Gross	0.48	0.39	0.39	0.66	0.65		0.37	0.34	0.29	0.57	0.57
– Net of specific provisions/individual impairment allowances	0.26	0.19	0.19	0.37	0.37		0.25	0.20	0.15	0.34	0.34
– Net of all provisions/impairment allowances	(0.00)	(0.10)	(0.10)	0.04	0.06		0.11	(0.00)	(0.07)	0.07	0.06
As % of total loans ^(e)											
Total outstanding provisions/impairment allowances	0.71	0.70	0.70	0.87	0.85		0.45	0.52	0.56	0.77	0.77
Classified ^(d) loans:											
– Gross	0.68	0.55	0.57	0.90	0.88		0.56	0.51	0.48	0.82	0.83
– Net of specific provisions/individual impairment allowances	0.36	0.26	0.28	0.50	0.48		0.36	0.30	0.25	0.45	0.47
– Net of all provisions/impairment allowances	(0.04)	(0.15)	(0.13)	0.03	0.03		0.11	(0.02)	(0.08)	0.05	0.06
Overdue > 3 months and rescheduled loans	0.52	0.36	0.34	0.57	0.56		0.40	0.32	0.32	0.49	0.50
Profitability											
Return on assets (operating profit)	0.91	0.97	0.95	0.65	0.62		1.16	1.27	1.19	0.77	0.59
Return on assets (post-tax profit)	0.83	0.84	0.83	0.58	0.55		1.07	1.10	1.05	0.69	0.53
Net interest margin	1.12	1.20	1.24	0.97	0.86		1.45	1.62	1.63	1.18	0.98
Cost-to-income ratio	47.0	45.0	45.6	50.7	55.3		41.9	38.7	39.5	47.0	54.7
Loan impairment charges to total assets	0.10	0.06	0.09	0.14	0.07		0.06	0.05	0.08	0.12	0.08
Liquidity											
Loan to deposit ratio (all currencies)	73.0	72.6	75.3	72.3	71.8		59.5	60.1	62.3	59.6	60.8
Loan to deposit ^(f) ratio (Hong Kong dollar)	82.7	86.9	90.3	83.5	86.7		73.1	77.5	81.1	75.9	79.0
Asset Quality											
Delinquency ratio of residential mortgage loans							0.03	0.02	0.03	0.04	0.04
Credit card receivables							0.22	0.21	0.25	0.27	0.20
– Delinquency ratio							1.75	1.51	1.57	2.18	1.75
Profitability											
Operating profit to shareholders' funds							11.7	12.9	11.6	7.7	6.0
Post-tax profit to shareholders' funds							10.9	11.2	10.2	6.9	5.4
Capital Adequacy											
Equity to assets ratio ^(b)							9.6	9.3	9.7	9.3	8.9
Capital Adequacy^(g)											
Common Equity Tier 1 capital ratio							15.3	16.0	16.5	16.7	16.2
Tier 1 capital ratio							16.5	17.9	18.5	18.7	18.2
Total capital ratio							19.1	20.3	20.7	20.7	20.2

(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.

(f) Includes swap deposit
(g) The ratios are on a com-

(g) The ratios are on a consolidated basis.

Table D Authorized Institutions: Domicile and Parentage

	2017	2018	2019	2020	2021
Licensed Banks					
(i) Incorporated in Hong Kong	22	22	31	31	31
(ii) Incorporated outside Hong Kong	133	130	133	130	129
Total	155	152	164	161	160
Restricted Licence Banks					
(i) Subsidiaries of licensed banks:					
(a) incorporated in Hong Kong	1	1	1	1	—
(b) incorporated outside Hong Kong	5	4	4	4	4
(ii) Subsidiaries or branches of foreign banks which are not licensed banks in Hong Kong	7	7	7	7	8
(iii) Bank related	3	3	3	3	2
(iv) Others	3	3	2	2	2
Total	19	18	17	17	16
Deposit-taking Companies					
(i) Subsidiaries of licensed banks:					
(a) incorporated in Hong Kong	4	3	3	3	3
(b) incorporated outside Hong Kong	3	3	3	3	3
(ii) Subsidiaries of foreign banks which are not licensed banks in Hong Kong	6	6	4	3	3
(iii) Bank related	—	—	—	—	—
(iv) Others	4	4	3	3	3
Total	17	16	13	12	12
All Authorized Institutions	191	186	194	190	188
Local Representative Offices	49	48	43	43	39

