



HONG KONG MONETARY AUTHORITY
香港金融管理局



2019

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.

The HKMA's offices are at

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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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The chapter on Banking Stability 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 2019 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 of 2019 has been anything but uneventful.

US-China trade tensions remained a big wild card. Lingering uncertainties over trade talks between the world's two largest economies rattled investor confidence and undermined international trade, manufacturing, investment and even consumption. Gone are the days when global economic expansion was a given. The global economy entered a synchronised slowdown during the year. In response to the slower growth, major central banks around the world have reversed course on their monetary policy normalisation.

Locally, social incidents happening in the second half of the year dealt a further blow to the Hong Kong economy. The retail, tourism and catering sectors were among the hardest hit. For 2019 as a whole, the Hong Kong economy contracted by 1.2%, the first annual decline in a decade, while the unemployment rate rose to 3.3% from a multi-year low of 2.8% at the beginning of the year. As 2020 dawned, the novel coronavirus (COVID-19) outbreak posed yet another significant threat to both global and local economies.

In the face of such an uncertain and challenging environment, it is of paramount importance to maintain monetary and financial stability in Hong Kong, as I made clear when taking over as Chief Executive of the HKMA on 1 October 2019.

Monetary and financial stability: the bedrock of an international financial centre

The Linked Exchange Rate System (LERS) in place since 1983 has helped Hong Kong weather numerous challenges and shocks, demonstrating its important role as an anchor of Hong Kong's economic prosperity and status as an international financial centre. Notwithstanding the challenging external and domestic environment during the year, the LERS continued to operate in a smooth and orderly manner, once again proving its resilience in times of uncertainty. Hong Kong's banking system also remained sound and robust. The facts speak for themselves: the Hong Kong dollar exchange rate remained stable and has strengthened to the strong side of the Convertibility Zone in recent months, while bank deposits continued to grow during the year. In a nutshell, no noticeable outflow of funds from the Hong Kong dollar or the banking system was observed.

The stability of Hong Kong's monetary and banking systems reflects not only the robustness of, but also strong confidence in, our systems. This did not happen overnight, but through years of efforts to build up buffers and strengthen surveillance, complemented by our swift response to rumours on social media platforms.

Chief Executive's Statement

Our preparations over the years for rainy days have built a solid foundation and strong buffers for Hong Kong's monetary and banking systems. In addition to the vast foreign exchange reserves in our public coffers, our banking system has strong capital buffers, robust liquidity and very good asset quality, whether by international or historical standards. The eight rounds of countercyclical macroprudential measures on property mortgages implemented since 2009 have also greatly enhanced banks' resilience against a property market downturn.

Market surveillance and banking supervision make up the core part of our work in maintaining monetary and banking stability, and we have been strengthening our surveillance and supervisory framework from time to time. Apart from close monitoring of the credit and liquidity risks of banks, one of our new endeavours in the year was to make use of technology and granular data collected from banks to enhance our capability to monitor Hong Kong dollar funding and financial market activities in a more in-depth and timely manner. Stress tests and contingency planning have also been augmented in the light of the fast evolving economic and operating environment.

Indeed, our robust regulatory regime has won strong endorsements internationally. During the year, the International Monetary Fund reaffirmed that Hong Kong was well placed to address both cyclical and structural changes, given its significant buffers. Hong Kong's effective legal and institutional framework for combatting money laundering and terrorist financing also obtained a positive assessment from the Financial Action Task Force (FATF), making Hong Kong the first in the Asia-Pacific region to achieve an overall compliant result in the FATF's Mutual Evaluation.

Confidence is the foundation for the proper functioning of markets and is crucial to the safeguarding of monetary and financial stability. To maintain market confidence, we have to be on high alert for, and respond swiftly to, any malicious rumours that may potentially cast doubt on Hong Kong's monetary or banking systems. This is particularly important

given the prevalent use of social media and instant messaging nowadays. While a variety of rumours were spread on social media platforms by fearmongers during the outbreak of social unrest, our quick and clear rebuttals to these rumours through social media, in addition to traditional media, proved useful and effective in clearing the air, quelling false rumours from spreading further, and upholding international and public confidence in our systems.

Banking system: an important pillar of economic activity

The banking sector, as an essential pillar of economic activity, plays a fundamental role in ensuring the smooth running of society and the economy. Despite the challenging operating environment since the latter half of the year, banks have been working hard alongside others and doing their utmost to maintain normal operation of their core functions and continue serving businesses and the public.

In addition to basic banking services like deposits and transfers, an important function of banks is in extending credit to borrowers in support of the real economy. We are well aware of, and concerned about, the cash-flow problem facing businesses, especially small and medium-sized enterprises (SMEs), under the difficult economic conditions. While safeguarding banking stability, we have launched a number of initiatives to ensure continued funding support to SMEs. In particular, the Countercyclical Capital Buffer ratio of banks was reduced on two occasions, in October 2019 and March 2020, by a total of 150 basis points to 1.0%; the level of regulatory reserve requirement on banks was also reduced by half in April 2020. These measures release a total of around HK\$1 trillion in lending capacity, providing banks with more room for lending to enterprises including SMEs. We have also set up a platform – the Banking Sector SME Lending Coordination Mechanism – bringing together major banks in Hong Kong to explore and discuss specific measures to strengthen funding support for SMEs. I am pleased to see that many banks have responded proactively to our call and introduced relief measures such as principal moratorium for customers in need to ride out the storm.

Chief Executive's Statement

In view of some SMEs' feedback about difficulties in opening bank accounts, which is the very first step in accessing various banking services, we have made dedicated efforts to address this issue over the past few years. Our work is bearing fruit, as improvement in account opening for businesses is visible. As a further step to promote financial inclusion, the HKMA spearheaded the launch of tiered account services – Simple Bank Accounts (SBAs) with a streamlined customer due diligence process – to provide start-ups and SMEs with an alternative to traditional bank accounts. More than 2,800 SBAs have been opened so far.

International financial centre: from strength to strength

We have always been mindful of the need to strike a reasonable balance between regulation and development. Given the intense competition among financial centres, we have to work hard to strengthen Hong Kong's competitiveness as an international financial centre and thereby ensure its longer term stability. There are four key areas of work: technology, green finance, financial connectivity with the Mainland, and talent development.

Embracing technology in the digital era

Hong Kong has been moving fast in promoting financial technology (fintech) since the establishment of the HKMA Fintech Facilitation Office in 2016 and the introduction of the Smart Banking initiatives in 2017.

On the payment front, the vibrancy of the fintech ecosystem is evident in the strong momentum in the adoption of the Faster Payment System (FPS), the world's first multi-currency, cross-banks and e-wallets, real-time retail payment platform. FPS registrations reached four million within a short span of 15 months, representing a high rate of penetration in a population of 7.5 million people. The Government has also adopted the FPS to provide the public with greater convenience in paying taxes, rates and water charges. More and more businesses are expected to use this fast, safe and convenient means of receiving and making payment to enhance operational efficiency.

In the banking sector, significant progress was seen in applying fintech to their banking services and business operations. According to a study conducted by the HKMA, almost 90% of the surveyed retail banks have adopted, or are planning to adopt, artificial intelligence in their business applications. With the HKMA's facilitation, banks have been applying big data and consumer behavioural analytics in their personal credit products. They have also launched over 800 Open Application Programming Interfaces in the first two phases, covering a range of banking products and services. While encouraging banks to use fintech, we did not lose sight of the need for enhanced technology risk management and consumer protection in digital banking services. Timely supervisory guidance has been provided to banks in these areas.

Regulatory technology (Regtech) is another area of great interest to banks, for its potential of enabling banks to conduct regulatory compliance and risk management, particularly in anti-money laundering and counter-financing of terrorism (AML/CFT), more efficiently and cost-effectively. To facilitate greater industry adoption of Regtech and the building of a wider Regtech ecosystem, the HKMA organised the inaugural AML/CFT Regtech Forum and issued its first Regtech newsletter in November to discuss possible use cases of Regtech. At the same time, the HKMA, as a banking supervisor, is exploring the use of supervisory technology (Suptech), including new data science and analytics, to enhance work effectiveness and efficiency. We have embarked on a series of studies and developed a road map for the implementation of Suptech in the next few years.

From a broader perspective, this is only the start of the fintech journey in the banking sector. The HKMA granted eight licences to virtual banks during the year. One of the virtual banks officially launched its services in March 2020, while some other virtual banks have commenced pilot trials through the HKMA's Fintech Supervisory Sandbox. I look forward to the launch of the other virtual banks and the introduction of more innovative and diversified banking services to the people of Hong Kong that would help raise the global competitiveness of our banking sector.

Chief Executive's Statement

More exciting developments are also expected at the international level. After successfully completing a Proof-of-Concept (PoC) trial to connect our blockchain-based trade finance platform, eTradeConnect, with its European counterpart, we are conducting another PoC trial with the platform of the People's Bank of China, paving the way for the digitalisation of cross-border trades. We have begun a joint research project with the Bank of Thailand to study the application of Central Bank Digital Currency to cross-border payments. The Bank for International Settlements also put its first Innovation Hub Centre into operation in Hong Kong in November to foster fintech collaboration within the central banking community. All these developments present clear evidence of Hong Kong's leading global position in fintech development.

Promoting green and sustainable finance for a better future

Climate-related risks have drawn increasing global attention in recent years. To contribute to the global efforts in addressing this challenge, the HKMA unveiled three key measures in May to promote green finance development in Hong Kong in different capacities.

As a banking supervisor, the HKMA is undertaking a three-phased approach to promoting green and sustainable banking. A framework for assessing the "greenness" of banks has been developed for industry consultation under Phase I, paving the way for the formulation of supervisory expectations and requirements for the banking industry under Phase II and implementation under Phase III.

As the manager of the Exchange Fund, the HKMA actively advances responsible investment by integrating environmental, social and governance (ESG) factors into its investment activities. Specifically, we have adopted the principle of giving priority to green and ESG investments if their long-term return is comparable to other investments on a risk-adjusted basis. After venturing into the green bond market in 2015 as one of the early investors, we will continue to grow our green bond portfolio and invest in other ESG assets. We will also join hands with like-minded investors and regulators to promote best practices on ESG through our participation in international organisations in the ESG community.

Other than addressing climate-related risks, green finance offers enormous opportunities for Hong Kong's financial markets, particularly in bond and project finance markets. As a market facilitator, the HKMA plays an active role in promoting Hong Kong as a major global hub for green finance. In May, we assisted the Government in issuing an award-winning green bond under the Government Green Bond Programme, setting an important new benchmark for potential green bond issuers in Hong Kong and the region. We have also established the Centre for Green Finance under the HKMA Infrastructure Financing Facilitation Office with the mission of promoting capacity building and experience sharing in green finance.

Over and above all these actions, we are conscious of our vital role in supporting and enabling the sustainable development of society as a whole. I am pleased to present a new dedicated chapter on corporate social responsibility in this year's *Annual Report*, setting out our strategy and major initiatives in promoting a sustainable and environment-friendly marketplace, supporting the wider community, protecting the environment, and nurturing a caring workplace.

Consolidating our unique role as dominant gateway to Mainland China

Since 2014, a number of unique cross-border investment channels have been established, including Mutual Recognition of Funds, Stock Connect and Bond Connect. Over the years, both Bond Connect and Stock Connect have been enhanced, providing more convenience and flexibility for international investors to invest in onshore securities on the Mainland. Currently, the two Connect schemes handle over 60% of the onshore trading of Mainland bonds and stocks, respectively, by international investors, underscoring Hong Kong's unique value as the conduit between Mainland China and the rest of the world. Through Hong Kong's platform, international investors can get the best of both worlds: grasping opportunities in Mainland China while continuing to use the legal and regulatory framework, market practices and languages to which they are accustomed.

Chief Executive's Statement

During the year, a major policy breakthrough was secured in establishing Wealth Management Connect, which will mark yet another milestone in mutual financial market access between Hong Kong and the Mainland and reinforce Hong Kong's position as the leading global hub for offshore renminbi business. We are working closely with the Mainland authorities to formulate the implementation details with a view to launching it as soon as possible.

At the same time, good progress has been achieved in rolling out financial facilitation measures to support the development of the Guangdong-Hong Kong-Macau Greater Bay Area. The usage of Hong Kong e-wallets in the Mainland has expanded to cover some 800,000 merchants. Hong Kong residents are also allowed to open personal Mainland bank accounts remotely. We will seize every opportunity to gain more policy headroom for the introduction of further financial facilitation measures, particularly for corporates and financial institutions, as well as the enhancement of existing measures.

Upgrading soft power to enhance long-term competitiveness

Talent is crucial to the sustainable and sound development of an international financial centre. After months of preparation, the Hong Kong Academy of Finance (AoF) was established in June with the mission of promoting financial leadership and monetary and financial research. Over 160 senior executives from financial institutions, professional firms, academia and regulatory bodies are now AoF members. The AoF has held a number of talks under its leadership development programme and initiated four applied research projects within the first six months of operation.

Fintech is a major focus of talent development. The Fintech Career Accelerator Scheme 2.0, which includes providing internship opportunities as well as regulatory and technology training to students in collaboration with strategic partners, benefitted over 220 students during the year. We also launched the Fin+Tech Collaboration Platform jointly with the Hong Kong Science and Technology Parks in November. It will provide a useful platform for organising fintech-related activities such as accelerators and hackathons to explore innovative solutions, identify talent and seek collaboration opportunities.

The HKMA itself is also introducing new technologies and applying new data science and analytics. We will be upgrading our skill sets and capabilities alongside the industry.

Exchange Fund: safeguarding the wealth of Hong Kong people

Benefitting from the strong performance of the global stock and bond markets, the Exchange Fund achieved the second highest investment income on record of HK\$262.2 billion during the year, representing an investment return of 6.6%. In particular, the Long-Term Growth Portfolio posted a decent annualised internal rate of return of 12.6% since inception. Such achievements are not easy, having regard to the need to preserve good credit quality, liquidity and defensiveness for the Exchange Fund to enhance its resilience to market shocks and to fulfil its statutory purposes.

In March 2020, global stock markets experienced extreme volatilities and wild roller-coaster rides, with US and European stock indices suffering the worst fall since the 1987 market crash on growing fears over the spread of COVID-19. In the face of the ever-changing global financial landscape, we will continue to manage the Exchange Fund in a prudent and agile manner, and adhere to the established principle of "Capital Preservation First, Long-Term Growth Next" to safeguard and grow the wealth of Hong Kong people.

Chief Executive's Statement

Serving the public interest with professionalism and dedication

These are extraordinary times for Hong Kong. Every one of us must stay calm and vigilant. I have every confidence that together, we can ride out the present challenges, as we have done in numerous crises over the past decades. Our buffers are strong. Our fundamentals are intact. Our strengths are well-entrenched. The HKMA's capability, resources and determination to maintain Hong Kong's monetary and financial stability are beyond doubt.

This is my first statement after assuming office as the Chief Executive of the HKMA. While the path ahead may be filled with challenges, it has always been my firm belief that every challenge we face is also an opportunity. My colleagues and I, as a team, will continue to serve the people of Hong Kong with professionalism and dedication, and put our best foot forward to maintain monetary and financial stability while strengthening Hong Kong's status as an international financial centre.



Eddie Yue

Chief Executive

Highlights of 2019



Economic and Financial Environment

The Hong Kong economy softens in 2019 amid global economic slowdown, lingering US-China trade tensions and local social incidents, while the labour market faces increasing pressures.

The Hong Kong banking sector remains sound and resilient, with strong capital positions, robust liquidity and healthy asset quality.



Monetary Stability

Despite the challenging external and internal environment, Hong Kong's monetary system is firmly intact, as evidenced by the stable Hong Kong dollar exchange rate and the smooth functioning of the foreign exchange and money markets. This reflects not only the robustness of but also strong confidence in Hong Kong's monetary system.

A new Resolution Facility is introduced and a number of refinements are made within the HKMA's updated Liquidity Facilities Framework.



Banking Stability

The HKMA puts great effort in monitoring the credit and liquidity risk management of banks to maintain banking stability. Good progress is also made on promoting smart banking, including the granting of eight virtual bank licences and encouraging the adoption of regulatory technology. These efforts are complemented by strengthened supervision of banks' technology risk management and enhanced consumer protection in digital financial services.

The HKMA streamlines investor protection measures to enhance customer experience while taking further steps to promote a customer-centric bank culture.

Hong Kong's anti-money laundering and counter-financing of terrorism regime earns positive assessment from the Financial Action Task Force (FATF), making it the first FATF-member jurisdiction in the Asia-Pacific region to achieve an overall compliant result in FATF's fourth-round Mutual Evaluation.

New rules and regulations are rolled out to enhance the banking regulatory regime in line with the latest international standards. A three-phased approach is announced to promote green and sustainable banking in Hong Kong, contributing to global efforts in addressing climate change.

At the same time, the HKMA makes significant progress in operationalising the resolution regime for banks, in particular driving the build-up of a new layer of loss-absorbing capacity at domestic systemically important banks to promote financial stability.

Highlights of 2019



International Financial Centre

The fintech ecosystem in Hong Kong is gaining strong momentum, with good progress in the implementation of the Open Application Programming Interface Framework in the banking sector, establishment of the world's first Bank for International Settlements Innovation Hub Centre, and continued increase in the use of the Faster Payment System for e-payments.

Hong Kong maintains a firm foothold as the global hub for offshore renminbi business. In the context of the Guangdong-Hong Kong-Macao Greater Bay Area development, financial connectivity with the Mainland is being enhanced, and access to financial services by Hong Kong residents is made more convenient.

Much effort is made to open up new opportunities to further enhance the competitiveness of Hong Kong's financial platform, particularly in infrastructure investment and financing, green finance and private equity funds.

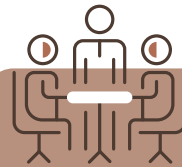
The Hong Kong Academy of Finance is set up to serve as a centre of excellence for developing financial leadership and a repository of knowledge in monetary and financial research, including applied research.



Reserves Management

Benefiting from a favourable investment environment, the Exchange Fund achieves the second highest investment income on record, of HK\$262.2 billion, representing an investment return of 6.6%.

The HKMA deepens its effort in investment diversification, especially into the Long-Term Growth Portfolio (LTGP). The LTGP records an annualised internal rate of return of 12.6% since its inception in 2009. There is also encouraging progress in advancing responsible investment.



Corporate Functions

The HKMA maintains effective communication with the community and the market through traditional and social media, website, Information Centre and various other channels to facilitate public understanding of its policies and operations.

Within the institution, the HKMA attaches great importance to upholding corporate governance by supporting professional development of staff, instituting rigorous financial discipline and enhancing IT security to cope with challenges arising from the implementation of new initiatives and the increasing complexity of work.

Highlights of 2019

KEY FIGURES FOR 2019



Monetary Stability

HKD exchange rate*

7.787 per USD

Base Rate*

2.49 %

Backing Ratio*

111.2 %

Monetary Base*

HK\$ 1,662.9
billion

Aggregate Balance*
(before Discount Window)

HK\$ 54.3
billion

Banking Stability



Total assets*

HK\$ 24.5 trillion

Capital adequacy ratio*

20.7 %

Loan growth#

6.7 %

Liquidity Coverage Ratio (Q4 2019)

159.9 %

Liquidity Maintenance Ratio (Q4 2019)

56.3 %

Authorized institutions*

164
licensed banks

Classified loan ratio (retail banks)*

0.48 %

Loan-to-deposit ratio*

75.3 %

Average LTV ratio for new RMLs (Dec 2019)

53 %

Average DSR for new RMLs (Dec 2019)

36 %

17
restricted licence banks

G-SIBs for which the Monetary Authority is the lead resolution authority*

26

13
deposit-taking companies

Sources: SWIFT, Bank for International Settlements and HKMA.

* Figures as at the end of 2019.

Figures for the year of 2019 as a whole.

CMU – Central Moneymarkets Unit

CPI – Consumer Price Index

DSR – Debt servicing ratio

EF – Exchange Fund

FPS – Faster Payment System

FX – Foreign exchange

HKD – Hong Kong dollar

G-SIBs – Global systemically important banks

IFFO – Infrastructure Financing Facilitation Office

LTGP – Long-Term Growth Portfolio

LTV – Loan-to-value

RMB – Renminbi

RMLs – Residential mortgage loans

RTGS – Real Time Gross Settlement

SVF – Stored value facility

USD – US dollar

Highlights of 2019

International
Financial Centre

RMB deposits*

largest offshore RMB
liquidity poolRMB **658.0**
billion

Availability of four RTGS systems and CMU#

**100%**

Hong Kong's share of RMB payments globally#



in the world

> **70%**

RMB RTGS average daily turnover#

RMB **1,133.9**
billion

Daily turnover of RMB FX transactions (Apr 2019)

in offshore RMB
FX marketsUS\$ **107.6**
billion
equivalent

HKD RTGS average daily turnover#

HK\$ **987.0**
billion

Dim sum bonds outstanding*



in the world

RMB **168.6**
billion

FPS registrations*

4 millionVolume of FPS transactions
(up to end-2019 since
inception)**44** millionBond Connect
investors***1,601**

IFFO partners*

**95**

SVF accounts*

63.1
million

(↑ 12.5% yoy)

Value of SVF transactions#

HK\$ **201.6**
billion

(↑ 16.6% yoy)

Reserves
ManagementEF investment
income#HK\$ **262.2**
billionEF investment
return#**6.6%**EF compounded
annual investment
return (since 1994)**4.8%**(>2.1% increase in HK composite
CPI over the same period)

EF assets*

HK\$ **4,206.7**
billionMarket value
of LTGP
investments*HK\$ **335.1**
billionLTGP annualised
internal rate of
return (since 2009)**12.6%**

Calendar of Events 2019

MONETARY STABILITY

26
Aug

The HKMA completes a review of its framework for the provision of Hong Kong dollar liquidity to banks and launches an updated Liquidity Facilities Framework, including the introduction of a new Resolution Facility.