Table E Authorized Institutions: Region/Economy of Beneficial Ownership

Region/Economy	Licensed Banks					Restricted Licence Banks					Deposit-taking Companies				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Asia & Pacific															
Hong Kong, China	7	7	9	9	9	–	–	–	–	–	2	2	1	1	1
Australia	5	5	5	5	5	–	–	–	–	–	–	–	–	–	–
Mainland China	22	22	30	32	32	2	2	2	2	2	3	2	2	2	2
India	12	12	12	10	9	–	–	–	–	–	1	1	1	1	1
Indonesia	1	1	1	1	1	1	1	1	1	1	–	–	–	–	–
Japan	11	10	10	10	10	2	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	1	–	–	–
Philippines	2	2	2	2	2	1	1	1	1	1	2	2	2	2	2
Singapore	6	6	6	6	6	–	–	–	–	–	–	–	–	–	–
Republic of Korea	5	5	5	5	6	1	1	1	1	2	4	4	3	3	3
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	97	96	106	106	106	10	10	10	10	10	17	16	13	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	7	7	1	–	–	–	–	–	–	–	–
Germany	3	3	3	3	3	–	–	–	–	–	–	–	–	–	–
Italy	3	3	3	2	2	–	–	–	–	–	–	–	–	–	–
Liechtenstein	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Netherlands	3	3	3	3	3	–	–	–	–	–	–	–	–	–	–
Spain	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Sweden	2	2	2	2	1	–	–	–	–	–	–	–	–	–	–
Switzerland	7	6	6	7	7	–	–	–	–	–	–	–	–	–	–
United Kingdom	10	9	9	6	6	–	–	–	–	–	–	–	–	–	–
Sub-Total	40	38	38	35	34	2	1	1	1	1	0	0	0	0	0
Middle East															
Iran	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Qatar	–	–	1	1	1	–	–	–	–	–	–	–	–	–	–
United Arab Emirates	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Sub-Total	3	3	4	4	4	0	0	0	0	0	0	0	0	0	0
North America															
Canada	5	5	5	5	5	2	2	2	2	1	–	–	–	–	–
United States	9	9	10	10	10	5	5	4	4	4	–	–	–	–	–
Sub-Total	14	14	15	15	15	7	7	6	6	5	0	0	0	0	0
Brazil	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Grand Total	155	152	164	161	160	19	18	17	17	16	17	16	13	12	12

Table F Presence of World's Largest 500 Banks in Hong Kong

Positions at 31.12.2021	Number of Overseas Banks^(b)					Licensed Banks^(c)					Restricted Licence Banks^(c)					Deposit-Taking Companies^(c)					Local Representative Offices					
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	
World Ranking^(a)																										
1–20	20	20	20	19	19	34	33	33	30	30	5	4	4	4	4	1	1	1	–	1	–	–	–	–	–	–
21–50	27	27	27	28	28	28	28	30	30	29	4	4	3	3	2	1	–	–	1	–	2	2	2	2	2	
51–100	28	30	31	30	31	22	24	27	27	28	2	2	1	1	1	3	3	2	2	2	8	8	6	5	5	
101–200	34	36	37	36	36	24	24	25	23	24	1	2	3	4	4	1	1	1	2	2	10	10	10	11	10	
201–500	47	42	39	35	34	29	27	26	20	23	2	1	1	1	1	5	4	4	2	2	13	12	10	12	8	
Sub-total	156	155	154	148	148	137	136	141	130	134	14	13	12	13	12	11	9	8	7	7	33	32	28	30	25	
Others	31	31	27	30	25	18	16	23	31	26	5	5	5	4	4	6	7	5	5	5	16	16	15	13	14	
Total	187	186	181	178	173	155	152	164	161	160	19	18	17	17	16	17	16	13	12	12	49	48	43	43	39	

(a) Top 500 banks/banking groups in the world ranked by total assets. Figures are extracted from The Banker, July 2021 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

(HK\$ billion)	2017			2018 ^(d)			2019			2020			2021		
	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets															
Loans to customers	5,360	3,954	9,314	5,836	3,886	9,723				6,219	4,157	10,377	6,107	4,392	10,499
– Inside Hong Kong ^(a)	4,653	1,860	6,513	4,988	1,788	6,776				5,312	1,928	7,240	5,262	2,095	7,357
– Outside Hong Kong ^(b)	707	2,093	2,801	849	2,099	2,947				908	2,229	3,137	845	2,297	3,142
Interbank lending	652	5,343	5,995	692	5,906	6,598				648	5,128	5,776	528	5,149	5,678
– Inside Hong Kong	327	690	1,017	338	764	1,102				311	604	915	290	590	880
– Outside Hong Kong	326	4,653	4,978	354	5,142	5,496				337	4,524	4,861	238	4,560	4,798
Negotiable certificates of deposit (NCDs)	172	429	601	168	394	562				146	373	519	171	343	514
Negotiable debt instruments, other than NCDs	1,274	3,092	4,365	1,358	3,441	4,799				1,395	3,690	5,086	1,306	4,076	5,383
Other assets	924	1,497	2,421	875	1,487	2,361				1,033	1,672	2,705	1,453	2,338	3,792
Total assets	8,382	14,315	22,697	8,929	15,114	24,043				9,442	15,020	24,462	9,566	16,299	25,865
Liabilities															
Deposits from customers ^(c)	6,485	6,268	12,752	6,715	6,671	13,386				6,884	6,887	13,772	7,311	7,202	14,514
Interbank borrowing	829	4,653	5,482	945	4,849	5,794				959	4,514	5,473	851	4,748	5,599
– Inside Hong Kong	458	756	1,214	517	776	1,293				499	606	1,105	464	605	1,069
– Outside Hong Kong	371	3,897	4,268	428	4,073	4,501				461	3,908	4,368	387	4,142	4,530
Negotiable certificates of deposit	235	720	955	220	595	815				181	623	803	229	655	884
Other liabilities	1,618	1,889	3,507	1,853	2,195	4,048				2,200	2,214	4,414	2,114	2,755	4,869
Total liabilities	9,167	13,530	22,697	9,733	14,310	24,043				10,224	14,238	24,462	10,505	15,359	25,865

Retail Banks

(HK\$ billion)	2017			2018 ^(d)			2019			2020			2021		
	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets															
Loans to customers	4,171	1,819	5,991	4,600	1,831	6,431				4,988	1,939	6,927	5,005	2,106	7,111
– Inside Hong Kong ^(a)	3,818	995	4,813	4,157	993	5,150				4,456	1,068	5,524	4,457	1,151	5,608
– Outside Hong Kong ^(b)	353	825	1,178	443	838	1,281				532	871	1,403	549	955	1,504
Interbank lending	383	1,993	2,376	445	2,364	2,809				407	2,039	2,445	316	2,237	2,553
– Inside Hong Kong	246	384	630	272	453	725				255	381	636	219	374	593
– Outside Hong Kong	137	1,609	1,746	173	1,911	2,084				152	1,657	1,809	97	1,863	1,960
Negotiable certificates of deposit (NCDs)	119	123	242	136	123	259				105	117	223	130	124	254
Negotiable debt instruments, other than NCDs	995	2,036	3,031	1,048	2,243	3,292				1,106	2,502	3,608	1,082	2,805	3,888
Other assets	733	1,118	1,851	722	1,116	1,838				871	1,272	2,143	1,166	1,699	2,865
Total assets	6,400	7,090	13,490	6,952	7,677	14,630				7,477	7,870	15,346	7,700	8,971	16,671
Liabilities															
Deposits from customers ^(c)	5,704	4,356	10,061	5,939	4,754	10,693				6,149	4,972	11,122	6,595	5,329	11,924
Interbank borrowing	304	587	891	354	714	1,068				373	635	1,008	373	857	1,230
– Inside Hong Kong	193	248	440	234	263	497				244	160	404	245	230	475
– Outside Hong Kong	111	340	451	120	451	572				129	475	604	128	626	754
Negotiable certificates of deposit	46	125	171	42	79	121				57	87	144	94	80	174
Other liabilities	1,316	1,051	2,367	1,528	1,220	2,748				1,815	1,257	3,072	1,711	1,632	3,343
Total liabilities	7,370	6,120	13,490	7,862	6,767	14,630				8,395	6,951	15,346	8,774	7,897	16,671