13
Dec

The Treasury Markets Association (TMA) publishes the conclusion of an industry consultation on some technical refinements to Hong Kong Dollar Overnight Index Average, which has been identified as the alternative reference rate to the Hong Kong Interbank Offered Rate.

BANKING

25
Jan

The HKMA together with the Hong Kong Association of Banks (HKAB) introduces new handling procedures for following up mis-transfer of funds made by customers.

27
Mar

The HKMA grants three virtual banking licences. Five more licences are granted in April to May, bringing the number of licensed banks in Hong Kong to 160.

1
Apr



The HKMA and the HKAB jointly organise a seminar entitled "Use of Personal Data in the Digital Era".

12
Apr

The HKMA announces the introduction of simple bank accounts by banks which offer a narrower set of banking services whilst requiring less extensive customer due diligence measures, to cater for the needs of small and medium-sized enterprises (SMEs) and start-up companies.

7
May

The HKMA announces a three-phased approach to promoting green and sustainable banking in Hong Kong.

28
Jun

The Banking (Liquidity) (Amendment) Rules 2019 are gazetted.

1
Jul

The Banking (Exposure Limits) Rules and Banking (Exposure Limits) Code come into effect. Authorized institutions (AIs) are allowed a six-month grace period for the implementation of the limits on large exposures and connected party exposures.

Calendar of Events 2019

BANKING

19
Jul

The Insurance Authority announces the delegation of its inspection and investigation powers in relation to AIs to the Monetary Authority, which takes effect on 23 September. The two regulators also enter into a new Memorandum of Understanding (MoU) to strengthen cooperation.

3
Sep

The HKMA signs an MoU with the Securities and Futures Commission (SFC) to further enhance the cooperative oversight arrangement on financial market infrastructures.

4
Sep

Financial Action Task Force (FATF) and Asia/Pacific Group on Money Laundering publish the Mutual Evaluation Report on Hong Kong's anti-money laundering and counter-financing of terrorism (AML/CFT) regime. Hong Kong's AML/CFT regime is assessed to be compliant and effective overall, making it the first FATF-member jurisdiction in the Asia-Pacific region to have achieved an overall compliant result in the current round of evaluation.

4
Sep

HKMC Insurance Limited (HKMCI), a wholly-owned subsidiary of the Hong Kong Mortgage Corporation Limited (HKMC), introduces a new relief measure for the 80% Guarantee Product of the SME Financing Guarantee Scheme (SFGS), enabling SME borrowers to apply for principal moratorium.

12
Sep

The HKMA and the HKAB announce the extension of online retrieval period of e-Statements for individual retail customers to a minimum of seven years.

25
Sep

The HKMA completes a holistic review and introduces streamlined investor protection measures to enhance customer experience whilst according protection to customers.

26
Sep

The HKMA grants three new banking licences, and approves the upgrading of a restricted banking licence to banking licence, increasing the number of licensed banks in Hong Kong to 164.

14
Oct

The HKMA announces that the Countercyclical Capital Buffer for Hong Kong is reduced from 2.5% to 2.0% with immediate effect.

16
Oct

The Banking Sector SME Lending Coordination Mechanism established by the HKMA holds the first meeting, at which the banks agree to adopt a number of measures to support SMEs.

16
Oct

HKMCI announces enhancements made to the Mortgage Insurance Programme for completed residential properties, in order to provide assistance to homebuyers with immediate housing needs.

Calendar of Events 2019

BANKING

29
Oct

The HKMA provides guidance to banks on consumer protection measures in respect of Open Application Programming Interface (Open API) Framework.

1
Nov

The HKMA publishes high-level principles on the use of artificial intelligence applications by the banking industry.

5
Nov

The HKMA publishes guiding principles on consumer protection in respect of banks' use of big data analytics and artificial intelligence.

12
Nov

The HKMA issues an inaugural regulatory technology (Regtech) newsletter to share with the banking industry noteworthy use cases of Regtech.

22
Nov



The HKMA hosts the first AML/CFT Regtech Forum fostering the use of innovative technology to enhance the efficiency of both banks and the wider AML/CFT ecosystem.

16
Dec

The HKMA issues guidance to the banking industry and stored value facility (SVF) sector on managing money laundering and terrorist financing risks associated with virtual assets and their service providers.

16
Dec

HKMCI announces that the 90% Guarantee Product under the SFGS starts receiving applications, which aims to provide additional support to smaller-sized enterprises, businesses with relatively less operating experience, as well as professionals seeking to set up their own practices, to obtain financing.

Calendar of Events 2019

INTERNATIONAL FINANCIAL CENTRE

9
Jan



The HKMA holds a high-level Fintech Roundtable titled "From Mutual Understanding to Global Collaboration".

13-15
Jan

The HKMA, the Research Bureau of the People's Bank of China and the Hong Kong Green Finance Association co-organise the "Green Finance in Action" Hong Kong study tour.

16
Jan



The HKMA and Paris EUROPLACE co-host the Hong Kong–Paris Financial Seminar in Hong Kong.

17
Jan

Additional electronic trading platform is made available under Bond Connect.

31
Jan

In accordance with the Open API Framework published by the HKMA, 20 retail banks launch Phase I Open APIs as scheduled. Over 500 Open APIs are launched, covering information of deposits, loans, insurance, investments, and other banking products and services.

31
Jan

The HKMA, together with an international group of financial regulators and related organisations, formally launches the Global Financial Innovation Network. A pilot is launched for firms wishing to test innovative products, services or business models across more than one jurisdiction.

20
Mar

To facilitate Hong Kong residents' access to financial services in the Greater Bay Area, the HKMA collaborates with the Mainland authorities to launch a pilot scheme to enable Hong Kong residents to open Mainland personal bank accounts through Hong Kong bank branches by attestation.

26
Mar



The HKMA Infrastructure Financing Facilitation Office (IFFO) and the Insurance Authority co-organise a seminar on the strategic roles of insurance and guarantee in project risk management.

Calendar of Events 2019

INTERNATIONAL FINANCIAL CENTRE

1
Apr

A new tax regime to exempt profits tax of onshore and offshore private funds, developed by the HKMA and relevant policy bureaux/departments, takes effect.

12
Apr

The HKMA signs an MoU with the International Finance Corporation (IFC), a member of the World Bank Group, to co-organise IFC's Sixth Annual Climate Business Forum in Hong Kong in 2020.

24
Apr



IFFO and China Export & Credit Insurance Corporation sign an MoU with respect to establishing a strategic framework of cooperation to facilitate the financing and investments of infrastructure projects via the IFFO platform.

26
Apr

The HKMA and the SFC publish a joint consultation on further enhancements to the over-the-counter derivatives regulatory regime.

6
May



IFFO and the IFC co-organise a seminar on "ESG & Impact Investing: Creating Long-Term Value".

7
May

The HKMA and the HM Treasury of the UK co-chair the Eighth London–Hong Kong Financial Services Forum in London to discuss opportunities arising from renminbi internationalisation, opening up of the Mainland capital markets, Greater Bay Area, Belt and Road Initiative, green finance and fintech.

7
May

The HKMA announces the establishment of the Centre for Green Finance (CGF) under the IFFO as part of its efforts to promote green finance development in Hong Kong.

10
May

The HKMA grants two SVF licences, bringing the total number of SVF licensees to 18.

Calendar of Events 2019

INTERNATIONAL FINANCIAL CENTRE

12
May



The HKMA and the Bank of Thailand enter into an MoU to foster collaboration between the two authorities in promoting financial innovation and embark on a joint research project on Central Bank Digital Currency.

22
May

The Government's inaugural green bond under the Government Green Bond Programme, with an issuance size of US\$1 billion and a tenor of 5 years, is well received by the global investment and green community, attracting orders exceeding US\$4 billion.

21
Jun

The HKMA issues guidance on enhancements to the currency conversion arrangement under the Northbound trading of Shanghai–Hong Kong Stock Connect and Shenzhen–Hong Kong Stock Connect, affording international investors access to onshore renminbi liquidity and related risk management tools.

26
Jun



The Hong Kong Academy of Finance is officially inaugurated and conducts its first Fellowship Conferment.

5
Jul

The HKMA and the French supervisory authority, Autorité de Contrôle Prudentiel et de Résolution, sign an MoU to enhance fintech collaboration between the two authorities.

9–10
Jul



The HKMA and the State-owned Assets Supervision and Administration Commission of the State Council co-organise the second "Connecting Belt & Road, Capturing Opportunities Together" High-level Roundtable.

23
Aug

T+3 settlement cycle is introduced to Bond Connect.

Calendar of Events 2019

INTERNATIONAL FINANCIAL CENTRE

11
Sep

IFFO hosts a panel discussion on “Sustainable Finance in Infrastructure” at the fourth Belt and Road Summit.

16
Sep



The Treasury Markets Summit 2019 is jointly organised by the HKMA and the TMA in Hong Kong.

18
Sep



The Bank for International Settlements (BIS) and the HKMA sign an Operational Agreement to officially mark the cooperation on the BIS Innovation Hub Hong Kong Centre, which commences operation on 1 November.

10–11
Oct



The CGF under IFFO and the IFC co-organise a seminar titled “Greening Financial Institutions”.

31
Oct

More than 300 Phase II Open APIs are launched by banks, covering deposits, loans, insurance, and investments to support applications for banking products and services.

1
Nov

The Inland Revenue Department, the Rating and Valuation Department and the Water Supplies Department start accepting bill payments via the Faster Payment System by the public.

Calendar of Events 2019

INTERNATIONAL FINANCIAL CENTRE

6
Nov



The HKMA co-organises the city's flagship fintech event — Hong Kong Fintech Week 2019 — with InvestHK, attracting more than 12,000 participants from over 60 economies to the five-day programme.

6
Nov



An MoU is signed between the operators of eTradeConnect (a blockchain-based trade finance platform launched under the facilitation of the HKMA) and the People's Bank of China Trade Finance Platform to conduct a Proof-of-Concept on connecting the two platforms.

6
Nov

The HKMA launches the Fin+Tech Collaboration Platform jointly with the Hong Kong Science and Technology Parks to support fintech development in a technology-centric approach.

6
Nov

The Leading Group for the Development of the Guangdong–Hong Kong–Macao Greater Bay Area announces to explore the establishment of a cross-boundary wealth management connect scheme between Hong Kong and the Mainland, among other financial initiatives.

12
Nov

The HKMA and the Swiss State Secretariat for International Financial Matters hold the third Hong Kong–Switzerland Financial Dialogue in Bern, Switzerland, to discuss latest developments of green finance and fintech, and opportunities arising from Mainland's financial opening up, including the Greater Bay Area.

23
Dec

The HKMA publishes a report titled "Reshaping Banking with Artificial Intelligence" as part of a series of publications on the application of artificial intelligence technology in the Hong Kong banking industry.

30
Dec

The International Monetary Fund issues the Staff Report for the 2019 Article IV Consultation with the Hong Kong Special Administrative Region, commending Hong Kong's robust policy frameworks and ample buffers to address cyclical and structural challenges, and reaffirming its support for the Linked Exchange Rate System.

Calendar of Events 2019

RESERVES MANAGEMENT

7
May

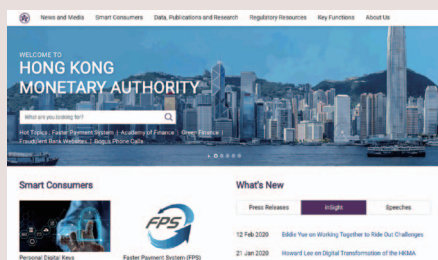
The HKMA announces measures to support Responsible Investment as the manager of the Exchange Fund.

CORPORATE FUNCTIONS

25
Mar

An additional 20 sets of financial data published on the HKMA's website are made available via Open API for free use by the public.

9
Sep



The HKMA launches its revamped official website to enhance user experience and facilitate easy and convenient search by users based on their own preferences.

10
Sep



The HKMA launches its official Instagram channel, on top of Facebook and LinkedIn, to further enhance communication with members of the public.

Calendar of Events 2019

CORPORATE FUNCTIONS

14
Oct



The re-opening of the refurbished Historical Timeline to the public marks the completion of the HKMA Information Centre's revamp project.

29
Nov



The HKMA launches its official Twitter account to further connect with members of the public through social media.



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

THE 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 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 bank.

The Payment Systems and Stored Value Facilities Ordinance provides a statutory regime for the Monetary Authority to designate and oversee clearing and settlement systems that are material to the monetary or financial stability of Hong Kong or to the functioning of Hong Kong as an international financial centre. It also empowers the Monetary Authority to administer a licensing regime for stored value facilities, and to designate retail payment systems and oversee that their operations are safe and efficient.

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. He 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.

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 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 put 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 control, risk management and governance 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 2019 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.

Advisory Committees

Chairman

1 March 2020



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

Members



Mr Eddie YUE, JP
The Monetary Authority
(from 1 October 2019)



Mr Norman T.L. CHAN, GBS, JP
The Monetary Authority
(until 30 September 2019)



Mr Benjamin HUNG Pi-cheng, BBS, JP
Regional Chief Executive Officer, Greater China & North Asia
Chief Executive Officer, Retail Banking & Wealth Management
Standard Chartered Bank



Mr Peter WONG Tung-shun, JP
Deputy Chairman and Chief Executive
The Hongkong and Shanghai Banking Corporation Limited



Dr David WONG Yau-kar, GBS, JP
Chairman
Mandatory Provident Fund Schemes Authority



Mr Nicky LO Kar-chun, SBS, JP

Advisory Committees



Dr Silas YANG Siu-shun, JP



Dr Anthony CHOW Wing-kin, SBS, JP
Consultant
Guantao & Chow Solicitors and Notaries



Dr the Honourable Moses CHENG Mo-chi, GBM, GBS, JP
Chairman
Insurance Authority



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



Mr GAO Yingxin, JP
Vice Chairman and Chief Executive
Bank of China (Hong Kong) Limited



Ms Irene LEE Yun-lien
Chairman
Hysan Development Company Limited

Advisory Committees



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



Mr Stephen YIU Kin-wah



Mr Tim LUI Tim-leung, SBS, JP
Chairman
Securities and Futures Commission
(from 1 July 2019)



Mrs Ayesha MACPHERSON LAU, JP
Managing Partner, Hong Kong
KPMG China
(from 1 October 2019)



Professor Lawrence J. LAU, GBS, JP
Ralph and Claire Landau Professor of Economics
The Chinese University of Hong Kong
(until 30 September 2019)



Mr T. Brian STEVENSON, GBS, JP
(until 31 January 2020)



Mr Carlson TONG, GBS, JP
Chairman
University Grants Committee
(until 29 February 2020)

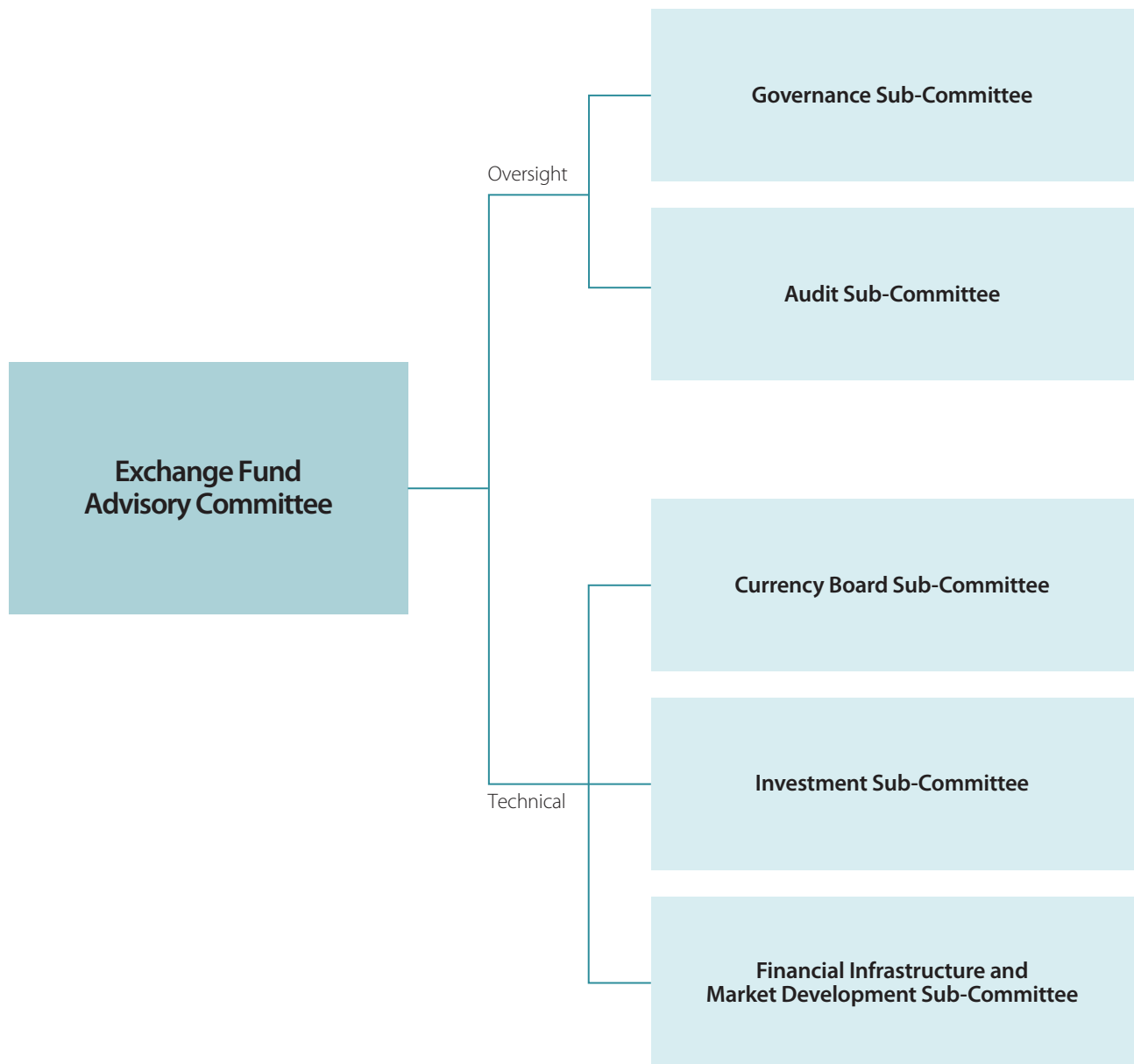
Secretary

Ms Carrie CHAN

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 the Exchange Fund Advisory Committee on remuneration and human resources policies, and on budgetary, administrative and governance issues. The Sub-Committee met five times in 2019 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
(from 1 October 2019)

Professor Lawrence J. LAU, GBS, JP
Ralph and Claire Landau Professor of Economics
The Chinese University of Hong Kong
(until 30 September 2019)

Members

Dr David WONG Yau-kar, GBS, JP
Chairman
Mandatory Provident Fund Schemes Authority

Dr Anthony CHOW Wing-kin, SBS, JP
Consultant
Guantao & Chow Solicitors and Notaries

Dr the Honourable Moses CHENG Mo-chi, GBM, GBS, JP
Chairman
Insurance Authority

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

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

Ms Agnes CHAN Sui-ken
Managing Partner, Hong Kong and Macau
Ernst & Young

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

Mr Stephen YIU Kin-wah

Mr Tim LUI Tim-leung, SBS, JP
Chairman
Securities and Futures Commission
(from 1 July 2019)

Mrs Ayesha MACPHERSON LAU, JP
Managing Partner, Hong Kong
KPMG China
(from 1 October 2019)

Mr Carlson TONG, GBS, JP
Chairman
University Grants Committee
(until 21 February 2019)

Mr T. Brian STEVENSON, GBS, JP
(until 31 January 2020)

Secretary

Ms Carrie CHAN

Advisory Committees

Terms of reference

- (1) To monitor the performance of the HKMA in carrying out its functions and responsibilities and in its use of resources, and to formulate recommendations to the Financial Secretary through the Exchange Fund Advisory Committee on
 - (a) the remuneration and human resources policies of the HKMA;
 - (b) the remuneration for HKMA staff, taking account of the Sub-Committee's assessment of the quality and effectiveness of the HKMA's work; and
 - (c) the use of resources of the HKMA, including its annual administrative budget.
- (2) To consider recommendations and provide advice to the Financial Secretary on the appointment and dismissal of staff at the level of Executive Director and above.
- (3) To keep under review the governance arrangements for the HKMA and to make recommendations to the Financial Secretary through the Exchange Fund Advisory Committee as appropriate.

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 2019 and received reports on the work of the Risk Committee and the Internal Audit Division.

Chairman

Mr Stephen YIU Kin-wah
(from 22 February 2019)

Mr Carlson TONG, GBS, JP
Chairman
University Grants Committee
(until 21 February 2019)

Members

Dr Silas YANG Siu-shun, JP

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 Tim LUI Tim-leung, SBS, JP
Chairman
Securities and Futures Commission
(from 1 July 2019)

Mr T. Brian STEVENSON, GBS, JP
(until 31 January 2020)

Mr Carlson TONG, GBS, JP
Chairman
University Grants Committee
(until 29 February 2020)

Secretary

Ms Carrie CHAN

Advisory Committees

Terms of reference

- (1) The objectives of the Audit Sub-Committee are as follows:
 - (a) to help Members of the Exchange Fund Advisory Committee to discharge their responsibilities for ensuring the proper and smooth running of the HKMA operations and management of the Exchange Fund;
 - (b) to consider any matters relating to the financial affairs of the HKMA and the internal and external audit of the HKMA's financial statements as the Sub-Committee may think necessary or desirable;
 - (c) to encourage higher quality accounting and audit and provide more credible and objective financial reporting of the HKMA; and
 - (d) to consider any other matters referred to it by the Exchange Fund Advisory Committee; and to report on all such matters to the Committee.
- (2) The functions of the Sub-Committee include, but are not restricted to, the following:
 - (a) reviewing the HKMA's financial statements, the composition and accounting principles adopted in such statements, whether these are intended to be audited or published or not;
 - (b) advising on the form and content of the financial statements of the HKMA;
 - (c) examining and reviewing with both the external and internal auditors the scope and results of their audits;
 - (d) reviewing the findings, recommendations or criticisms of the auditors, including their annual management letter and management's response;
 - (e) reviewing the HKMA's management procedures to ensure the effectiveness of internal systems of accounting and control, and management's efforts to correct deficiencies discovered in audits; and
 - (f) initiating investigations or audit reviews into any activities of the HKMA which may be of concern or interest to the Sub-Committee.
- (3) Authority

The Sub-Committee shall be entitled to obtain any information it requires from any member or employee of the HKMA, and all such members and employees shall be instructed to assist the Sub-Committee to the fullest extent possible. The Sub-Committee may also take such independent legal or other professional advice as it considers necessary. The Sub-Committee shall have no executive powers as regards its findings and recommendations.
- (4) Meetings

The Sub-Committee shall meet at least twice a year. The Secretary to the Exchange Fund Advisory Committee shall attend its meetings and take minutes, copies of which shall be circulated to the Committee. The Chief Executive of the HKMA shall be entitled to attend the Sub-Committee's meetings. In all other respects, the Sub-Committee shall decide its own procedures.

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 2019, the Sub-Committee met four times.

Chairman

Mr Eddie YUE, JP
The Monetary Authority
(from 1 October 2019)

Mr Norman T.L. CHAN, GBS, JP
The Monetary Authority
(until 30 September 2019)

Members

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

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

Mr Edmond LAU
Senior Executive Director
Hong Kong Monetary Authority
(from 1 October 2019)

Dr John GREENWOOD
Group Chief Economist
Invesco Asset Management Limited

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

Dr David WONG Yau-kar, GBS, JP
Chairman
Mandatory Provident Fund Schemes Authority

Dr PENG Wensheng
Chief Economist
Everbright Securities Company Limited

Professor CHEUNG Yin-wong
Hung Hing Ying Chair Professor of International Economics
Department of Economics and Finance
City 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

Mrs Helen CHAN, SBS, JP

Mr GAO Yingxin, JP
Chairperson
The Hong Kong Association of Banks
(from 1 January 2020)

Ms Mary HUEN Wai-yi
Chairperson
The Hong Kong Association of Banks
(until 31 December 2019)

Secretary

Ms Carrie CHAN

Advisory Committees

Terms of reference

- (1) To ensure that the operation of the Currency Board arrangements in Hong Kong is in accordance with the policies determined by the Financial Secretary in consultation with the Exchange Fund Advisory Committee.
- (2) To report to the Financial Secretary through the Exchange Fund Advisory Committee on the operation of the Currency Board arrangements in Hong Kong.
- (3) To recommend, where appropriate, to the Financial Secretary through the Exchange Fund Advisory Committee, measures to enhance the robustness and effectiveness of the Currency Board arrangements in Hong Kong.
- (4) To ensure a high degree of transparency in the operation of the Currency Board arrangements in Hong Kong through the publication of relevant information on the operation of such arrangements.
- (5) To promote a better understanding of the Currency Board arrangements in Hong Kong.

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 2019.

Chairman

Mr Eddie YUE, JP
The Monetary Authority
(from 1 October 2019)

Mr Norman T.L. CHAN, GBS, JP
The Monetary Authority
(until 30 September 2019)

Members

Mr Howard LEE, JP
Deputy Chief Executive
Hong Kong Monetary Authority
(from 1 October 2019)

Dr Silas YANG Siu-shun, JP

Dr David WONG Yau-kar, GBS, JP
Chairman
Mandatory Provident Fund Schemes Authority

Mr Nicky LO Kar-chun, SBS, JP

Mr Stephen YIU Kin-wah

Dr Anthony CHOW Wing-kin, SBS, JP
Consultant
Guantao & Chow Solicitors and Notaries
(from 1 October 2019)

Professor Lawrence J. LAU, GBS, JP
Ralph and Claire Landau Professor of Economics
The Chinese University of Hong Kong
(until 30 September 2019)

Mr T. Brian STEVENSON, GBS, JP
(until 31 January 2020)

Secretary

Ms Carrie CHAN

Advisory Committees

Terms of reference

- (1) To monitor the investment management work of the HKMA.
- (2) To make recommendations to the Financial Secretary, through the Exchange Fund Advisory Committee, on
 - (a) the investment benchmark for the Exchange Fund;
 - (b) the investment policy and risk management of the Fund;
 - (c) the investment strategy for the Fund; and
 - (d) any other matters referred to the Sub-Committee in connection with the investment management of the Exchange Fund.

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 2019, the Sub-Committee met four times.

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Mr Eddie YUE, JP
The Monetary Authority
(from 1 October 2019)

Mr Norman T.L. CHAN, GBS, JP
The Monetary Authority
(until 30 September 2019)

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Deputy Chief Executive
Hong Kong Monetary Authority

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

Mr Edmond LAU
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Hong Kong Monetary Authority
(from 1 October 2019)

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The Chinese University of Hong Kong

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The Hong Kong Jockey Club

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Standard Chartered Bank (Hong Kong) Limited

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Bank of China (Hong Kong) Limited

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China Construction Bank (Asia) Corporation Limited

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Deputy President
Head of Global Wholesale Banking
OCBC Bank

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Temple Chambers

Mr CHEN Shuang, JP

Chief Executive Officer and President
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(from 8 July 2019)

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Insurance Authority
(from 1 February 2020)

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Head and Chief Executive UBS Hong Kong Branch
Group Managing Director
UBS

Mr Dennis CHOW Chi-in

Managing Partner
Deloitte China Southern Region

Ms Angel NG Yin-yee

Chief Executive Officer, Hong Kong and Macau
Citibank, N.A.
(from 1 July 2019)

Ms Diana CESAR

Group General Manager
Chief Executive, Hong Kong
The Hongkong and Shanghai Banking Corporation Limited
(from 1 January 2020)

Secretary

Ms Carrie CHAN

Terms of reference

- (1) To recommend to the Financial Secretary through the Exchange Fund Advisory Committee 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 –
 - (a) measures to promote the development, operational excellence, safety and efficiency of the financial infrastructure in Hong Kong, particularly payment and settlement arrangements;
 - (b) measures to promote the development of Hong Kong as an offshore renminbi centre;
 - (c) measures to foster the development of other enabling factors that would help enhance the competitiveness of Hong Kong's financial services; and
 - (d) initiatives for the HKMA, in discharging its responsibilities for maintaining the stability and integrity of the monetary and financial systems of Hong Kong, to promote the development of the financial infrastructure and financial markets in Hong Kong under (a) to (c) above.
- (2) To monitor the work of the HKMA in relation to the initiatives identified in (1) above.

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.

Chairman

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

Ex Officio Member

Mr Eddie YUE, JP
The Monetary Authority
(from 1 October 2019)

Mr Norman T.L. CHAN, GBS, JP
The Monetary Authority
(until 30 September 2019)

Members

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Secretary for Financial Services and the Treasury

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

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Group General Manager
Chief Executive, Hong Kong
The Hongkong and Shanghai Banking Corporation Limited
Representing The Hongkong and Shanghai Banking Corporation Limited

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

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Chairman
Securities and Futures Commission
Representing Securities and Futures Commission

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Corporate and Institutional Banking Asia Pacific
BNP Paribas

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Head of East Asia Administration Department
Mizuho Bank Limited
(from 20 September 2019)

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Executive Officer
Managing Director, Regional Head of Hong Kong
Head of Hong Kong Branch
MUFG Bank, Ltd
(until 29 June 2019)

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 the carrying on of a business of taking deposits by them. 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.

Chairman

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

Ex Officio Member

Mr Eddie YUE, JP
The Monetary Authority
(from 1 October 2019)

Mr Norman T.L. CHAN, GBS, JP
The Monetary Authority
(until 30 September 2019)

Members

The Honourable James H. LAU Jr., 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
(from 13 December 2019)

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Chief Executive
Consumer Council
Representing the Consumer Council

The Honourable Elizabeth QUAT, BBS, JP
Member
Legislative Council

Mr Vincent CHUI Yik-chiu
Chief Executive
Morgan Stanley Bank Asia Limited

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
Regional Managing Partner, Greater China
Member of The Global Executive
EY

Mr LEE Huat-oon
Acting Chairman
The DTC Association (The Hong Kong Association of
Restricted Licence Banks and Deposit-taking Companies)
Representing The DTC Association
(until 12 December 2019)

Secretary

Ms Jasmin FUNG

Chief Executive's Committee

16 March 2020

The Chief Executive's Committee comprises the Chief Executive of the HKMA, who chairs the Committee, the Deputy Chief Executives, the Senior Executive Directors and the Executive Directors of the HKMA. 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
(from 1 October 2019)
Deputy Chief Executive
(until 30 September 2019)



Norman T.L. CHAN, GBS, JP
Chief Executive
(until 30 September 2019)



Arthur YUEN, JP
Deputy Chief Executive



Howard LEE, JP
Deputy Chief Executive



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



Edmond LAU
Senior Executive Director
(from 1 October 2019)

Chief Executive's Committee



Stefan GANNON, JP
Commissioner, Resolution Office



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



Karen KEMP, JP
General Counsel



Carmen CHU, JP
Executive Director (Enforcement and AML)



Darryl CHAN, JP
Executive Director (External)
(from 1 August 2019)
Executive Director (Corporate Services)
(until 9 February 2020)



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)



Clement LAU, JP
Executive Director (Monetary Management)



Colin POU, JP
Executive Director (Financial Infrastructure)

Chief Executive's Committee



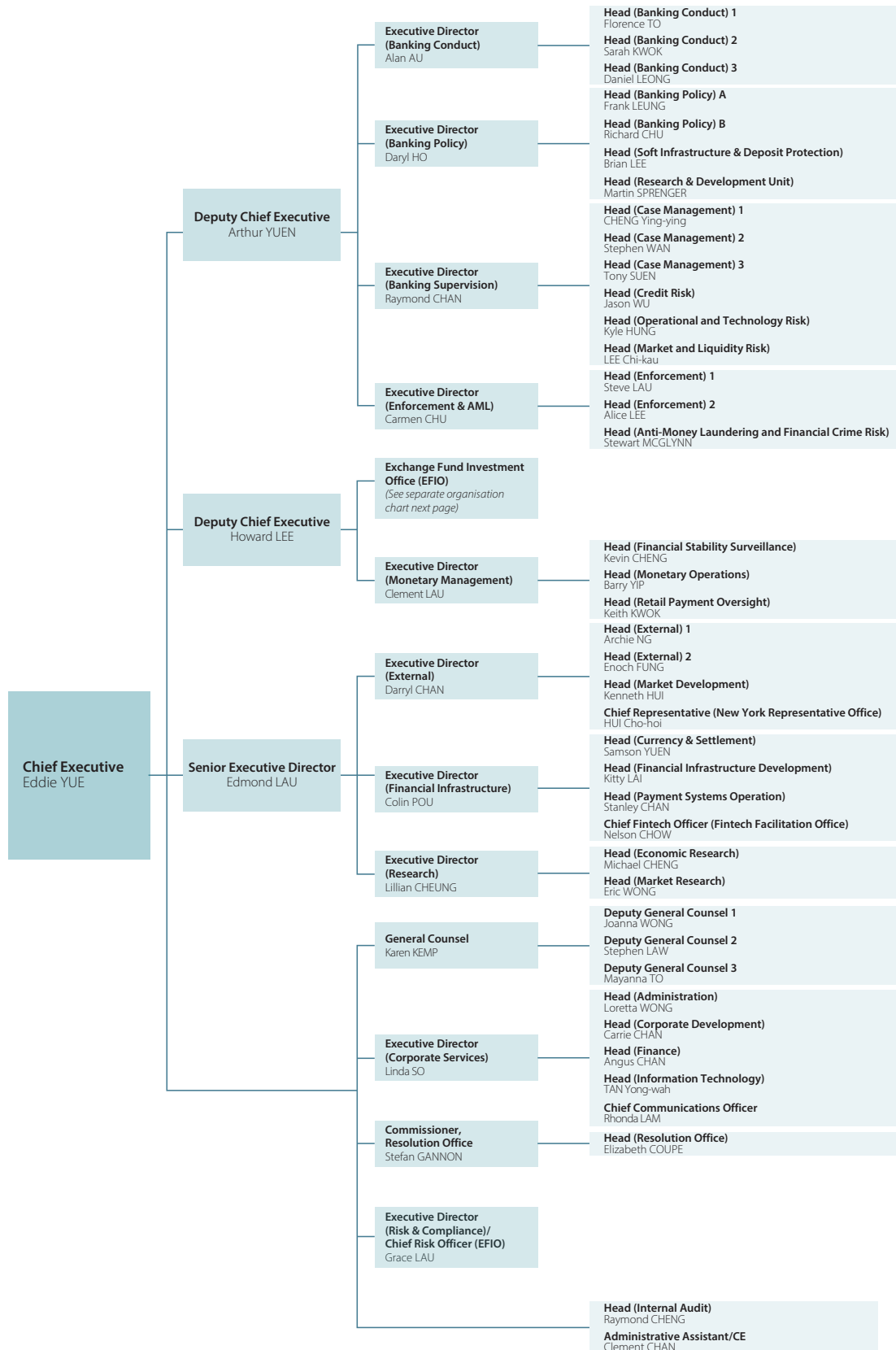
Linda SO
Executive Director (Corporate Services)
(from 10 February 2020)



Vincent LEE, JP
Executive Director (External)
(until 31 July 2019)

HKMA Organisation Chart

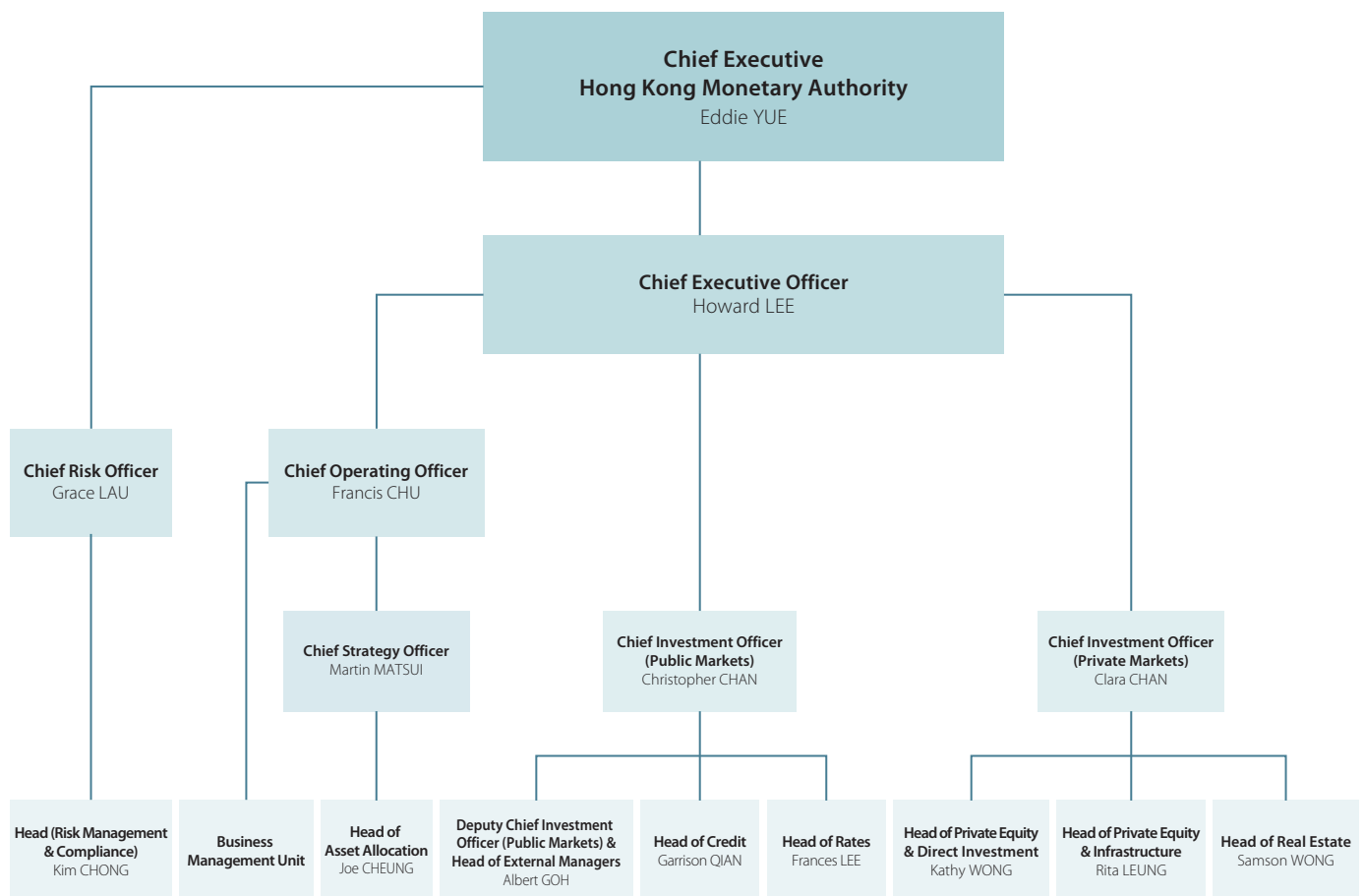
16 March 2020



HKMA Organisation Chart

HKMA EXCHANGE FUND INVESTMENT OFFICE (EFIO) ORGANISATION CHART

16 March 2020



Economic and Financial Environment



The Hong Kong economy contracted in 2019, reflecting global economic slowdown, lingering US-China trade conflicts and local social incidents. As economic conditions deteriorated rapidly in the second half of the year, the labour market faced increasing pressures. Inflation also increased due to a sharp rise in pork prices. Economic performance for 2020 is expected to remain challenging as the novel coronavirus outbreak hits the already weakening economy. Given the difficult economic environment, the Government and the HKMA have rolled out measures to support the economy, especially households and small and medium-sized enterprises.

Economic and Financial Environment

THE ECONOMY IN REVIEW

Real activities

Following a 2.9% expansion in 2018, the Hong Kong economy contracted by 1.2% in 2019, marking the first annual contraction since 2009. In particular, the economy entered into a recession in the second half of the year, with the seasonally adjusted real Gross Domestic Product (GDP) shrinking consecutively in the second, third and fourth quarters (Table 1). The decline in economic activities reflected a notable reduction in domestic demand (Chart 1). As the local social incidents weighed significantly on consumption activities and sentiments in the latter part of the

year, private consumption expenditure recorded the first annual decline since 2003. Overall investment spending also dropped amid dampened business sentiments. On the external front, slowing global economic growth and additional tariffs levied amid the US-China trade tensions led to a decline in Hong Kong's exports of goods. Exports of services also saw the largest annual decline on record because the social incidents led to a severe deterioration in inbound tourism. With smaller domestic and re-export-induced demand, imports of goods and services also worsened. On a net basis, net trade contributed positively to GDP in 2019 (Chart 1) because total imports declined even faster than total exports.