(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						Total
	China	Japan	US	Europe	Others		
Total Assets	2020	9,194	1,451	1,409	3,629	10,182	25,865
	2021	9,498	1,358	1,440	3,559	10,512	26,367
Deposits from Customers	2020	5,371	319	761	1,786	6,276	14,514
	2021	5,643	266	845	1,884	6,549	15,186
Loans to Customers	2020	4,050	586	336	1,459	4,067	10,499
	2021	4,229	552	370	1,515	4,231	10,897
Loans to Customers	2020	2,716	316	270	850	3,206	7,357
Inside Hong Kong ^(a)	2021	2,901	302	301	886	3,329	7,721
Loans to Customers	2020	1,334	271	66	609	861	3,142
Outside Hong Kong ^(b)	2021	1,328	250	69	628	902	3,176

(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 (HK\$ billion)	2020			2021		
	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets						
Loans to customers	(112)	234	122	319	79	398
– Inside Hong Kong ^(a)	(49)	167	117	280	84	364
– Outside Hong Kong ^(b)	(63)	68	5	39	(5)	34
Interbank lending	(119)	21	(98)	(42)	(113)	(155)
– Inside Hong Kong	(21)	(14)	(35)	(44)	(6)	(50)
– Outside Hong Kong	(98)	35	(63)	2	(107)	(105)
All other assets	356	1,023	1,379	(167)	426	259
Total assets	124	1,278	1,403	110	392	502
Liabilities						
Deposits from customers ^(c)	427	315	742	103	570	673
Interbank borrowing	(108)	234	126	(80)	(60)	(140)
– Inside Hong Kong	(35)	(1)	(36)	(91)	23	(68)
– Outside Hong Kong	(73)	235	161	11	(83)	(72)
All other liabilities	(37)	572	535	(109)	78	(31)
Total liabilities	282	1,121	1,403	(86)	588	502
Net Interbank Borrowing/(Lending)	11	213	224	(38)	53	15
Net Customer Lending/(Borrowing)	(540)	(81)	(620)	216	(490)	(275)

Retail Banks

Increase/(Decrease) in (HK\$ billion)	2020			2021		
	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets						
Loans to customers	18	167	184	277	144	421
– Inside Hong Kong ^(a)	1	83	84	259	95	354
– Outside Hong Kong ^(b)	16	84	100	18	49	67
Interbank lending	(90)	198	108	(51)	(33)	(84)
– Inside Hong Kong	(36)	(7)	(43)	(42)	(31)	(74)
– Outside Hong Kong	(54)	205	151	(9)	(2)	(10)
All other assets	297	736	1,033	(131)	608	477
Total assets	224	1,101	1,325	95	719	813
Liabilities						
Deposits from customers ^(c)	446	357	802	93	380	473
Interbank borrowing	(0)	221	221	(49)	157	108
– Inside Hong Kong	1	70	71	(53)	39	(14)
– Outside Hong Kong	(1)	151	150	4	118	122
All other liabilities	(67)	368	301	(24)	256	232
Total liabilities	379	946	1,325	19	794	813
Net Interbank Borrowing/(Lending)	90	23	113	2	190	192
Net Customer Lending/(Borrowing)	(428)	(190)	(618)	184	(237)	(53)

(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

(HK\$ billion)	Loans to Customers				Deposits from Customers ^(a)			
	HK\$	F/CY	Total	%	HK\$	F/CY	Total	%
2017								
Licensed banks	5,330	3,921	9,251	99	6,471	6,239	12,710	100
Restricted licence banks	17	27	45	–	9	28	37	–
Deposit-taking companies	12	5	18	–	5	1	6	–
Total	5,360	3,954	9,314	100	6,485	6,268	12,752	100
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	0	5	–
Total	6,426	4,471	10,897	100	7,414	7,772	15,186	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 (HK\$ billion)	2017		2018 ^(b)		2019		2020		2021	
	HK\$	%	HK\$	%	HK\$	%	HK\$	%	HK\$	%
Hong Kong's visible trade	494	8	456	7	453	6	425	6	485	6
Manufacturing	293	4	300	4	301	4	306	4	317	4
Transport and transport equipment	342	5	332	5	327	5	350	5	330	4
Building, construction and property development, and investment	1,470	23	1,526	23	1,618	22	1,618	22	1,711	22
Wholesale and retail trade	409	6	390	6	376	5	349	5	326	4
Financial concerns (other than authorized institutions)	821	13	858	13	909	13	918	12	909	12
Individuals:										
– to purchase flats in the Home Ownership Scheme, the Private Sector Participation Scheme and the Tenants Purchase Scheme	51	1	58	1	78	1	94	1	106	1
– to purchase other residential properties	1,226	19	1,340	20	1,466	20	1,580	21	1,735	22
– other purposes	605	9	663	10	779	11	777	11	830	11
Others	801	12	854	13	932	13	939	13	972	13
Total ^(a)	6,513	100	6,776	100	7,240	100	7,357	100	7,721	100

Retail Banks

Sector (HK\$ billion)	2017		2018 ^(b)		2019		2020		2021	
	HK\$	%	HK\$	%	HK\$	%	HK\$	%	HK\$	%
Hong Kong's visible trade	327	7	315	6	316	6	296	5	336	6
Manufacturing	201	4	213	4	211	4	206	4	196	3
Transport and transport equipment	213	4	217	4	211	4	237	4	225	4
Building, construction and property development, and investment	1,085	23	1,154	22	1,203	22	1,216	22	1,283	22
Wholesale and retail trade	245	5	260	5	256	5	227	4	221	4
Financial concerns (other than authorized institutions)	425	9	464	9	513	9	488	9	489	8
Individuals:										
– to purchase flats in the Home Ownership Scheme, the Private Sector Participation Scheme and the Tenants Purchase Scheme	51	1	58	1	78	1	94	2	106	2
– to purchase other residential properties	1,220	25	1,333	26	1,464	27	1,578	28	1,732	29
– other purposes	482	10	532	10	627	11	610	11	665	11
Others	566	12	604	12	644	12	656	12	708	12
Total ^(a)	4,813	100	5,150	100	5,524	100	5,608	100	5,961	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)								
2017	1,160	3,067	2,258	6,485	1,022	3,005	1,677	5,704
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
Foreign currency								
2017	833	2,263	3,172	6,268	494	1,964	1,898	4,356
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
Total								
2017	1,993	5,330	5,430	12,752	1,517	4,969	3,575	10,061
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

(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)	2020				2021			
	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong	Total Net Claims/ (Liabilities)	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong	Total Net Claims/ (Liabilities)	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong
	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong	Total Net Claims/ (Liabilities)	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong	Total Net Claims/ (Liabilities)	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong
Developed economies								
United States of America	528	1,644	2,172	575	1,946	2,521		
Japan	280	532	813	367	741	1,107		
Australia	(17)	555	538	(98)	735	637		
Canada	248	135	383	226	132	358		
United Kingdom	124	95	219	71	70	142		
Luxembourg	75	(35)	40	126	9	135		
Ireland	40	35	75	49	30	80		
New Zealand	1	63	64	(1)	60	59		
Switzerland	17	20	37	26	15	42		
France	3	(0)	2	25	0	25		
Sweden	(8)	78	71	(21)	45	24		
Liechtenstein	1	23	24	1	23	24		
Norway	13	(1)	13	11	(0)	11		
Belgium	7	3	10	6	2	8		
Finland	2	6	8	4	0	4		
Denmark	1	4	5	1	1	2		
Portugal	1	(0)	1	1	(0)	0		
Cyprus	0	(1)	(1)	1	(1)	0		
Austria	(13)	0	(12)	(8)	2	(7)		
Germany	(38)	74	36	(40)	31	(9)		
Netherlands	(97)	63	(34)	(67)	49	(18)		
Italy	(38)	(1)	(38)	(44)	0	(43)		
Spain	(78)	(3)	(81)	(62)	5	(57)		
Others	(0)	(0)	(0)	(0)	(1)	(1)		
Offshore centres								
West Indies UK	57	165	222	(87)	137	49		
Cayman Islands	1	193	194	1	186	187		
Jersey	(11)	87	75	(10)	69	58		
Bahrain	(0)	12	12	(0)	11	11		
Bahamas	(0)	3	3	7	3	10		
Panama	0	(3)	(3)	0	5	5		
Guernsey	1	4	5	0	2	3		
Mauritius	(0)	(1)	(1)	(0)	1	1		
Bermuda	3	6	9	(4)	3	(0)		
Curacao	(0)	(5)	(5)	0	(1)	(1)		
Barbados	0	(1)	(1)	(0)	(1)	(1)		
Samoa	0	(24)	(24)	0	(23)	(23)		
Singapore	81	(81)	0	9	(95)	(87)		
Macao, China	(17)	(22)	(39)	(91)	(21)	(111)		
Others	(0)	(1)	(1)	(0)	(0)	(0)		
Developing Europe								
Turkey	2	(28)	(26)	(6)	(24)	(30)		
Czech Republic	3	0	3	3	(1)	2		
Poland	(0)	2	2	0	1	1		
Hungary	0	0	0	0	1	1		
Russia	(0)	(2)	(2)	(0)	(1)	(1)		
Others	(1)	(28)	(29)	(5)	(25)	(30)		
	0	(1)	(1)	(4)	(0)	(4)		