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

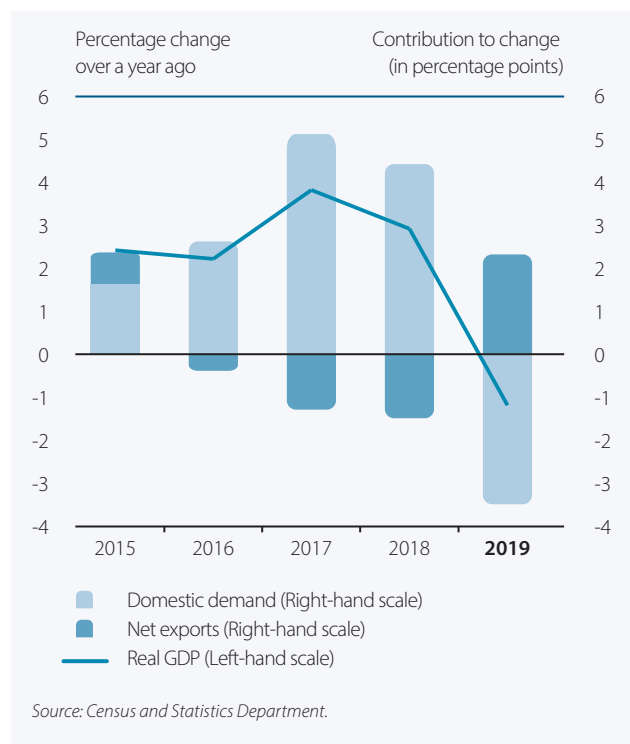
(% Period-over-period, unless otherwise specified)	2019					2018				
	Q1	Q2	Q3	Q4	2019	Q1	Q2	Q3	Q4	2018
Gross Domestic Product	0.9	(0.4)	(3.0)	(0.3)	(1.2)	1.5	(0.1)	0.1	(0.3)	2.9
(year-on-year growth)	0.7	0.4	(2.8)	(2.9)		4.5	3.4	2.6	1.1	
Private consumption expenditure	0.8	0.1	(4.1)	0.5	(1.1)	2.8	(0.6)	0.4	(0.1)	5.3
Government consumption expenditure	1.0	0.8	2.6	1.6	5.1	1.6	1.4	0.5	1.5	4.3
Gross domestic fixed capital formation	–	–	–	–	(12.3)	–	–	–	–	1.7
Exports										
Exports of goods	(1.7)	(1.6)	(1.2)	1.9	(4.7)	1.6	0.1	0.7	(2.8)	3.5
Exports of services	1.0	(3.6)	(13.4)	(11.0)	(10.4)	4.7	(2.8)	0.0	1.2	4.6
Imports										
Imports of goods	(2.2)	(2.6)	(2.0)	(0.5)	(7.4)	1.4	0.1	2.8	(4.8)	4.7
Imports of services	0.4	0.4	(5.7)	0.0	(2.3)	4.1	(2.2)	0.3	0.3	2.7

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.

Economic and Financial Environment

Chart 1 Real GDP growth by contribution



In view of the strong economic headwinds, the Government introduced several rounds of measures between August and December 2019 to alleviate the financial burden of residents, safeguard jobs and support enterprises, particularly small and medium-sized enterprises (SMEs) as well as those in the hard-hit sectors, such as retail, food services, transport and tourism. To allow banks to be more supportive to the domestic economy and help mitigate the economic cycle, the HKMA announced on 14 October a reduction in the Countercyclical Capital Buffer ratio of banks from 2.5% to 2.0%, thereby providing banks with more flexibility to release HK\$200–300 billion in bank credit to enterprises including SMEs, and also established a Banking Sector SME Lending Coordination Mechanism. A new relief measure for the 80% Guarantee Product of the SME Financing Guarantee Scheme (SFGS) was introduced in September, allowing SME borrowers facing weakening cash flows to apply for principal moratorium to get immediate support. Further, a new 90% loan guarantee product under the SFGS was introduced in December to provide additional support to SMEs, businesses with relatively less operating experience, as well as professionals seeking to set up their own practices, to obtain financing.

Monetary conditions

The Hong Kong dollar exchange rate and money markets functioned in a smooth and orderly manner in 2019. The Hong Kong dollar exchange rate remained broadly stable throughout the year. As the weak-side Convertibility Undertaking was triggered in March, the HKMA purchased Hong Kong dollars from, and sold US dollars to, banks at the rate of HK\$7.85/US\$1, leading to a decline in the Aggregate Balance in accordance with the design of the Linked Exchange Rate System. The Hong Kong dollar interbank interest rates remained largely steady at the longer end, while short-term rates generally picked up. At the retail level, several retail banks lowered their Best Lending Rates by 12.5 basis points in late October following the decreases in the target range for the US federal funds rate. As for monetary aggregates, total bank loans increased by 6.7% in 2019, up from 4.4% in 2018, and total deposits grew by 2.9% during the year.

Inflation

The underlying inflation rate, which nets out the effects of the Government's one-off relief measures, rose slightly to 3.0% in 2019, from 2.6% in 2018. The mild increase in inflation was mainly driven by the elevated pork prices due to the disrupted supply of fresh pork since May (Chart 2). Excluding basic food items, price pressures were held at moderate levels throughout the year. In particular, the housing component of consumer price inflation softened in tandem with an earlier consolidation of fresh-letting private residential rentals. More broadly, the mild growth in nominal wages and the slower increase in commercial rentals¹ helped keep local business costs in check. Externally, import price inflation moderated, in line with lower inflation in some of Hong Kong's major import sources amid slower global economic growth.

¹ Amid the local social incidents, some landlords of commercial properties reportedly provided tenants with temporary rent cuts in the latter part of the year.

Economic and Financial Environment

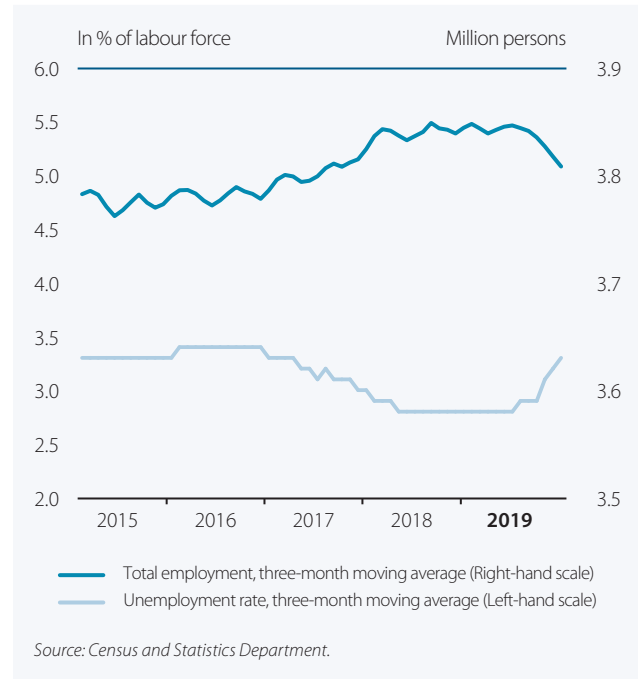
Chart 2 Underlying consumer price inflation



Labour market

The labour market remained broadly resilient in the first half of 2019 but faced mounting pressures in the second half (Chart 3). After staying at a multi-year low of 2.8% in the first two quarters, the seasonally adjusted unemployment rate rose to 2.9% in the third quarter and 3.3% in the final quarter, with those for the consumption and tourism-related sectors recording even more visible rises amid the social incidents. Overall labour demand also shrank visibly in the latter part of the year as total employment and the number of private-sector vacancies fell. The reduction in labour demand was particularly prominent in the retail, accommodation and food services sectors, as well as import/export trade and construction sectors. On the supply side, the labour force participation rate edged down, partly due to a cyclical response to the economic recession. As the labour market came under increasing pressures, growth in nominal wage and earnings showed signs of a slowdown towards the end of the year.

Chart 3 Labour market conditions

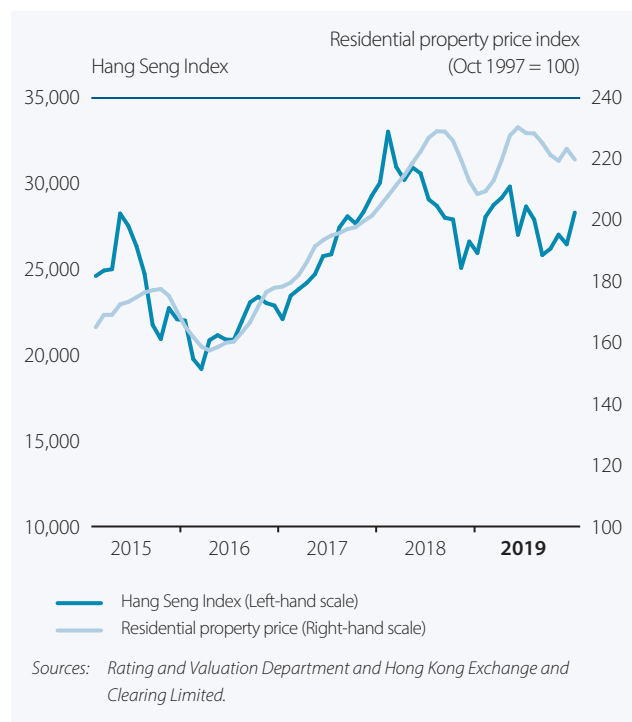


Stock market

The local stock market experienced sharp fluctuations during 2019. After a market rally in the first four months, the Hang Seng Index plunged in May due in part to concerns about the re-escalation of the US-China trade tensions (Chart 4). While recouping some lost ground in June in response to major central banks' signals of a more accommodative monetary stance, stock prices came under pressure again amid slowing global economic growth and local social incidents. Towards the end of the year, stock prices regained some upward momentum following the announcement of a "phase one" trade agreement between the US and Mainland China. The Hang Seng Index finished the year at 28,190, registering an overall gain of 9.1% for the year. By contrast, the average daily turnover declined by about 19% from a year earlier. The listings of a major Mainland tech company and a leading beer manufacturer helped expand equity funds raised through initial public offerings (IPOs) to HK\$314.2 billion in 2019. Hong Kong ranked first globally in terms of funds raised through IPOs for a second straight year in 2019.

Economic and Financial Environment

Chart 4 Asset prices



Property market

The residential property market staged a strong rebound in the first five months of 2019 but generally softened in the remainder of the year. Market sentiment improved in early 2019 partly because concerns over US-China trade tensions temporarily eased, but the sentiment was dampened afterwards by the re-escalated US-China trade tensions, prolonged social incidents and weakened domestic economic conditions. Overall housing prices moderated by 5% from the peak in May through December, though still recording an annual growth of 5% due to a 10% rebound in the first five months (Chart 4). Transaction volume in 2019 increased by 4% to 59,797 units from a year earlier, reflecting the strong trading activities in the early part of the year. Housing affordability remained stretched, with the price-to-income ratio and the income-gearing ratio staying high at 17.9 and 80.9 respectively, far above their long-term averages.² To assist home buyers with immediate housing needs, the Hong Kong Mortgage Corporation (HKMC) in mid-October raised the cap on the value of completed residential properties eligible for a mortgage loan under the Mortgage Insurance Programme.³ On the other hand, the non-residential property market faced stronger downward pressures in 2019. In particular, both prices and rentals for retail premises registered the largest declines since the global financial crisis in 2008, reflecting the worsening business conditions during the year.

² The price-to-income ratio measures the average price of a typical 50 square metre flat relative to the median annual income of households living in private housing, from a potential home buyer's perspective. The income-gearing ratio compares the mortgage payment for a typical flat of 50 square metres (under a 20-year mortgage scheme with a 70% loan-to-value ratio) to the median income of households living in private housing, from a potential home buyer's perspective. The income-gearing ratio is not the same as a borrower's actual debt-servicing ratio, which is subject to a maximum cap by the HKMA's prudential measures.

³ The HKMC amended the Mortgage Insurance Programme on 16 October 2019. For details, see "Amendments to the Mortgage Insurance Programme" issued by the HKMC.

Economic and Financial Environment

OUTLOOK FOR THE ECONOMY

Economic environment

Hong Kong's economic performance for 2020 is expected to be very challenging, with significant near-term downside risks associated with the coronavirus outbreak. Some sectors, such as retail, accommodation, food services, tourism and transport, which have yet to recover from the disruptions caused by the social incidents, will be doubly hit. However, the countercyclical fiscal measures announced in the 2020/21 Budget, which include a one-off cash handout and a new concessionary low-interest loan under the SFGS with 100% Government guarantee, are expected to provide some support to the economy, especially households and SMEs. On 16 March 2020, the HKMA further reduced the Countercyclical Capital Buffer ratio of banks from 2.0% to 1.0%, which will allow banks to be more supportive to the domestic economy, in particular those sectors and individuals that are expected to experience additional short-term stress due to the impact arising from the coronavirus outbreak. Analysed by GDP component, private consumption and investment are likely to remain weak because of the fragile consumer and business confidence. While government consumption will contribute to economic growth, public investment expenditure is anticipated to be relatively sluggish following the completion of some major infrastructure projects. On the external front, the "phase one" trade deal between the US and Mainland China is assessed to be slightly positive for the local economy in the short term. However, Hong Kong's external trade performance will continue to be weighed down by weak global economic growth and trade flows. In particular, the coronavirus outbreak may lead to regional supply chain disruptions and slower cross-border economic activities, in tourism for example, thereby restraining Hong Kong's exports. The Government forecasts real GDP growth for 2020 in the range of -1.5% to 0.5%, while growth forecasts by international organisations and private-sector analysts averaged -3.3%.

Inflation and the labour market

Inflationary pressures are expected to moderate in 2020 because of the sub-par economic conditions, the consolidation of private residential rentals and mild imported inflation. Market consensus forecasts a headline inflation rate for 2020 of 1.8%, and the Government projects the headline and underlying inflation rates to be 1.7% and 2.5% respectively. In the labour market, the unemployment rate is likely to rise further in the near term, given the weakened economic prospects and the coronavirus outbreak. Private-sector analysts expect the unemployment rate to rise to about 4.0% in 2020.

Uncertainties and risks

The subdued economic outlook for 2020 is subject to a number of uncertainties and risks, including those stemming from the slowing global economy, US-China trade relations, Mainland's economic performance, local social incidents and the persistence of the coronavirus outbreak. In particular, a prolonged coronavirus outbreak could trigger a more visible global economic slowdown and a repricing of assets, with the resulting unfavourable macroeconomic environment and tighter financial conditions posing further downward pressures on domestic real activities. However, the more concerted effort by major central banks to ease their monetary policies may provide a cushion against the negative economic impact inflicted by the outbreak.

Economic and Financial Environment

PERFORMANCE OF THE BANKING SECTOR

The Hong Kong banking sector was resilient in 2019 despite the challenging environment with the global economic slowdown, US-China trade tensions and local social incidents. Bank balance sheet trends were stable, as both loans and deposits grew moderately. The capital and liquidity positions of the banking sector remained solid and asset quality held up well. The banking sector remained profitable with stable average return on asset.

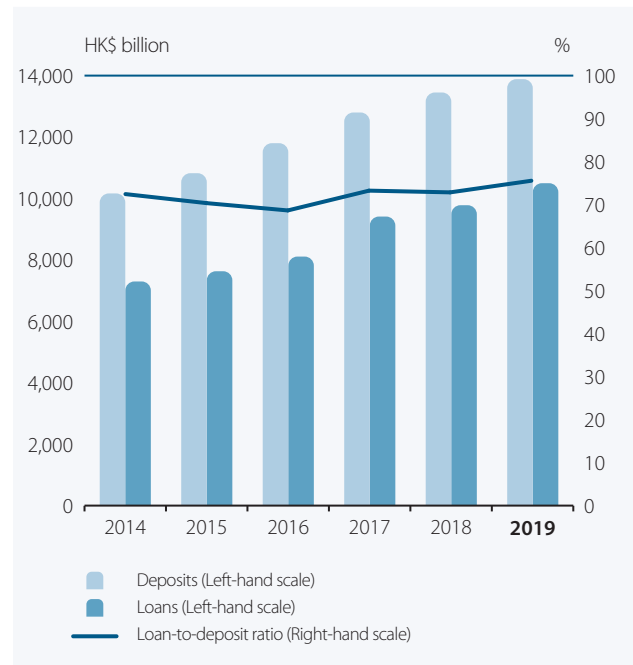
Balance sheet trends

The banking sector's balance sheet grew by 1.7% in 2019. While local and global headwinds weighed on consumer and investment sentiments, total loans increased modestly by 6.7% during the year, compared with 4.4% in 2018. Among the total, loans for use in Hong Kong grew by 7.7%, loans for use outside Hong Kong grew by 5.8%, while trade finance decreased by 0.7%. Growth in Mainland-related lending accelerated to 7.4% in 2019, from 1.5% in 2018.

Debt securities holdings accounted for 23% of total assets at the end of 2019, compared with 22% at the end of 2018. The credit risk associated with these holdings remains low as they are mostly investment-grade debt securities issued by sovereigns and banks.

On the liabilities side of bank balance sheets, total deposits increased by 2.9% in 2019, compared with 5.0% in 2018. Deposit fluctuations during the year were within historical norms and were driven by a wide range of transient factors, such as seasonal and initial public offering-related funding demand as well as business and investment-related activities. As total deposits increased at a slower pace than total loans, the overall loan-to-deposit ratio rose to 75.3% at the end of 2019 from 72.6% a year ago (Chart 5).

Chart 5 Loans and deposits of the banking sector



Economic and Financial Environment

Capital adequacy

The capital positions of the banking sector strengthened further in 2019, providing banks with a strong buffer to withstand potential shocks. The consolidated total capital ratio of locally incorporated authorized institutions (AIs) improved to 20.7% at the end of 2019 from 20.3% at the end of 2018 (Chart 6), while the Tier 1 capital ratio was at 18.5%, up from 17.9% in 2018.

The Basel III leverage ratio, a “backstop” to the risk-based capital adequacy ratio that helps restrict the build-up of excessive leverage in the banking sector, rose to 8.2% at the end of 2019 from 8.0% in 2018, well above the statutory minimum requirement of 3% (Chart 7).

Chart 6 Consolidated capital ratios of locally incorporated AIs

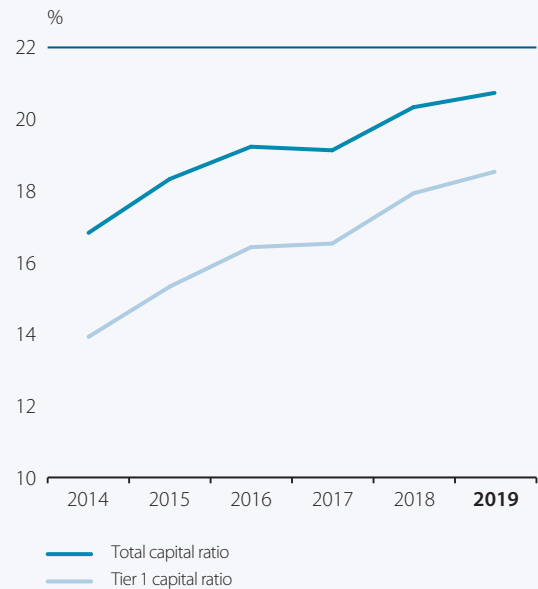
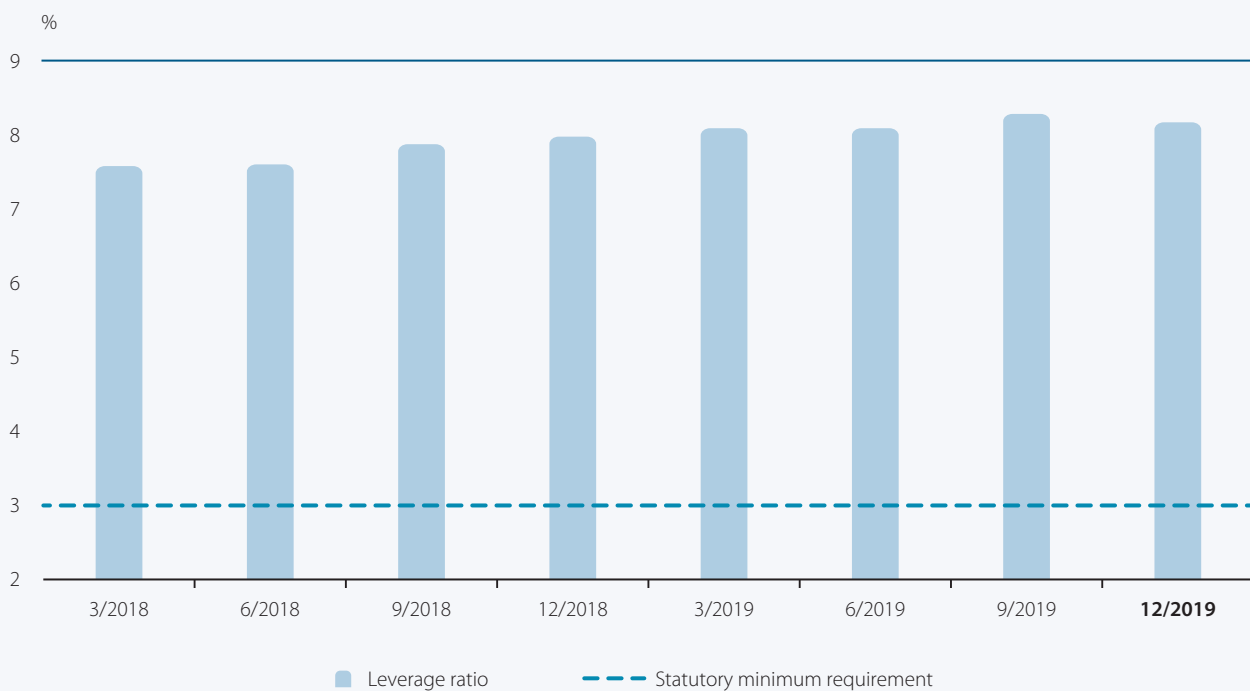


Chart 7 Consolidated leverage ratio of locally incorporated AIs



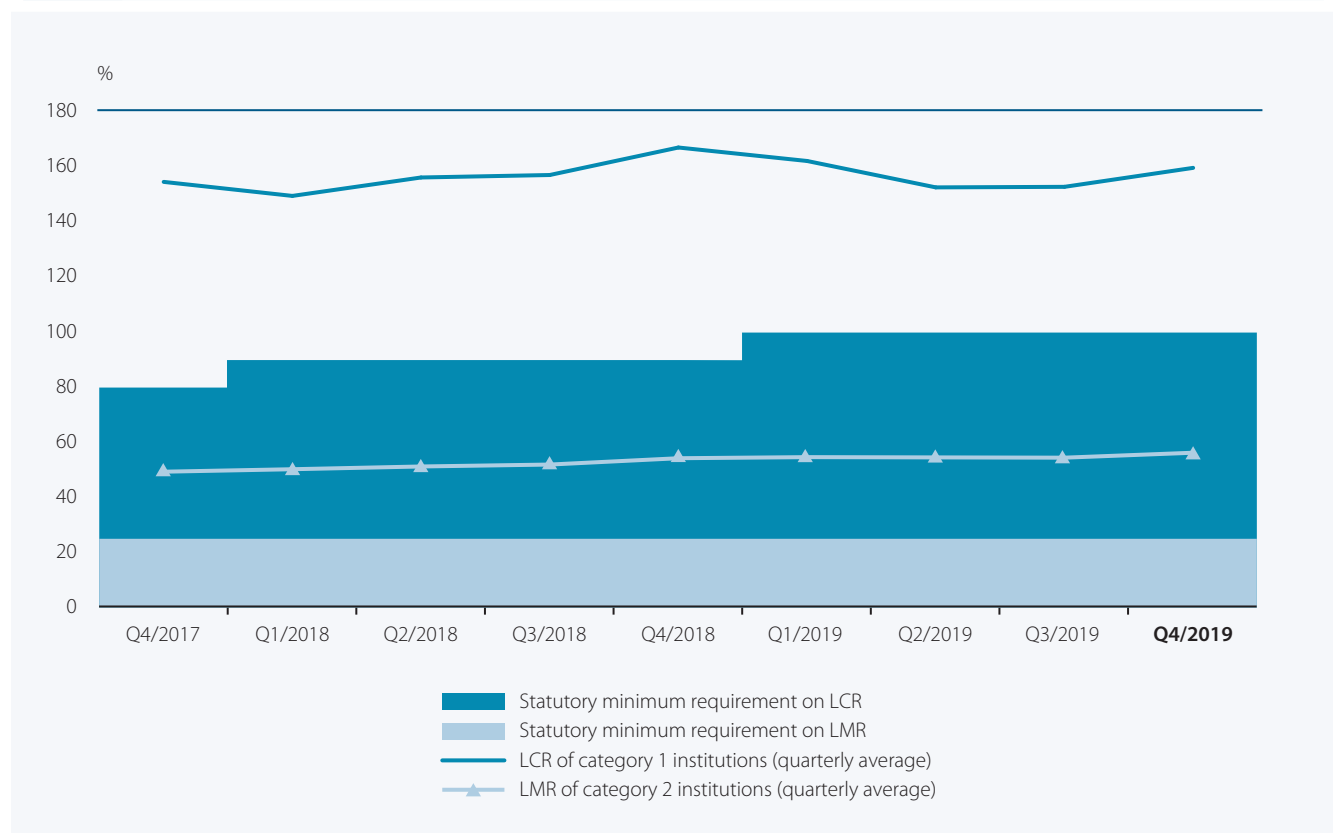
Economic and Financial Environment

Liquidity

The liquidity position of the banking sector remains sound, indicating its strong ability to withstand liquidity shocks arising from financial and economic stress. For short-term liquidity needs of one month, the quarterly average Liquidity Coverage Ratio (LCR) of category 1 institutions was 159.9% in

the fourth quarter, well above the statutory minimum requirement of 100% applicable for the year. The quarterly average Liquidity Maintenance Ratio (LMR) of category 2 institutions was 56.3%, also well above the statutory minimum requirement of 25% (Chart 8).

Chart 8 Liquidity ratios of designated AIs

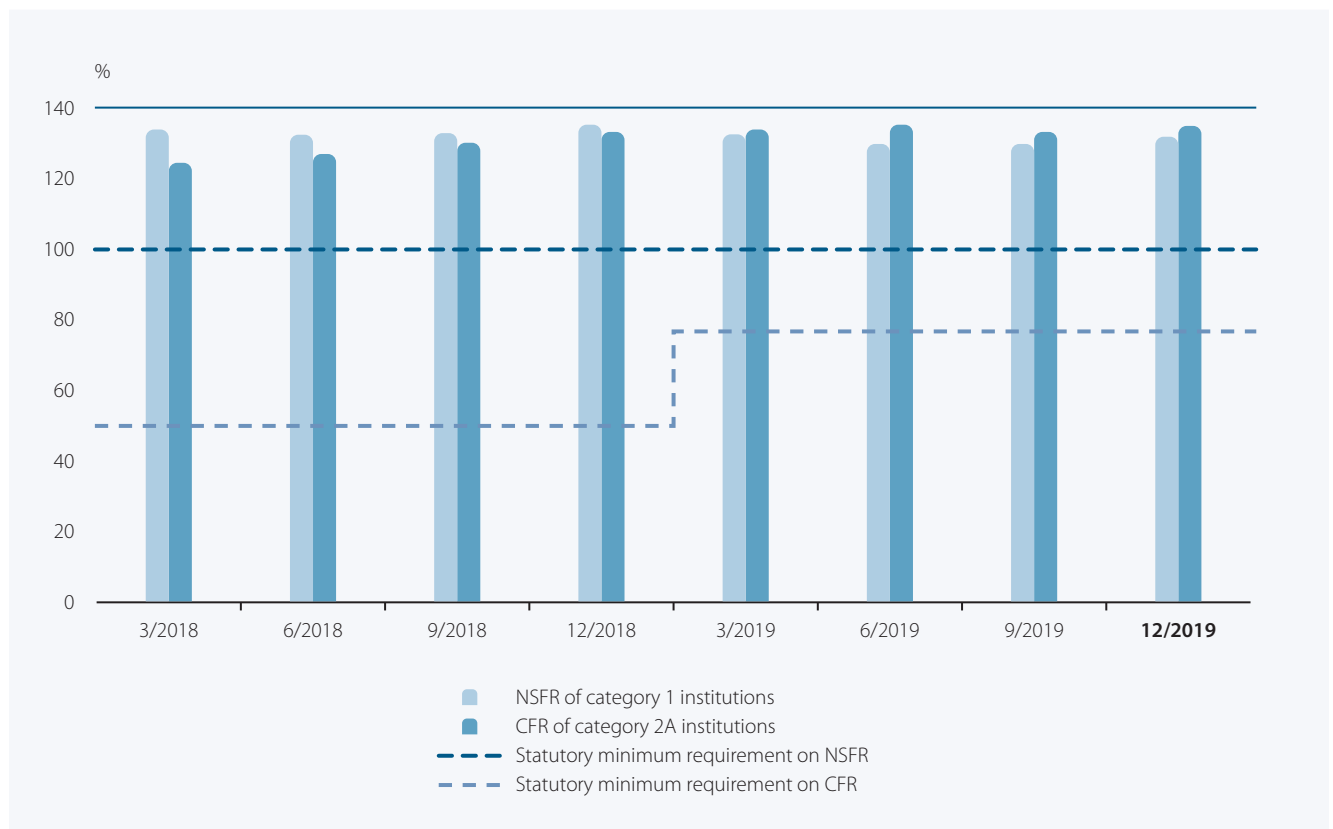


Economic and Financial Environment

Assets held by the banking sector continue to be supported by stable sources of funding. The Net Stable Funding Ratio (NSFR) of category 1 institutions was 131.7% at the end of 2019, well above the statutory minimum requirement of

100%. The Core Funding Ratio (CFR) of category 2A institutions was 134.5%, also well above the statutory minimum requirement of 75% applicable for 2019 (Chart 9).

Chart 9 Funding ratios of designated AIs

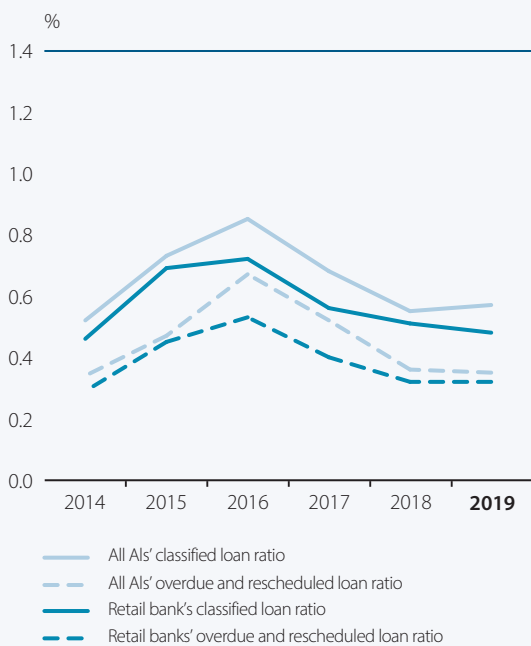


Economic and Financial Environment

Asset quality

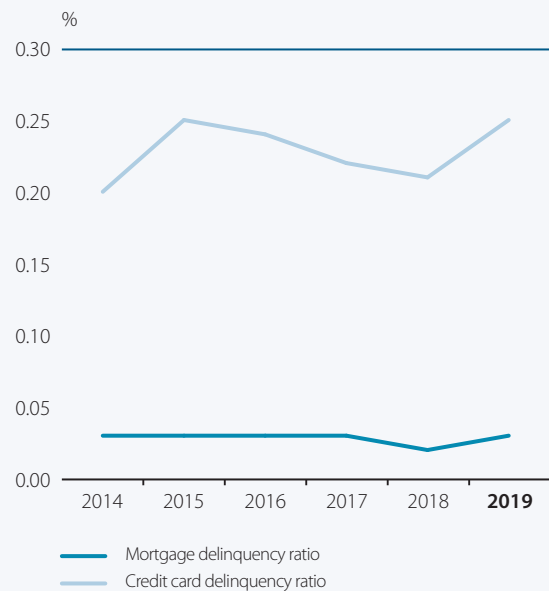
Despite the headwinds faced by the banking sector, asset quality remained good in 2019. The classified loan ratio remained low at 0.57% at the end of 2019 compared with 0.55% at the end of 2018, while the overdue and rescheduled loan ratio edged down to 0.35% from 0.36% (Chart 10). As for Mainland-related lending, the banking sector's classified loan ratio increased to 0.75% at the end of 2019 from 0.55% at the end of 2018, mainly driven up by several idiosyncratic credit events. The delinquency ratios of residential mortgage lending and credit card lending remained low at 0.03% and 0.25% respectively (Chart 11).

Chart 10 Asset quality of the banking sector



Note: Figures prior to December 2015 covered Hong Kong offices and overseas branches. Starting from December 2015, the coverage was expanded to include major overseas subsidiaries.

Chart 11 Delinquency ratios of residential mortgages and credit card lending



Economic and Financial Environment

Profitability trends

The banking sector remained profitable although profitability was slightly lower than last year. The aggregate pre-tax operating profit of retail banks declined slightly by 0.4% in 2019 (Chart 12). An increase in total operating income (+2.9%) driven by net interest income (+6.2%) was offset by increases in total operating expenses (+4.9%) and loan impairment charges (+72.1%). The net interest margin widened slightly to 1.63% in 2019 from 1.62% in 2018 (Chart 13).

Retail banks generally maintained their efficiency. Their cost-to-income ratio edged up to 39.5% in 2019 from 38.7% in 2018 (Chart 14).

Chart 12 Retail banks' performance

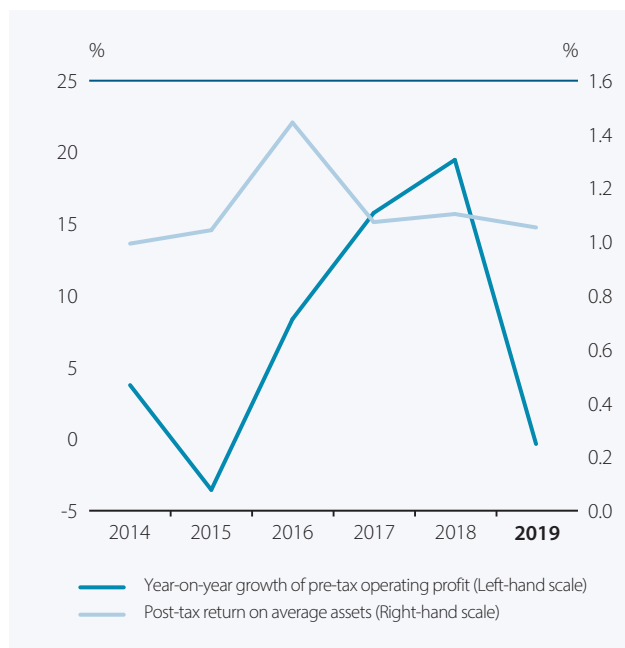


Chart 13 Retail banks' net interest margin

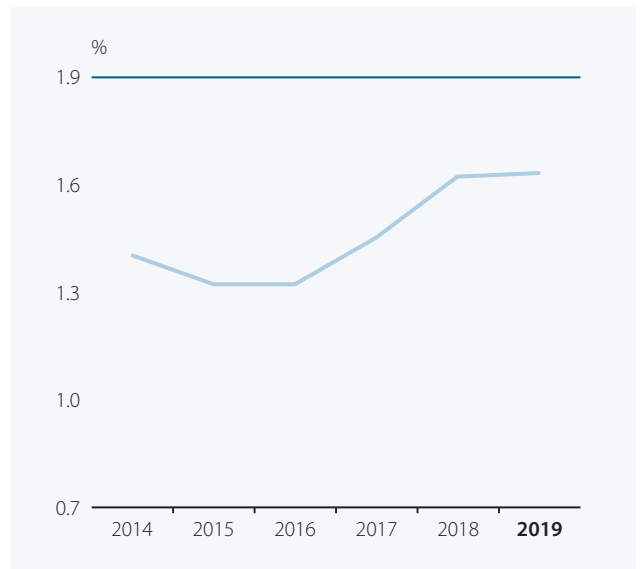
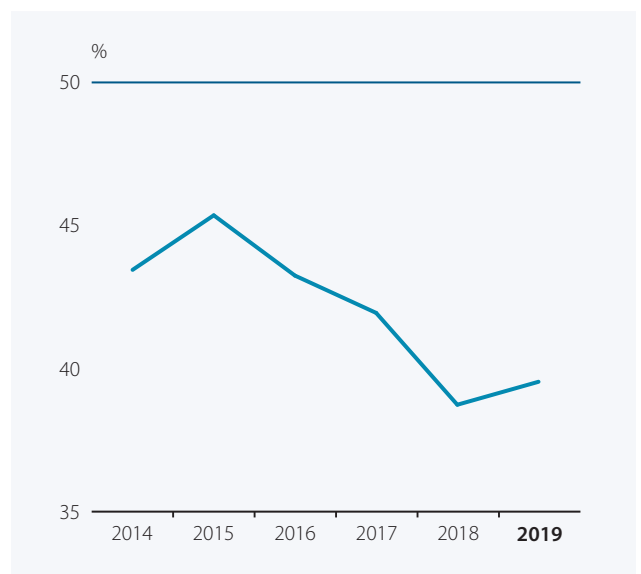


Chart 14 Retail banks' cost-to-income ratio



Monetary Stability



The Hong Kong dollar exchange rate and money markets functioned in a smooth and orderly manner in 2019. The Hong Kong dollar exchange rate remained stable throughout the year and strengthened to the strong side of the Convertibility Zone towards the end of the year. As the cornerstone of Hong Kong's monetary and financial stability, the Linked Exchange Rate System has shown its resilience to shocks time after time.

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 notes and coins in circulation
- ◆ the Aggregate Balance, which is the sum of the clearing account balances of banks kept with the HKMA
- ◆ Exchange Fund Bills and Notes (EFBNs) issued by the HKMA on behalf of the Government.

Table 1 Monetary Base

HK\$ million	31 December 2019	31 December 2018
Certificates of Indebtedness ¹	516,605	483,845
Government-issued currency notes and coins in circulation ¹	13,001	12,592
Balance of the banking system ²	54,288	76,398
EFBNs issued ³	1,078,748	1,059,801
TOTAL	1,662,642	1,632,636

1. 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 at the reporting date. This arrangement is in accordance with the accounting principles generally accepted in Hong Kong.
2. 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.
3. 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). When the demand for Hong Kong dollars is greater than the supply and the market exchange rate strengthens to the strong-side CU of HK\$7.75 to one US dollar, the HKMA stands ready to sell Hong Kong dollars to banks for US dollars upon request. The Aggregate Balance will then expand to push down Hong Kong dollar interest rates, creating monetary conditions that

move the Hong Kong dollar away from the strong-side limit to within the Convertibility Zone of 7.75 to 7.85. Conversely, if the supply of Hong Kong dollars is greater than demand and the market exchange rate weakens to the weak-side CU of HK\$7.85 to one US dollar, the HKMA stands ready to buy Hong Kong dollars from banks upon request. The Aggregate Balance will then contract to drive Hong Kong dollar interest rates up, pushing the Hong Kong dollar away from the weak-side limit to stay within the Convertibility Zone.

Monetary Stability

REVIEW OF 2019

Exchange rate stability

Despite uncertainties in the external environment and a slowdown in the domestic economy, the Hong Kong dollar remained stable and traded in a smooth and orderly manner in 2019. In the beginning of the year, the widening negative Hong Kong dollar-US dollar interest rate spreads attracted carry trade activities of selling Hong Kong dollars for US dollars, pushing the Hong Kong dollar exchange rate towards the weak-side CU of 7.85 (Chart 1). As the weakening of the Hong Kong dollar exchange rate continued, the weak-side CU was eventually triggered eight times in March. Thereafter, the Hong Kong dollar continued to stay

near the weak-side CU rate of 7.85. Since late May, the strong Hong Kong dollar demand arising from sizeable initial public offering (IPO) activities, corporates' demand for dividend payment and the half-year closing had led the Hong Kong dollar to strengthen. While the Hong Kong dollar drifted lower after the half-year mark, it regained momentum from late October and stayed in the strong side of the Convertibility Zone towards the end of the year. This reflected partly equity-related demand including IPOs, and partly the unwinding of short Hong Kong dollar positions due to tightened liquidity near the year end. Overall, the Hong Kong dollar exchange market functioned normally throughout 2019.

Chart 1 Market exchange rate in 2019



Monetary Stability

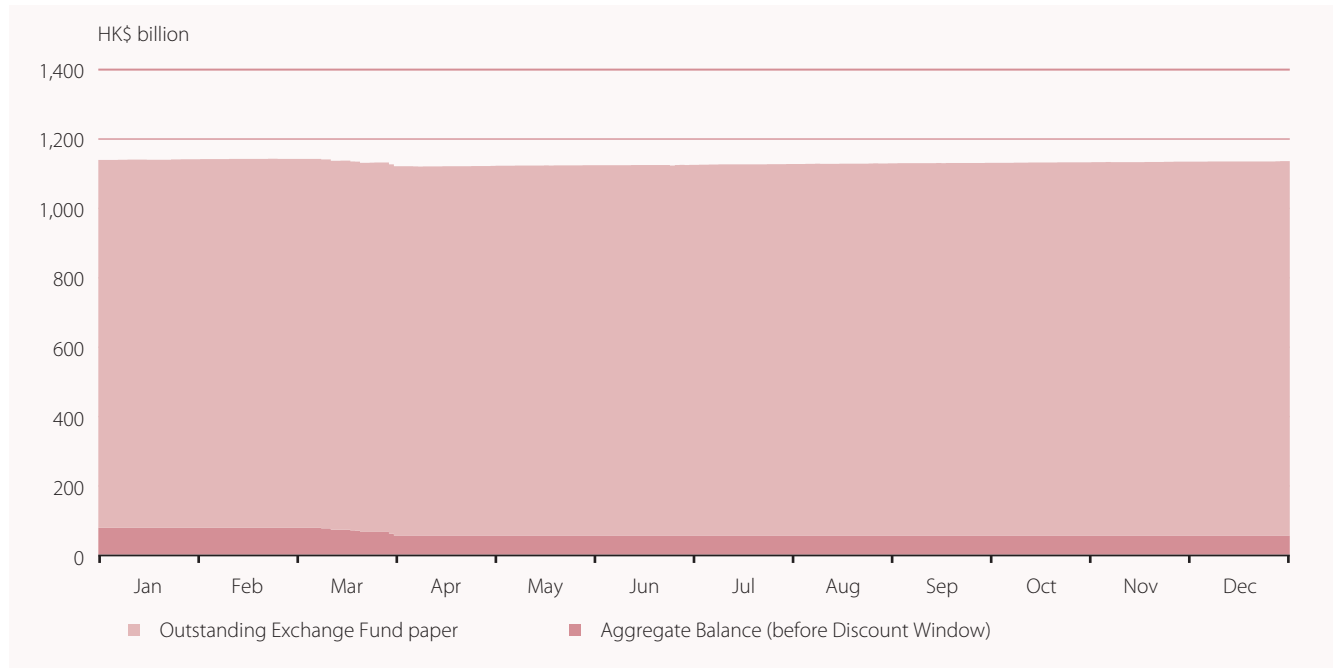
Due to the triggering of the weak-side CU, the total of the Aggregate Balance (before Discount Window) and outstanding EFBNs declined from HK\$1,136.2 billion at the end of 2018 to HK\$1,133.0 billion at the end of 2019 (Chart 2). During the year, the HKMA purchased a total of HK\$22.1 billion at the request of banks at the weak-side CU of 7.85 in accordance with the design of the Linked Exchange

Rate System (LERS), leading to a contraction of the Aggregate Balance (before Discount Window) from HK\$76.4 billion at the end of 2018 to HK\$54.3 billion at the end of 2019. The outstanding EFBNs increased slightly from HK\$1,059.8 billion to HK\$1,078.7 billion during the year, reflecting the issuance of EFBNs to absorb EFBNs' interest payments according to the established practice. The Monetary Base as a whole remained fully backed by foreign exchange reserves.