Table M Geographical Breakdown of Net External Claims/(Liabilities) of All Authorized Institutions (continued)

Region/Economy ^(a) (HK\$ billion)	2020				2021			
	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong		Total Net Claims/ (Liabilities)	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Non-Bank Customers Outside Hong Kong		Total Net Claims/ (Liabilities)	
	Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Banks Outside Hong Kong			Net Claims on/(Liabilities to) Banks Outside Hong Kong	Net Claims on/(Liabilities to) Banks Outside Hong Kong		
Developing Latin America and Caribbean								
Venezuela	17	(0)	17	16	(5)	11		
Chile	13	(0)	13	13	(0)	13		
Brazil	2	5	7	1	8	8		
Peru	4	3	7	3	3	6		
Argentina	1	6	6	0	5	5		
Mexico	(1)	0	(0)	(1)	0	(0)		
Others	0	(7)	(7)	0	(15)	(15)		
	(1)	(7)	(8)	(1)	(6)	(7)		
Developing Africa and Middle East								
United Arab Emirates	65	15	81	154	30	184		
Qatar	50	30	80	108	38	146		
Saudi Arabia	36	16	52	63	20	83		
Egypt	5	10	15	3	15	18		
Israel	(0)	1	1	4	1	5		
South Africa	1	(1)	(0)	1	1	2		
Kenya	3	(1)	3	2	(0)	2		
Ghana	0	2	2	1	0	1		
Algeria	(1)	0	(1)	(0)	(0)	(1)		
Liberia	0	(2)	(2)	0	(2)	(2)		
Kuwait	0	(3)	(3)	(2)	(3)	(6)		
Nigeria	(20)	(7)	(27)	(19)	(10)	(29)		
Others	(8)	(30)	(38)	(5)	(30)	(35)		
Developing Asia and Pacific								
Republic of Korea	366	(217)	150	298	(300)	(2)		
Thailand	250	80	330	270	91	360		
Malaysia	73	(16)	56	89	(9)	80		
Indonesia	40	(1)	38	57	(2)	55		
Bangladesh	7	23	30	7	14	20		
Cambodia	18	(2)	15	21	(3)	18		
India	0	(2)	(2)	4	8	13		
Mongolia	(66)	75	9	(65)	69	4		
Sri Lanka	(1)	3	3	(0)	3	3		
Papua New Guinea	4	3	7	(1)	3	3		
Brunei Darussalam	(0)	3	2	(0)	2	1		
Myanmar	0	(0)	0	1	(0)	1		
Laos	(1)	1	0	(1)	1	0		
Pakistan	3	0	4	(1)	0	(1)		
Maldives	3	(2)	(1)	(0)	(1)	(2)		
Kazakhstan	1	(5)	(4)	1	(5)	(4)		
Vietnam	(22)	16	(6)	(26)	22	(4)		
Nepal	(9)	(1)	(11)	(6)	(1)	(7)		
Philippines	(19)	(15)	(34)	(15)	(13)	(28)		
Mainland China	84	(80)	5	(85)	(188)	(273)		
Taiwan, China	12	(306)	(294)	57	(301)	(244)		
Others	(9)	13	3	(6)	12	6		
International organisations	0	116	116	0	136	136		
Overall total	1,036	1,695	2,732	949	1,919	2,868		