Total Aggregate Balance (before Discount Window) and outstanding Exchange Fund Bills and Notes at **HK\$1,133 billion** at end-2019.

Chart 2 Aggregate Balance (before Discount Window) and outstanding Exchange Fund papers in 2019



Monetary Stability

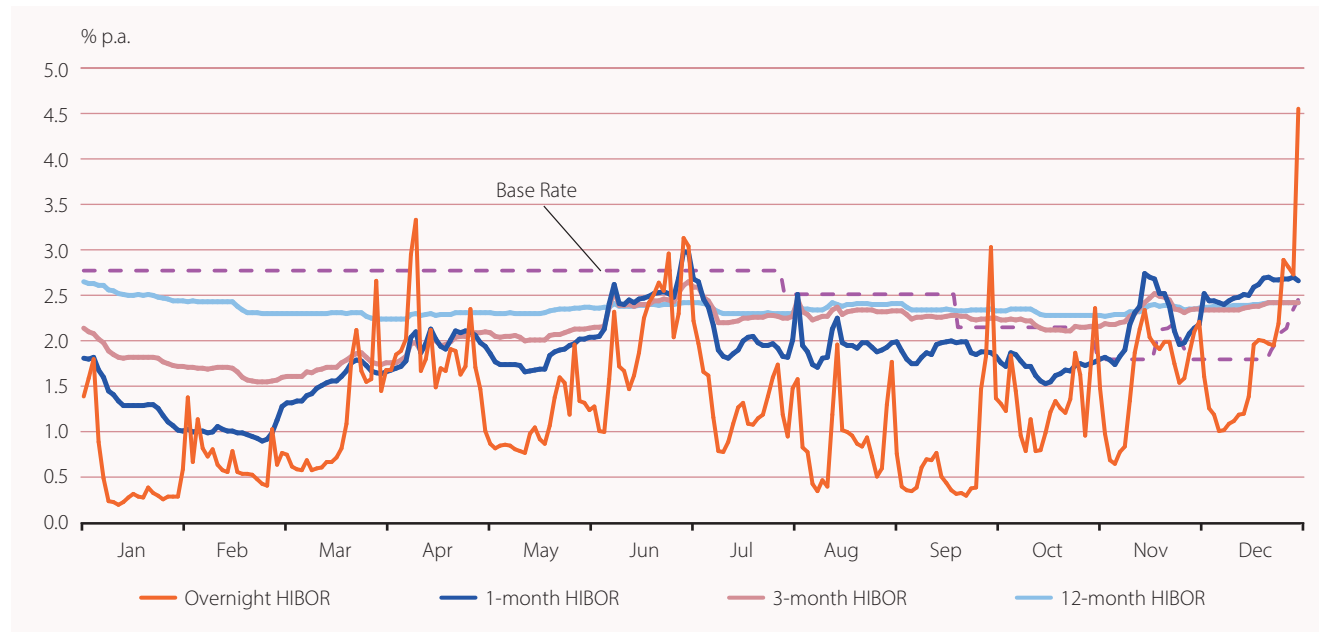
Money market

During 2019, the Hong Kong dollar interbank interest rates remained largely steady at the longer end, while short-term rates broadly picked up (Chart 3). Short-term rates also experienced more fluctuations driven by IPO-related funding demand and seasonal liquidity needs. The reduction in the Aggregate Balance since April 2018 may have led to a higher sensitivity of the Hong Kong dollar interbank rates to changes in the supply and demand of Hong Kong dollar funding in the local market.

The Base Rate was adjusted downwards on 1 August, 19 September and 31 October by a total of 75 basis points, from 2.75% at the end of 2018 to 2.00% in early November, as the target range for the US federal funds rate moved downward three times by a total of 75 basis points from 2.25–2.50% to

1.50–1.75% during the year. On 18–26 November and 19–31 December, the Base Rate was set higher than 2.00%, reflecting a marked upward trend of the overnight and one-month Hong Kong Interbank Offered Rates (HIBORs) in the last two months of the year. As such, the Base Rate closed at 2.49% at the end of 2019. The adjustment of the Base Rate was in accordance with the revised formula announced on 26 March 2009, which sets the Base Rate at either 50 basis points above the lower bound of the prevailing target range for the US federal funds rate or the average of the five-day moving averages of the overnight and one-month HIBORs, whichever is the higher. On the retail front, several retail banks lowered their Best Lending Rates by 12.5 basis points following the decrease in the target range for the US federal funds rate in late October.

Chart 3 Hong Kong dollar interbank interest rates in 2019



Monetary Stability

The discounts of the Hong Kong dollar forward points widened during the first two months, broadly tracking the movements of the Hong Kong dollar-US dollar interest rate spreads, with the 12-month Hong Kong dollar forward points reaching about -708 pips in mid-February (Chart 4). Thereafter, along with the narrowing of the negative Hong

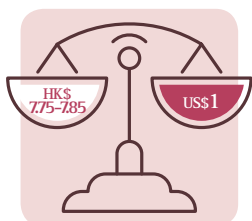
Kong dollar-US dollar interest rate spreads, the discounts of the Hong Kong dollar forward points narrowed gradually and turned to premiums towards the end of the year. Overall, Hong Kong's money markets operated in an orderly manner. Discount Window borrowing decreased to HK\$38.3 billion in 2019 from HK\$40.2 billion in 2018.

Chart 4 Hong Kong dollar forward points in 2019



Monetary Stability

The Linked Exchange Rate System



The LERS has contributed significantly to Hong Kong's monetary and financial stability for more than three decades and has shown its resilience in multiple regional and global financial crises. Against the backdrop of social incidents

happening during the year, a number of unfounded rumours casting doubt on the LERS and financial stability of Hong Kong circulated in the social media. The HKMA acted promptly and vigorously to rebut the rumours and reassure the public through the use of both traditional and social media, reiterating that the LERS would remain in place and Hong Kong would not impose foreign exchange or capital controls. In addition, the HKMA issued a number of articles to help the public understand the LERS operation, the flow of funds and the interest rate outlook. These efforts were effective in maintaining public confidence in the LERS, as evidenced by the orderly functioning of the markets throughout the year. The Government is also firmly committed to the LERS. Public confidence in the Government's commitment and the use of the Hong Kong dollar as a means of payment and storage of value were further reinforced by the stability in the foreign exchange and money markets. In its 2019 Article IV consultation with Hong Kong, the International Monetary Fund reaffirmed its long-standing support for the LERS as an anchor of Hong Kong's financial stability, and commented that the LERS remained the appropriate exchange rate arrangement for Hong Kong underpinned by Hong Kong's transparent 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 system is highly liquid and sound, with liquidity positions and capitalisation being well above the minimum international standards. To ensure the 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 corporate, property-related and Mainland-related lending. With a smaller Aggregate Balance relative to previous years, banks have in general strengthened their liquidity management arrangements and have been more proactive in managing their day-to-day funding positions. Furthermore, the HKMA has maintained close dialogue with banks to ensure smooth recycling of liquidity in the market, especially ahead of and during the subscription periods of large IPOs. No settlement gridlocks were noted during the year, with the Discount Window continuing to function effectively and efficiently.

To improve the 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 109.9–112.1% during 2019, without touching the Upper or Lower Trigger Level. The ratio closed at 111.2% on 31 December (Chart 5). 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. In the event of abrupt shocks, the sizeable amount of financial resources of the Exchange Fund, together with Hong Kong's robust banking system, will provide powerful support to Hong Kong's monetary and financial stability.

Monetary Stability

Chart 5 Daily movement of the Backing Ratio in 2019



Monetary Stability

Other activities

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 2019, the CBC considered issues including an event study on the LERS operations, the relationship between the Aggregate Balance and interest rates in Hong Kong, an improved and more flexible approach to options markets' views about the LERS, and the impact of future IPOs on HIBORs. Records of the CBC's discussions on these issues and reports on Currency Board operations submitted to the CBC are published on the HKMA website.

Research

The Hong Kong Institute for Monetary and Financial Research (HKIMR), formerly the Hong Kong Institute for Monetary Research, pursues research studies on topics in monetary policy, banking and finance that are policy relevant. This is reflected in the wide array of topics explored by HKIMR researchers and overseas visitors and in its conferences and events. The HKIMR collaborates with major central banks and policy institutions to jointly organise policy-focused conferences. Its research visiting programmes support research projects on policy issues that are of importance to the HKMA, Hong Kong and the region.

In 2019, the HKIMR hosted 14 research scholars, published 17 working papers, and held 11 public seminars covering a broad range of economic, monetary and financial issues. It also organised three international conferences:

- ◆ The Tenth Annual International Conference on the Chinese Economy, titled "China's Financial Reforms and Economic Transformation", was held on 10–11 January in Hong Kong, organised jointly by the HKIMR, the Financial Research Institute of the People's Bank of China and the Research Institute of Finance of the Development Research Centre of the State Council. The conference provided a world-class forum for economic experts from central banks, international institutions, academia and the financial industry to discuss issues related to the risks that Mainland's financial sector faced in the light of changes introduced by financial reforms and Mainland's economic development.
- ◆ The Fourth International Finance and Macroeconomics Conference, titled "Open Economy Macroeconomics in the Age of Normalization", was organised on 12–13 April jointly by the HKIMR and the Hong Kong University of Science and Technology.
- ◆ The HKIMR and the Federal Reserve Bank of New York co-hosted a conference titled "Monetary Policy and Heterogeneity" in Hong Kong on 23–24 May, featuring a keynote speech by James Bullard, President and Chief Executive Officer of Federal Reserve Bank of St. Louis.

Monetary Stability

Notes and coins



At the end of 2019, the total value of banknotes (notes issued by note-issuing banks) in circulation was HK\$516.6 billion, an increase of 6.8% from a year earlier (Charts 6, 7 and 8). The total value of government-issued notes and coins in circulation

amounted to HK\$12.8 billion, up 3.3% year-on-year (Charts 9 and 10). Among the government-issued notes and coins, the value of HK\$10 notes in circulation amounted to HK\$4.7 billion, 83% of which were polymer notes.

Chart 6 Banknotes in circulation by note-issuing banks at the end of 2019

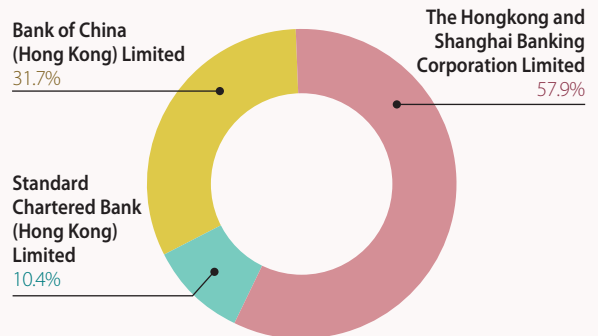
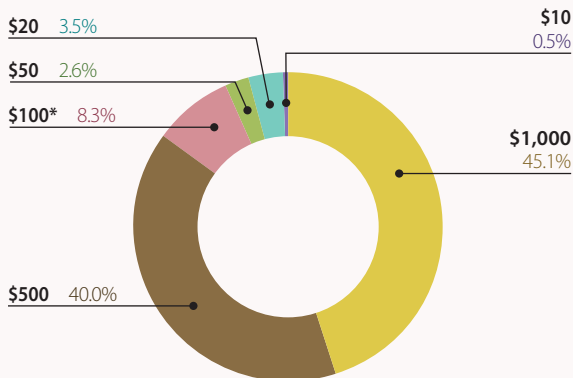


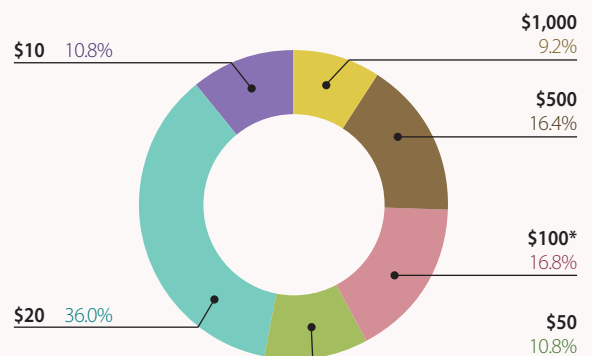
Chart 7 Distribution of banknotes in circulation at the end of 2019

HK\$

(By value)



(By number)



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

Monetary Stability

Chart 8 Banknotes in circulation at the end of 2019

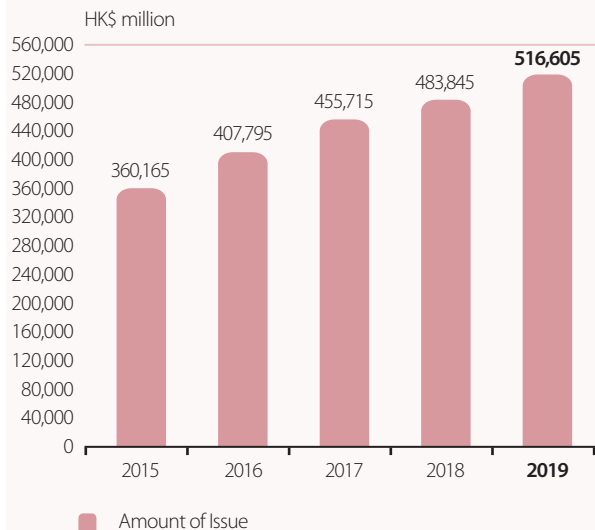


Chart 9 Government-issued notes and coins in circulation at the end of 2019

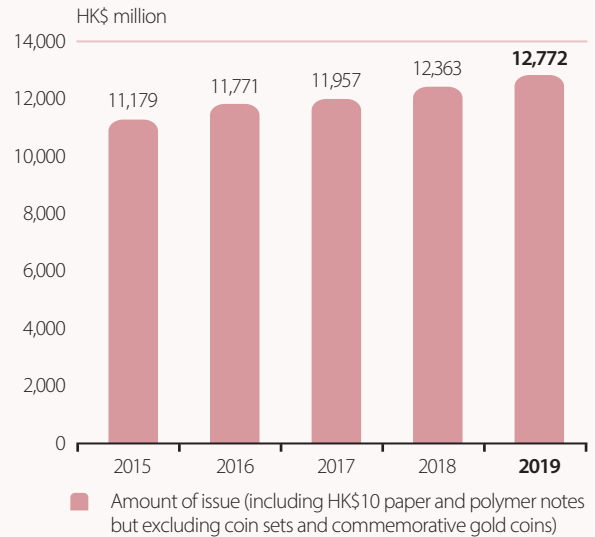
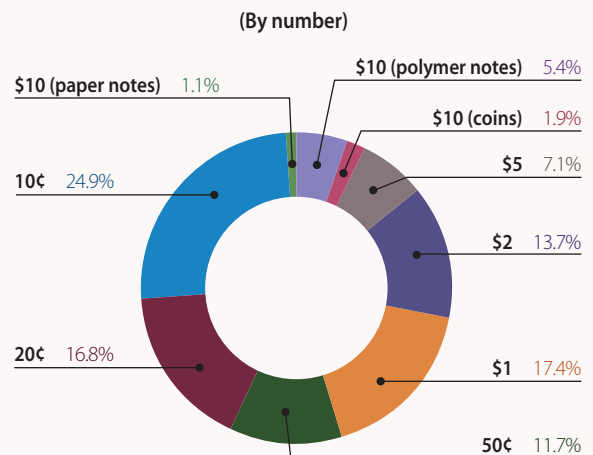
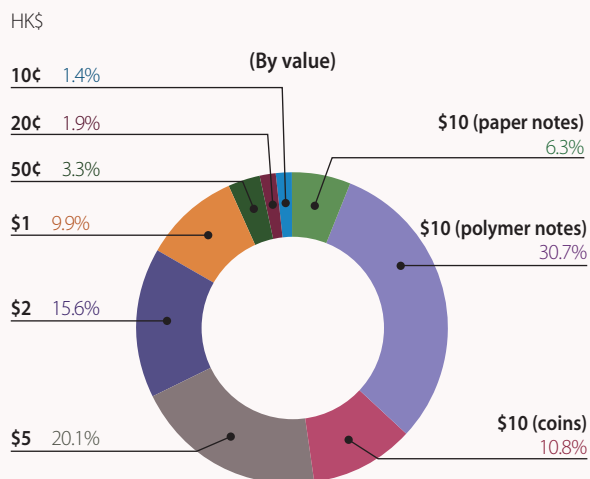


Chart 10 Breakdown of government-issued notes and coins in circulation at the end of 2019



Monetary Stability

New series of Hong Kong banknotes

The HKMA and the three note-issuing banks announced in 2018 the issue of a new series of banknotes. The new HK\$1,000 banknotes entered circulation in late 2018, and the HK\$500 notes and HK\$100 notes during 2019. The remaining two denominations of HK\$50 and HK\$20 were released into circulation in early 2020.

During the year, the HKMA arranged a variety of publicity materials and events about the new banknotes, including a publicity video on their security features, a media event and an exhibition on the design of the HK\$100 notes at the Xiqu Centre of the West Kowloon Cultural District to elaborate on the theme of Cantonese opera adopted for the HK\$100 notes. Student ambassadors visited schools, elderly centres and visually impaired associations to provide talks for over 4,900 participants. Seventeen public seminars were held for over 2,400 bank tellers, retailers and students to promote awareness of the new banknotes.



HKMA's then Chief Executive, Mr Norman Chan (left), joins the chief executives of the three note-issuing banks to talk about the design of the new HK\$100 notes.



A talk on the 2018 series of banknotes for primary school students.

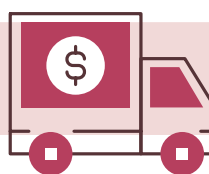
Monetary Stability

Coin Collection Programme

The Coin Collection Programme, launched in October 2014, is well received by the public. It is the world's first structured coin collection programme, sending two mobile trucks, known as Coin Carts, to visit the public across all 18 districts of Hong Kong on a rotational basis. Each Coin Cart is equipped with two high-speed coin counting machines. The public may exchange their coins for banknotes, top up their stored value facilities such as Octopus cards and e-wallets, or donate the coins to the Community Chest box on board. In collaboration with the Hong Kong Council of Social Service, the Coin Carts collected coins on flag days for non-governmental organisations. The Coin Carts also visited schools to raise students' awareness of the programme.

Up to end-2019, the two Coin Carts had served about 685,000 people and collected 554 million coins with a total face value of HK\$802 million since inception. Details and up-to-date information about the programme, including the service schedule, are available on the HKMA website (coincollection.hkma.gov.hk).

The Coin Carts have collected **554 million** coins with a total face value of **HK\$802 million** since inception.



Exchange Fund Bills and Notes

The EFBN Programme continued to operate smoothly. At the end of 2019, the nominal amount of outstanding Exchange Fund papers stood at HK\$1,082.1 billion (Table 2).

Table 2 Outstanding issues of EFBNs

HK\$ million	2019	2018
Exchange Fund Bills (by original maturity)		
28 days	1,800	800
91 days	644,362	624,015
182 days	357,600	354,000
364 days	51,700	51,700
Sub-total	1,055,462	1,030,515
Exchange Fund Notes (by remaining tenor)		
1 year or below	6,400	10,400
Over 1 year and up to 3 years	8,600	8,000
Over 3 years and up to 5 years	5,600	5,000
Over 5 years and up to 10 years	6,000	7,600
Over 10 years	0	1,200
Sub-total	26,600	32,200
Total	1,082,062	1,062,715

Monetary Stability

PLANS FOR 2020 AND BEYOND



The global macro-financial environment in 2020 is likely to be complicated by a host of risk factors, including negative sentiments over the novel coronavirus outbreak, the ebb and flow of negotiations in the US-China trade disputes, and

evolving geopolitical conflicts. While the challenging external environment may lead to higher volatility in the flow of funds, Hong Kong is able to withstand outflows without compromising the city's financial stability, given the ample foreign reserves and robust banking system. Social situations in Hong Kong and the coronavirus outbreak may continue to impact the domestic real economy. Nevertheless, with the resilience and buffers built up in Hong Kong's financial system over the years, the HKMA has the capability, resources and commitment to safeguard monetary and financial stability.

The HKMA will continue to monitor closely risks and vulnerabilities in the domestic and external environments, and stands ready to deploy appropriate measures where necessary to maintain Hong Kong's monetary and financial stability. For example, the HKMA will further develop the timely monitoring of positions in the over-the-counter derivatives market using Hong Kong Trade Repository data. A research programme in 2020 will study issues affecting the Hong Kong economy and assess the potential risks associated with them. The CBC will continue to examine issues relevant to Hong Kong's monetary and financial stability, review the technical aspects of the Currency Board arrangements and, where appropriate, recommend measures to strengthen them.

Banking Stability



The banking sector in Hong Kong remained sound and stable in 2019, notwithstanding the headwinds brought by the weakening global and local economies. Thanks to the concerted efforts of the industry, the banking sector continued to operate normally amidst the social events. Efforts were taken to ensure that inconvenience caused to the public was kept to a minimum. During the year, the HKMA focused its supervision on the credit and liquidity risk management of authorized institutions. In view of escalating cyber threats and the industry's growing dependency on technology, the HKMA stepped up the supervision of authorized institutions' technology risk management. On conduct supervision, the HKMA streamlined its investor protection measures to enhance customer experience while according protection to customers. We also enhanced consumer protection in digital financial services and continued to promote a customer-centric corporate culture.

On anti-money laundering and counter-financing of terrorism (AML/CFT), 2019 marked the conclusion of the Financial Action Task Force's Fourth Round Mutual Evaluation of Hong Kong's AML/CFT regime, which was assessed as compliant and effective overall, and earned positive recognition particularly for the banking sector's good understanding of risks and the HKMA's risk-based supervisory work in AML/CFT. The HKMA has continued to participate in the public-private partnership for intelligence sharing on fraud and money laundering, and its active support for the adoption of AML/CFT regulatory technology in the banking sector.

On banking development, the HKMA granted banking licences to eight virtual banks in 2019 and announced a three-phased approach to facilitate the development of green and sustainable banking in Hong Kong. The HKMA has been in close collaboration with the banking industry to optimise supervisory policies and processes and to carry out capacity-building initiatives that facilitate talent development.

Meanwhile, substantial progress was made on the local implementation of international supervisory standards, including capital adequacy standards, disclosure standards, liquidity standards and large exposure standards. The HKMA also continued its work to ensure there would be a credible resolution regime for authorized institutions, including implementing rules on loss-absorbing capacity requirements to enhance the resolvability of authorized institutions.

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 the financial system being highly resilient and 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 extremis, by failing in a disorderly manner. The Monetary Authority, as a supervisory authority, plays a key role in safeguarding financial stability by ensuring banks are resilient to shocks and are able to recover their positions in response to crises, ultimately helping to prevent failures. The Monetary Authority is responsible for the prudential supervision of banks in Hong Kong. It is tasked with the authorization of licensed banks, restricted licence banks and deposit-taking companies in Hong Kong, which are collectively known as authorized institutions (AIs). The Monetary Authority is also responsible for the designation and oversight of certain financial market infrastructures (FMIs).

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. To ensure that the resolution regime in Hong Kong is operational, it is important to lay down resolution legislation 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.

REVIEW OF 2019

Overview of supervisory activities

In 2019, 196 off-site reviews were conducted covering a broad range of issues, including CAMEL rating assessment¹, corporate governance, risk management and fintech strategies. As part of the HKMA's continued efforts to promote stronger risk governance, 26 meetings were held with the boards of directors or board-level committees of AIs. Furthermore, 32 tripartite meetings were held among the HKMA, the AIs and their external auditors.

Apart from off-site activities, the HKMA conducts regular on-site examinations supplemented with thematic reviews on areas assessed to be of higher risk. A total of 405 on-site examinations and thematic reviews were conducted during the year. Credit risk management remained a key focus of these examinations and reviews. Another major focus was in technology risk and operational risk management. The HKMA also increased the number of on-site examinations and thematic reviews targeted at liquidity and market risk management as well as the implementation of the Basel capital adequacy framework. At the same time, specialist teams performed on-site examinations and thematic reviews of AIs' activities in securities, investment products, insurance and Mandatory Provident Fund (MPF)-related businesses.

¹ Comprising the Capital adequacy, Asset quality, Management, Earnings and Liquidity components.

Banking Stability

Table 1 contains an overall summary of the HKMA's supervisory activities in 2019.

Table 1 Summary of supervisory activities

	2019	2018
1 Off-site reviews and prudential interviews	196	187
2 Meetings with boards of directors or board-level committees of AIs	26	27
3 Tripartite meetings	32	28
4 Culture dialogues	4	0
5 On-site examinations	104	100
Credit risk management and controls	0	0
Technology risk and operational risk management	12	23
AML/CFT controls	17	20
Liquidity risk management	0	2
Implementation of Basel capital adequacy framework	9	8
Capital planning	6	3
Market risk, counterparty credit risk and treasury activities	6	8
Securities, investment products, insurance and MPF-related businesses	23	18
Consumer protection	2	0
Deposit Protection Scheme-related representation	12	12
Overseas examinations	17	6
6 Thematic reviews	301	292
Credit risk management and controls	50	91
Technology risk and operational risk management	76	70
AML/CFT controls	61	44
Implementation of Basel capital adequacy framework	4	5
Sale of investment and insurance products	30	9
Consumer protection	42	42
Liquidity risk	23	21
Market risk	15	10
Total	663	634

Supervision of credit risk

Credit growth and asset quality

Bank lending increased moderately in 2019. Total loans grew by 6.7%, compared with 4.4% in 2018. As shown in Table 2, loans for use in Hong Kong and loans for use outside Hong Kong registered growth of 7.7% and 5.8% respectively.

Table 2 Growth in loans and advances

% change	2019	2018
Total loans and advances	6.7	4.4
Of which:		
– for use in Hong Kong	7.7	6.5
– trade finance	-0.7	-7.6
– for use outside Hong Kong	5.8	2.0

Mainland-related lending grew by 7.4% to HK\$4,564 billion as at the end of 2019 (Table 3).

Table 3 Growth in Mainland-related lending

% change	2019	2018
Total Mainland-related lending	7.4	1.5
Of which:		
– Mainland-related lending (excluding trade finance)	7.1	2.8
– trade finance	11	-14.9

The asset quality of AIs remained healthy. Retail banks' classified loan ratio edged down from 0.51% at the end of 2018 to 0.48% at the end of 2019, well below the long-run historical average of 2% since 2000. For the banking industry as a whole, the classified loan ratio increased slightly from 0.55% to 0.57%. Specifically in terms of Mainland-related lending, retail banks' classified loan ratio increased from 0.63% in 2018 to 0.79% in 2019, which was still low by historical standard. For the banking industry as a whole, the ratio increased to 0.75% from 0.55% a year ago.

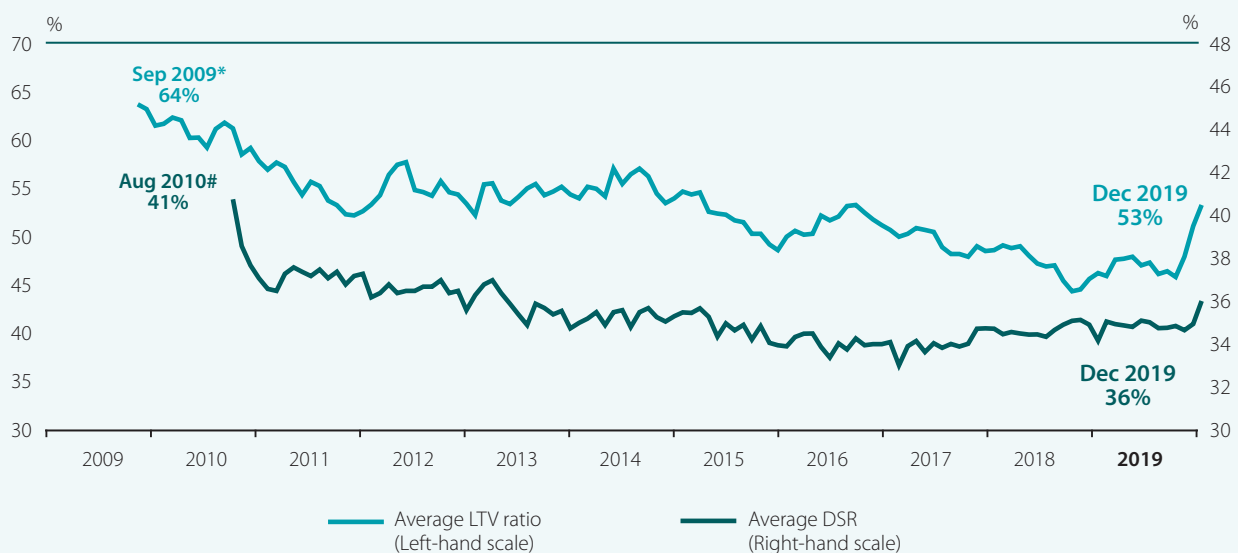
Banking Stability

During the year, the HKMA devoted increased supervisory efforts in ensuring that Als continued to adopt prudent credit risk management standards amid the uncertain economic environment. Solvency stress tests were enhanced to incorporate more comprehensive risk coverage and more severe stress assumptions. The results of the enhanced stress tests continued to indicate that banks generally had sufficient capital buffers to withstand extreme shocks. Targeted and thematic examinations were conducted to evaluate the credit risk management practices of Als in different areas, such as lending to corporates engaged in high-risk business, complex financing arrangements, and collateralised lending to private banking and wealth management customers. Recognising that small and medium-sized enterprises (SMEs) would more likely face greater challenges during economic downturns, the HKMA established a Banking Sector SME Lending Co-ordination Mechanism in October, with a view to encouraging banks to continue to support SMEs' financing needs to the extent permitted by prudent risk management principles.

Property mortgage lending

The resilience of the Hong Kong banking sector to withstand a downturn in the property market has been strengthened significantly by the eight rounds of countercyclical macro-prudential measures introduced by the HKMA since 2009. The average loan-to-value (LTV) ratio of new residential mortgage loans fell to 53% in December 2019 from 64% in September 2009, before the countercyclical measures were first introduced. The average debt servicing ratio (DSR) of new mortgages also decreased to 36% in December 2019 from 41% in August 2010, when a cap on DSR was first applied (Chart 1).

Chart 1 Average LTV ratio and DSR of new residential mortgage loans



* Before the introduction of the first round of the HKMA's countercyclical measures on property lending

Introduction of a cap on DSR

Banking Stability

Supervision of operational and technology risk

The HKMA adopts a three-phased approach to implement the Cyber Resilience Assessment Framework under the Cybersecurity Fortification Initiative (CFI). Phase One assessment, involving all the major banks, was completed in 2018. The remaining Als covered in the second and third phases have substantially completed the assessment as scheduled. The HKMA has also embarked on a comprehensive review of the CFI to fine-tune the initiative given the experience gained in the past years.

In October, the HKMA issued a revised Supervisory Policy Manual (SPM) module on *"Risk Management of E-banking"*. The revision sought to provide the industry with greater flexibility to meet changing customer expectations on electronic banking services. The HKMA also published a set of high-level principles on the use of artificial intelligence in order to provide guidance for the industry.

Since the social events started in June, the HKMA have maintained close dialogue with the industry to monitor the impact on banking operations and services. Banks were requested to replenish automated teller machines (ATMs) more frequently and repair vandalised facilities as soon as practicable. The HKMA also acted quickly to refute malicious rumours that sought to undermine the public's confidence in the banking system. Thanks to concerted efforts by the banking industry, the affected bank branches and facilities quickly resumed normal services and the inconvenience caused to the public was kept to a minimum. In view of the rising operational risk posed by the social events, banks were asked to take additional precautionary measures to strengthen their operational resilience.

Supervision of liquidity and market risk management

During the year, a round of thematic reviews was conducted to assess Als' capability to cope with liquidity shocks. The reviews focused on the robustness of Als' liquidity stress testing programmes and contingency funding management. The HKMA also assessed Als' compliance with the regulatory requirements on the calculation of the Liquidity Coverage Ratio (LCR) to ensure the prudence and accuracy of the inputs used for the calculation.

As algorithmic trading gained popularity in the banking industry, the HKMA conducted a round of thematic reviews to evaluate Als' risk management practices in this area. Considering that the London Interbank Offered Rate (LIBOR) might cease to be published after end-2021, the HKMA reminded Als to get prepared for the transition to alternative reference rates and conducted a survey to monitor their preparedness for the transition.

Combating money laundering and terrorist financing (ML/TF)

The HKMA carries out risk-based supervision of Als' AML/CFT systems. During the year, 18 on-site examinations and 61 off-site reviews were conducted, including targeted thematic reviews on private banking and the governance of the use of new technology. The HKMA shared with the industry the observations and best practices drawn from a thematic review of Als' application of risk-based AML/CFT controls for SMEs, in order to assist Als to adopt appropriate account opening processes and delivery of services for SMEs.

Banking Stability

Financial Action Task Force (FATF) Mutual Evaluation (ME) Report on Hong Kong

A highlight of 2019 for the HKMA and Hong Kong's overall AML/CFT regime was the publication of the FATF ME Report on Hong Kong in September. The Report represents one of the best overall results to date in the FATF's fourth-round ME of its member jurisdictions. Hong Kong scored six "Substantial" ratings out of 11 "Immediate Outcomes" in the assessment of the effectiveness of its AML/CFT regime², and a high mark for the technical compliance aspect of the ME.

The Report favourably assessed the HKMA's risk-based approach to AML/CFT supervision, noting that the HKMA had a good understanding of ML/TF risks in the banking sector and a reasonable understanding of risks in the stored value facility (SVF) sector. The Report also positively assessed the collective AML/CFT efforts of the banking sector, such as the increased use of data analytics by larger AIs, the fact that the great majority of suspicious transaction reports were filed by AIs, and the sector's proactive participation in the Fraud and Money Laundering Intelligence Taskforce (FMLIT).

The Report recommended several areas for improvement, including the understanding of some higher-risk areas, such as foreign corruption and tax crimes, and developing sectors such as SVFs. Work has already started to address these recommendations; the HKMA published an updated ML/TF Risk Assessment on the SVF sector in July and has commenced thematic on-site examinations on private banking and the governance of the use of new technology.



HKMA Deputy Chief Executive, Mr Arthur Yuen (fourth from left), and his team holds meetings with the FATF assessors in April.

² The effectiveness assessment in the ME covers 11 Immediate Outcomes, with each rated as "High", "Substantial", "Moderate" or "Low" to indicate the level of effectiveness. Each Immediate Outcome relates to a different aspect of the AML/CFT regime.

Banking Stability

To deepen collaboration within Hong Kong's AML/CFT ecosystem, the HKMA contributed to the review of the FMLIT, which was initially set up on a pilot basis, leading to its permanent establishment in June. The FATF ME Report recognised the contribution of this public-private information sharing platform to combating ML threats³. In response to the FATF's recommendations to enhance the FMLIT's performance, consideration is being given to further develop the FMLIT into a sustainable platform that leverages technology and data analytics to support the AML/CFT efforts of the banking sector.

Moreover, as part of its broader digitalisation programme, the HKMA is exploring how technology and data can help foster Hong Kong's AML/CFT ecosystem. In April, a consultancy study was initiated to recommend strategies and practical options to enhance the HKMA's AML/CFT surveillance capability through the greater use of technology and to support increased industry adoption of regulatory technology (Regtech). The HKMA hosted its first AML/CFT Regtech Forum in November. Around 400 representatives of AIs, Regtech companies and other stakeholders took part in the Forum to share their experiences and insights about the use of Regtech for AML/CFT purposes in a series of panel discussions and break-out sessions.

Throughout the year, the HKMA provided AML/CFT regulatory engagement to AIs through its Fintech Supervisory Chatroom and Sandbox, offering early supervisory responses to new ideas from the banking industry and supporting proofs of concept so that products could be tested and launched safely. A number of banks have already launched remote customer onboarding services following the discussion and testing through these channels. Remote onboarding will become more widely adopted as the virtual banks commence business. In February, the HKMA also issued key supervisory principles for meeting customer due diligence (CDD) obligations and applying the principle of risk-based approach in cases of remote account opening. In December, the HKMA provided guidance to the banking and SVF sectors on managing ML/TF risks associated with virtual assets and related service providers, making reference to the updated FATF Recommendation.

Supervision of wealth management and MPF-related businesses

The HKMA co-operates closely with other financial regulators in Hong Kong to provide guidance and supervise AIs' practices in the sale of securities, investment products, insurance products and MPF schemes. The HKMA also 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. During the year, the HKMA conducted 23 on-site examinations, 30 thematic reviews and 12 analyses of surveys and returns of AIs, covering the sale of investment, insurance and MPF products.

As part of its Balanced and Responsive Supervision initiative, the HKMA has streamlined and refined investor protection measures on the sale of investment, insurance and MPF products, and provided guidance accordingly to enhance customer experience. The refinements took into account evolving market conditions, customers' expectations and the HKMA's supervisory experience in recent years.

In respect of the investment-selling activities of registered institutions (RIs), the HKMA provided clarification and further guidance to RIs in July, in order to address industry comments on the implementation of enhanced investor protection measures governing the sale and distribution of debt instruments with loss-absorption features and related products. The HKMA provided further guidance to RIs in November on the prevention, detection, and mitigation of misconduct risks in the selling of investment funds.

In view of the technological advancements in recent years, the HKMA strengthened the surveillance of RIs' online distribution and advisory platforms through comprehensive surveys. To better identify risks associated with the selling activities and areas of concern, the HKMA worked with the Securities and Futures Commission (SFC) to launch an annual joint survey on the sale of non-exchange traded investment products.

³ Since its launch in May 2017 and up to the end of December 2019, the FMLIT delivered 454 intelligence-led suspicious transaction reports, leading to 181 arrests, HK\$616 million being restrained or confiscated, and HK\$106 million in losses prevented.

Banking Stability

In respect of the insurance-selling activities of AIs, the HKMA worked closely with the Insurance Authority (IA) on the implementation of the new statutory regime under the Insurance Ordinance (IO) for insurance intermediaries. Pursuant to the new statutory regime, which came into operation on 23 September 2019, the IA delegated to the Monetary Authority its inspection and investigation powers in relation to businesses of regulated activities under the IO carried on by AIs. To strengthen the co-operation between the two authorities, the HKMA entered into a new Memorandum of Understanding (MoU) with the IA setting out, amongst others, the arrangements on supervision, complaint handling and enforcement. With the introduction of tax incentives for qualifying deferred annuity policies in April, the HKMA issued a circular on the disclosure requirements in selling such products. In the light of the long-term nature, complexity, and increasing popularity of annuity insurance products, the HKMA issued a circular in September to enhance the customer protection measures applicable to AIs in selling such products. Furthermore, with the increasing popularity of medical insurance products, the HKMA issued two circulars in June and November to remind AIs to comply with the relevant regulatory requirements applicable to the sale of such products, in particular those on customer suitability and product disclosure.

The HKMA had completed the fieldwork of a mystery shopping programme (MSP) to check AIs' selling practices in respect of investment and insurance products, and will share the key observations and good practices with the industry.

During the year, the HKMA processed two applications relating to the addition of regulated activities of RIs. It granted consent to 148 executive officers responsible for supervising the securities activities of RIs, and conducted background checks on 9,450 individuals whose information was submitted by RIs for inclusion in the register maintained by the HKMA.

Other supervisory activities

The Banking Supervision Review Committee considered 18 cases concerning the granting of banking licences and approval of money brokers in 2019 (see Table 4 for details).

During the year, the HKMA commissioned 18 reports under section 59(2) of the Banking Ordinance (BO), which required AIs to appoint external professional firms to report on the effectiveness of their controls in specified areas of operation. Three of these reports covered credit risk management, another two covered AML/CFT controls, and the remaining reports were related to areas such as compliance with the BO and the adequacy of senior management oversight and the risk governance framework.

In 2019, there was no breach incident by AI on the requirements of the BO relating to the capital adequacy or liquidity ratio. There were 31 breaches of other provisions of the BO, mostly related to AIs' reporting obligations under the BO. These breaches did not affect the interests of depositors and were promptly rectified by the AIs.

During the year, the CAMEL Approval Committee completed a review of the CAMEL ratings of all the 196 AIs. No AI appealed against the Committee's decision.

Table 4 Summary of other supervisory activities

	2019	2018
1 Cases considered by the Banking Supervision Review Committee	18	5
2 Reports commissioned under section 59(2) of the BO	18	17
3 Approval of applications to become controllers, directors, chief executives or alternate chief executives of AIs	282	181

Banking Stability

International co-operation

Co-operation with overseas supervisors

The HKMA participated in 33 college-of-supervisors meetings organised by the home supervisors of 28 banking groups with significant operations in Hong Kong. A broad range of issues were discussed at these meetings, covering areas such as financial soundness, corporate governance, risk management and internal controls, and operational resilience.

The HKMA is a member of each of the Crisis Management Groups (CMGs) for 12 global systemically important banks (G-SIBs) attended by the relevant home and host authorities. On the regional level, the HKMA leads the regional resolution planning for a G-SIB with its Asia-Pacific headquarters in Hong Kong, organising the Asia CMG meeting, and is a member of the Asia-Pacific Recovery and Resolution Planning College for two other G-SIBs where resolution-related topics are discussed.

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

Participation in international and regional forums

The HKMA participates 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, and is represented on various Basel Committee working groups, including the Policy Development Group (PDG), the Macroprudential Supervision Group, the Supervision and Implementation Group (SIG), and the AML/CFT Expert Group. The HKMA is also a member of several sub-groups under (i) the PDG, including the Working Group on Capital, the Credit Risk Group, the Market Risk

Group, the Operational Resilience Working Group, the Working Group on Liquidity, the Large Exposures Group and the Working Group on Disclosure; and (ii) the SIG, including the Stress Testing Network, the Task Force on Financial Technology and the Colleges Monitoring Network. In addition, the HKMA chairs the SIG and the Risk Data Network under the SIG. The HKMA also participates in the joint Working Group on Margin Requirements formed by the Basel Committee and the International Organization of Securities Commissions (IOSCO).

On AML/CFT, besides the AML/CFT Expert Group under the Basel Committee, the HKMA also participates actively in plenary meetings of the FATF and the Asia/Pacific Group on Money Laundering, as part of its efforts in combating ML/TF with the most up-to-date international standards and practices.

The HKMA is a member of the Financial Stability Board (FSB) Plenary Meeting, the FSB Standing Committee on Assessment of Vulnerabilities and the FSB Standing Committee on Supervisory and Regulatory Co-operation. It also participates in several FSB working groups, including the Over-The-Counter (OTC) Derivatives Working Group, the Compensation Monitoring Contact Group, the Official Sector Steering Group on Financial Benchmarks, and the Working Group on Non-Bank Financial Intermediation. In the area of resolution, and in addressing the problem of “too big to fail”, the HKMA is a member of the FSB Resolution Steering Group (ReSG) and the FSB Cross-border Crisis Management (CBCM) Working Group for banks.