(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

Als	– Authorized institutions	GPs	– General partners
AMBs	– Approved money brokers	GRI	– Global Reporting Initiative
AML/CFT	– Anti-money laundering and counter-financing of terrorism	GSC	– Governance Sub-Committee
AMLab	– Anti-Money Laundering Regtech Lab	G-SIB	– Global systemically important bank
AoF	– Hong Kong Academy of Finance	HKAB	– Hong Kong Association of Banks
API	– Application programming interface	HKEX	– Hong Kong Exchanges and Clearing Limited
ASEAN	– Association of Southeast Asian Nations	HKMA	– Hong Kong Monetary Authority
ATMs	– Automated teller machines	HKMC	– Hong Kong Mortgage Corporation Limited
Basel Committee	– Basel Committee on Banking Supervision	HKSAR	– Hong Kong Special Administrative Region
BIS	– Bank for International Settlements	IA	– Insurance Authority (<i>Banking Stability chapter</i>)
BO	– Banking Ordinance	IOSCO	– International Organization of Securities Commissions
BP	– Backing Portfolio	IP	– Investment Portfolio
CASG	– Green and Sustainable Finance Cross-Agency Steering Group	IPO	– Initial public offering
CBDC	– Central Bank Digital Currency	LIBOR	– London Interbank Offered Rate
CDI	– Commercial Data Interchange	LTGP	– Long-Term Growth Portfolio
CHATS	– Clearing House Automated Transfer System	MA	– Monetary Authority
CLS	– Continuous Linked Settlement	mBridge	– Multiple Central Bank Digital Currency Bridge
CMGs	– Crisis Management Groups	MoU	– Memorandum of understanding
CMU	– Central Moneymarkets Unit	MPF	– Mandatory provident fund
COP26	– UN Climate Change Conference in Glasgow	NGFS	– Central Banks and Supervisors Network for Greening the Financial System
COVID-19	– Coronavirus disease 2019	non-F2F	– Non-face-to-face
CPMI	– Committee on Payments and Market Infrastructures	OCIR	– Operational continuity in resolution
Cross-boundary WMC	– Cross-boundary Wealth Management Connect	OTC	– Over-the-counter
CSR	– Corporate social responsibility	PBoC	– People's Bank of China
CSSs	– Clearing and settlement systems	PFMI	– Principles for Financial Market Infrastructures
CUs	– Convertibility Undertakings	PSSVFO	– Payment Systems and Stored Value Facilities Ordinance
D-SIBs	– Domestic systemically important banks	PvP	– Payment-versus-payment
DTCA	– The Hong Kong Association of Restricted Licence Banks and Deposit-taking Companies	Regtech	– Regulatory technology
EFAC	– Exchange Fund Advisory Committee	ReSG	– Resolution Steering Group
EFBNs	– Exchange Fund Bills and Notes	RI	– Responsible investment
EFIO	– Exchange Fund Investment Office	RMB	– Renminbi
EMEAP	– Executives' Meeting of East Asia-Pacific Central Banks	RPSS	– Retail payment systems
ESG	– Environmental, social and governance	RTGS	– Real Time Gross Settlement
FFO	– Fintech Facilitation Office	SFC	– Securities and Futures Commission
fintech	– Financial technology	SFGS	– SME Financing Guarantee Scheme
FIRO	– Financial Institutions (Resolution) Ordinance	SFO	– Securities and Futures Ordinance
FMLs	– Financial market infrastructures	SGR	– Study Group on Resolution
FPS	– Faster Payment System	SME	– Small and medium-sized enterprise
FS	– Financial Secretary	SPM	– Supervisory Policy Manual
FSB	– Financial Stability Board	SVF	– Stored value facility
G20	– Group of Twenty	TCFD	– Task Force on Climate-related Financial Disclosures
GBA	– Guangdong–Hong Kong–Macao Greater Bay Area	tCO ₂ e	– Tonnes of carbon dioxide equivalent
GDP	– Gross domestic product	TLAC	– Total loss-absorbing capacity
GHG	– Greenhouse gas	WACI	– Weighted average carbon intensity
		WGFM	– Working Group on Financial Markets

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