At the regional level, the HKMA is a member of the Executives’ Meeting of East Asia-Pacific Central Banks (EMEAP)⁴, the South East Asia, New Zealand and Australia Forum of Banking Supervisors, and the South-East Asian Central Banks group.

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

Banking Stability

As part of its work in the EMEAP Working Group on Banking Supervision (WGBS), the HKMA is the champion of the Interest Group on Liquidity (IGL). During the year, the IGL exchanged views and shared experience regarding the implementation of Basel III liquidity standards in the EMEAP jurisdictions. The HKMA is also the chair and serves as the secretariat of the Focused Meeting on Resolution (FMR), a resolution-specific forum under the WGBS. The FMR supports knowledge sharing and discussion among regional authorities in relation to resolution in a cross-border context. See *“International policy and stakeholders’ engagement”* on page 94 for more details.

Financial Sector Assessment Program (FSAP)

Following the previous full assessment completed in 2014, the International Monetary Fund (IMF) commenced the update of FSAP assessment for Hong Kong in 2019. Emerging issues and new developments in banking regulation and supervisory practices with respect to the Basel Core Principles for Effective Banking Supervision and the changes to financial safety net and crisis management framework in Hong Kong since the last FSAP were reviewed. The HKMA completed a set of comprehensive questionnaires and held extensive meetings with the FSAP assessors during their on-site visit in September to discuss the latest development. The HKMA and the FSAP assessors also conducted a series of liquidity and solvency stress tests on the banking sector. Meetings were arranged for the FSAP assessors to meet government officials, private sector representatives (including banks, audit firms and credit rating agencies) and relevant stakeholders to deepen their understanding of the latest financial development and facilitate their comprehensive review of Hong Kong’s financial sector. The FSAP update is still underway and the assessment is expected to be completed in 2020. The HKMA will continue to work closely with the IMF and carefully consider any recommendations.

Basel Committee Regulatory Consistency Assessment Programme (RCAP)

The Basel Committee conducts a RCAP to monitor, assess and evaluate its members’ implementation of the Basel standards. The RCAP assessment of Hong Kong, covering the large exposures framework and Net Stable Funding Ratio (NSFR), was conducted in 2019. The RCAP reports for Hong Kong were published in March 2020. Overall, Hong Kong’s large exposures and NSFR regulations were assessed as “compliant” with the Basel standards.

In addition to being assessed under the RCAP, the HKMA led an international team of technical experts to conduct an assessment of the implementation of the large exposures and NSFR standards in Australia. The reports of the assessment were published in July 2019. Furthermore, the HKMA participated in assessing the large exposures standards of Brazil, leading to the publication of the corresponding report in March 2019, and it is now taking part in evaluating Japan’s large exposures standards.

Banking Stability

Implementation of Basel Standards in Hong Kong

Exposure limits

A full set of Banking (Exposure Limits) Rules (BELR) made under section 81A of the BO took effect on 1 July 2019 to replace the former BO provisions on exposure limits. The BELR aim to implement the 2014 Basel Committee standard on the *Supervisory Framework for Measuring and Controlling Large Exposures* and also to update other exposure limits to keep pace with market developments and contemporary risk management techniques. Certain provisions of the BELR were subject to a six-month implementation grace period which ended in December 2019.

Capital standards

The process of making rules continued for the implementation of three Basel Committee capital standards, viz. *The Standardised Approach for Measuring Counterparty Credit Risk Exposures* (SA-CCR), *Capital Requirements for Bank Exposures to Central Counterparties* (CCP standard) and *Capital Requirements for Banks' Equity Investments in Funds* (EIF standard). In view of industry comments and the latest implementation schedules of major markets, the SA-CCR and the CCP standard are targeted for implementation in Hong Kong sometime around mid-2021. Amendments to the Banking (Capital) Rules (BCR) on implementing the SA-CCR and the CCP standard were issued in March 2020 for statutory consultation as required under the BO before being finalised for submission to the Legislative Council. For the EIF standard, proposed amendments to the BCR were being prepared in consultation with the industry.

To inform policy formulation for the implementation of the “*Basel III: Finalising Post-crisis Reforms*” published by the Basel Committee in December 2017 (“Final Basel III package”), the HKMA conducted a local quantitative impact study (QIS) on a representative sample of local banks, covering the estimated impacts of the revised internal ratings-based (IRB) approach, the revised standardised approach for credit risk, the revised operational risk framework and the output floor. The HKMA initiated another QIS exercise in March 2020, covering the revised market risk framework issued by the Basel Committee.

On 14 October 2019, the HKMA reduced the jurisdictional Countercyclical Capital Buffer for Hong Kong from 2.5% to 2.0% with immediate effect to allow banks to be more supportive of the domestic economy. 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 2020 and their corresponding higher loss-absorbency capital requirements.

Interest rate risk in the banking book (IRRBB)

On 1 July 2019, the new local IRRBB framework came into effect. The framework is based on the 2016 Basel Committee standards on “Interest rate risk in the banking book” and follows a standardised approach. It provides for a more sophisticated and comprehensive set of measures to identify banks with significant IRRBB exposures.

Disclosure standards

Further to the implementation of the first and second phases of the Basel Committee’s revised Pillar 3 disclosure requirements, the HKMA consulted the industry and issued in March a set of revised standard disclosure templates and tables to incorporate disclosure requirements set out in the document “*Technical Amendment — Pillar 3 Disclosure Requirements: Regulatory Treatment of Accounting Provisions*”, released by the Basel Committee in August 2018, together with a few regulatory updates.

Liquidity standards

The Banking (Liquidity) (Amendment) Rules 2019 were introduced to (i) recognise Basel-compliant listed ordinary shares and triple-B rated marketable debt securities as “level 2B assets” under the LCR and (ii) implement a required stable funding requirement on total derivative liabilities under the NSFR, in line with the Basel Committee’s current guidance. Similar amendments were also made to the Liquidity Maintenance Ratio and the Core Funding Ratio. The amendments took effect on 1 January 2020.

Banking Stability

Improving Supervisory Policy Framework

Regulation of over-the-counter derivatives transactions

The HKMA introduced global margin and risk mitigation standards in 2017 for Als involved in non-centrally cleared OTC derivatives transactions. The initial margin requirements have been implemented in phases since 1 March 2017, expanding the scope of covered entities. To support a smooth and orderly implementation of the margin requirements, the HKMA will adopt the revised implementation schedule as announced by the Basel Committee and IOSCO. The HKMA will continue to monitor Als' implementation of the remaining phases and co-ordinate with other member jurisdictions of the Basel Committee and IOSCO Working Group on Margin Requirements on the implementation and market developments.

Updating other supervisory policies and risk management guidelines

The HKMA finalised and issued the revised SPM module on *"Guideline on the Application of the Banking (Disclosure) Rules"* in August. The revisions updated the interpretative guidance on the application of the Banking (Disclosure) Rules, which have been amended substantially since 2017 to incorporate the first two phases of the Basel revised Pillar 3 disclosure requirements.

The HKMA consulted the industry on proposed revisions to SPM module RE-1 on *"Recovery Planning"*, to reflect developments in international and local standards and practices in the recovery planning of Als.

In connection with the implementation of the BELR, the HKMA revised the SPM modules CR-G-8 *"Large Exposures and Risk Concentrations"*, CR-G-9 *"Exposures to Connected Parties"*, CR-L-1 *"Consolidated Supervision of Concentration Risks: BELR Rule 6"*, CR-L-3 *"Letters of Comfort: BELR Rule 57(1) (d)"*, CR-L-4 *"Underwriting of Securities: BELR"* and CR-L-5 *"Major Acquisitions and Investments: BELR Part 3"*. Key

revisions in these SPM modules provide elaborations on the supervisory approaches, policy intent and implementation guidance on BELR provisions. In addition, the Banking (Exposure Limits) Code was issued to provide technical clarifications to the BELR.

On Pillar 2 of the capital framework, the SPM module CA-G-5 on *"Supervisory Review Process"* was updated in relation to the local implementation of Basel standards on interest rate risk in the banking book, liquidity risk and large exposures, and to keep abreast of other latest publications issued by the Basel Committee, particularly on securitisation. The revised module was finalised and issued in January 2020.

On liquidity, the SPM module LM-1 on *"Regulatory Framework for Supervision of Liquidity Risk"* was revised to reflect changes consequential to the commencement of the Banking (Liquidity) (Amendment) Rules 2019 and to keep pace with the latest developments.

In May, the HKMA issued to the industry a proposed revision of the SPM module on *"Guideline on a Sound Remuneration System"*, mainly to align with the latest international regulatory guidance on remuneration practices.

Review of supervisory documents

During the year, a review of supervisory documents was conducted to enhance the completeness of guidelines and circulars maintained on the Supervisory Communication Website, which is the restricted website for the HKMA's supervisory communication with Als, and to improve the user-friendliness of these documents by refining their structure, classification, and drafting styles. The completeness of the supervisory documents was verified and established with reasonable assurance. Foundational work was also concluded on refining the structure, classification, and drafting style of supervisory documents.

Banking Stability

Compliance with regulatory regime for over-the-counter derivatives market

The HKMA monitors closely the compliance of AIs and approved money brokers (AMBs) based on the mandatory reporting, clearing, and related record-keeping requirements on OTC derivatives transactions as stipulated in the Securities and Futures Ordinance. Close dialogue is maintained with AIs, AMBs and other industry participants on various reporting issues to facilitate their compliance with the relevant requirements arising from OTC derivatives market developments and evolving international standards.

Balanced and responsive supervision

The HKMA engages with the banking industry to optimise supervisory policies and processes to maintain an appropriate balance between supervisory effectiveness and sustainable market development. In 2019, the HKMA obtained useful input from banks to refine policies on the risk management of e-banking and investor protection measures, and to develop guiding principles on customer protection relating to banks' use of big data analytics and artificial intelligence. Banks' input provided insights from various perspectives, such as compliance effectiveness, the adoption of new technologies and the improvement of customer experience. Through a structured feedback process, the HKMA gained a better understanding of possible policy implications for banks before reaching a conclusion on policy refinements.

The HKMA also had constructive discussions with the banking sector on how to mitigate the risk of hiring individuals with a history of misconduct. The industry feedback was useful for the HKMA to develop detailed policy proposals.

Accounting standards

With the implementation of International Financial Reporting Standard 9 (IFRS 9) *Financial Instruments* in 2018, the HKMA has continued to improve its understanding of approaches adopted by AIs to provide for expected credit loss (ECL) and to adjust the ECL in response to changing economic conditions. The HKMA also participated in discussions with other regional authorities on the regulatory and supervisory implications of ECL implementation.

Regular dialogues were conducted 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 international and domestic developments on new or revised accounting, auditing and financial reporting standards and their implications for banks, as well as major international and domestic banking regulatory developments.

Green and sustainable banking

The HKMA conducted a survey on selected AIs in April to understand local developments in green and sustainable banking. In May, as part of its measures to support Hong Kong's green finance development, the HKMA announced a three-phased approach to promote green and sustainable banking.

During the year, to develop a framework to assess the "greenness" baseline of AIs, a working group consisting of representatives from 22 AIs was formed, and had convened meetings to exchange views on how the framework should be structured. In December, the HKMA consulted the industry on a draft assessment framework.

For more details about the HKMA's policy framework for green and sustainable banking, see the *Corporate Social Responsibility* chapter.

Banking Stability

Resolution

In 2019, the HKMA continued to make significant progress in advancing its objectives on resolution policy, resolution planning and resolution execution capability. Table 5 below provides a high-level overview of the progress to date in establishing and operationalising the resolution regime for Als in Hong Kong.

Table 5 HKMA's progress in developing an operational resolution regime for Als⁵

	2018 and before	2019	2020 and beyond
Resolution Framework	<ul style="list-style-type: none"> • FIRO came into effect • Protected Arrangements Regulation came into effect • Published CoP chapter RA-1 • Designated as lead resolution authority for cross-sectoral G-SIB groups in Hong Kong 	<ul style="list-style-type: none"> • Continued to operationalise resolution regime 	Review and update FIRO as appropriate
Resolution Standards	<ul style="list-style-type: none"> • Published CoP chapters RA-2 and CI-1 • LAC Rules came into effect • Updated CHATS scheme rules to support continuity of access for Als in resolution 	<ul style="list-style-type: none"> • Published CoP chapter LAC-1 and LAC Disclosure Templates • Developed proposals on rules to contractually stay the exercise of early termination rights in resolution • Updated CMU scheme rules to support continuity of access for Als in resolution 	Ensure standards are in place to address impediments to resolvability
Resolution Planning	<ul style="list-style-type: none"> • Established resolution planning programmes and determined preferred resolution strategies for all D-SIBs • Worked with an AI to set up a new clean holding company and a service company in Hong Kong • Advanced regional resolution planning and cross-border co-operation • Promoted a co-ordinated approach to cross-border LAC pre-positioning 	<ul style="list-style-type: none"> • Implemented LAC requirements for D-SIBs, building up a new layer of LAC resources • Advanced resolution planning for D-SIBs, assessing and removing impediments to orderly resolution • Continued leading regional resolution planning including organising regional meetings • Carried out cross-border resolution planning at 12 CMGs and other Resolution Colleges 	Ensure priority Als are resolvable by their compliance with resolution standards
HKMA's Execution Capability	<ul style="list-style-type: none"> • Established HKMA Resolution Office • Developed Watchlist Framework and cross-departmental bank crisis co-ordination framework • Established CMCG • Conducted crisis simulation exercises 	<ul style="list-style-type: none"> • Established resolution facility as part of the HKMA updated Liquidity Facilities Framework • Operated CMCG and enhanced related crisis management frameworks • Completed tender process for the Resolution Advisory Framework 	Establish operational capability to execute an orderly resolution
International Policy and Stakeholders' Engagement	<ul style="list-style-type: none"> • Contributed to FSB resolution policy development through membership at the FSB ReSG and the FSB CBCM Working Group for banks, chairing the FSB Legal Experts Group, as well as co-chairing the FSB CBCM Internal TLAC Workstream • Promoted the setup of EMEAP's new FMR 	<ul style="list-style-type: none"> • Continued contributing to international and regional policy developments, including chairing the FSB thematic peer review on bank resolution planning which published its report in April • Chaired EMEAP's FMR, held workshop and conference calls 	Contribute to international and regional resolution development

⁵ See <https://www.hkma.gov.hk/eng/key-functions/banking/bank-resolution-regime/> for details of the FIRO CoP chapters mentioned in the table.

Als — Authorized institutions
CBCM — Cross-border Crisis Management
CHATS — Clearing House Automated Transfer System
CMGs — Crisis management groups
CMCG — Crisis Management Coordination Group
CMU — Central Moneymarkets Unit
CoP — Code of Practice
D-SIBs — Domestic systemically important banks
EMEAP — Executives' Meeting of East Asia-Pacific Central Banks

FIRO — Financial Institutions (Resolution) Ordinance
FMR — Focused Meeting on Resolution
FSB — Financial Stability Board
G-SIB — Global systemically important bank
LAC — Loss-absorbing capacity
LAC Rules — Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements — Banking Sector) Rules
ReSG — Resolution Steering Group
TLAC — Total loss-absorbing capacity

Banking Stability

Resolution standards

Formulation of policies and standards on loss-absorbing capacity (LAC) continued to be a priority for the HKMA in 2019. The Financial Institutions (Resolution) Ordinance (FIRO) Code of Practice (CoP) chapter “LAC-1 Resolution Planning – LAC Requirements” was issued on 20 March. Following that, the Monetary Authority published on 31 October the standard disclosure templates (LAC Disclosure Templates) for resolution entities and material subsidiaries under the Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules (LAC Rules). The LAC Disclosure Templates are modelled on relevant templates from the Basel Committee’s March 2017 publication on *Pillar 3 disclosure requirements – consolidated and enhanced framework*. The progress made by Hong Kong in adopting FSB Total Loss-Absorbing Capacity (TLAC) Standard-consistent policy was acknowledged in the FSB’s report on the *Review of the Technical Implementation of the TLAC Standard* published in July.

A major potential impediment to resolvability is the disorderly early termination of financial contracts in resolution. To address this impediment, the HKMA worked to develop policy proposals for making rules under the FIRO on contractual stays for AIs. The proposals require contractual provisions to be adopted in certain financial contracts that are not governed by Hong Kong law, to give effect to a suspension of termination rights (a “stay”) that may be imposed by the Monetary Authority as a resolution authority under the FIRO; this would implement the relevant FSB principles in this regard. The consultation paper setting out the HKMA’s policy proposals was published on 22 January 2020 with a consultation period of two months.

The HKMA has taken further industry-wide steps to ensure the orderly management in the event of an AI’s failure. Building on previous work to implement the FSB’s *Guidance on Continuity of Access to Financial Market Infrastructures for a Firm in Resolution*, the HKMA worked with the Central Moneymarkets Unit (CMU) to update CMU member agreements and documentation to reflect restrictions imposed by the FIRO on termination or suspension of access to clearing and settlement services in respect of an AI in resolution.

Resolution planning

The HKMA continued to advance resolution planning for each of the D-SIBs. As part of bilateral resolution planning programmes with these AIs, changes needed to address identified impediments to their resolvability based on their respective preferred resolution strategy are being implemented.

In particular, the D-SIBs are building up a new layer of LAC resources to facilitate their loss absorption and recapitalisation in case of failure, which would reduce the risks to financial stability that may be posed by their non-viability. The HKMA worked closely with the D-SIBs and the relevant home authorities in 2019 on these AIs’ plan to build up capital and non-capital LAC resources via external or cross-border intra-group issuances. Each of the D-SIBs has been classified by the Monetary Authority as a resolution entity or a material subsidiary pursuant to the LAC Rules in line with the preferred resolution strategy. Some D-SIBs have started complying with their LAC requirements and making public disclosures on their LAC positions.

Banking Stability

New operational capabilities and arrangements are being put in place by some of the D-SIBs through group-wide programmes to ensure continuity of their businesses in resolution. This has involved a wide spectrum of actions, such as service interdependencies mapping, updates of operational contract provisions, solvent wind-down analysis of trading portfolios, and cross-border fire drill testing of contingency arrangements for access to payment clearing.

The HKMA led the regional resolution planning for a G-SIB with its Asia-Pacific headquarters in Hong Kong, organising the Asia CMG meeting and driving the work to enhance resolvability for the G-SIB's Asia resolution group.

In addition, the HKMA participated in the cross-border resolution planning of G-SIBs through its membership in 12 CMGs and other Resolution Colleges. In 2019, the HKMA contributed to the FSB's resolvability assessment processes of these G-SIBs, took part in meetings overseas organised by the relevant home authorities, and worked with these home authorities on initiatives to address impediments to resolvability. In addition, the HKMA hosted some CMGs and Resolution College meetings in Hong Kong.

HKMA's resolution execution capability

The HKMA continued to refine its internal frameworks for effective cross-departmental co-ordination in managing at-risk Als, taking into account implementation experiences and the outcome of crisis simulation exercises.

With the publication of an updated Liquidity Facilities Framework for Banks in August, work on the design of liquidity facilities needed to operationalise the resolution funding arrangements under the FIRO reached a significant milestone. See *"Updated Liquidity Facilities Framework for Banks"* for more details.

In addition, the HKMA published a Quarterly Bulletin article in September on the mechanism set out in the resolution regime for the ex-post recovery of public money, underscoring the authority's intent to recoup, from the wider financial system, public money paid into the resolution funding account and used in a resolution but not repaid on completion of the resolution.

The HKMA made progress with the establishment of a Resolution Advisory Framework and completed the tender process for the Framework, which is designed to enable the Monetary Authority to appoint external advisers efficiently to support the discharging of functions as a resolution authority under the FIRO. It comprises five advisory panels covering broad areas of expertise on legal; financial and valuation analysis; corporate financial advisory; operational review and analysis; and restructuring analysis.

Banking Stability

Updated Liquidity Facilities Framework for Banks

Since the global financial crisis in 2008, regulatory reforms have been developed at the global level and implemented in Hong Kong to improve the resilience of banks and reduce systemic risk. In the context of these reforms, central bank liquidity remains a crucial tool in the financial stability toolkit.

Operationalising the provisions in the FIRO for funding in resolution for banks ensures a credible resolution regime. In 2019, the HKMA introduced a new Resolution Facility, which may be deployed in the context of a resolution where the circumstances so warrant, as part of the updated Liquidity Facilities Framework.

At the same time, the HKMA incorporated some refinements to the pre-existing liquidity support arrangements in an updated Liquidity Facilities Framework. It includes the various facilities through which the HKMA may provide banks with temporary Hong Kong dollar liquidity (i.e. not in the nature of capital support), to maintain the integrity and stability of the monetary and financial systems in Hong Kong.

The Framework effectively brings the existing Hong Kong dollar liquidity facilities together, with refinements introduced as appropriate. The Framework includes Settlement Facilities for intraday and overnight repo; Standby Liquidity Facilities, under which banks can access term liquidity against collateral, including liquid securities denominated in major currencies; and a Contingent Term Facility that makes reference to the guiding principles of the previous Lender of Last Resort arrangements and provides lending, at the discretion of the HKMA, against a wide spectrum of collateral in cases of extraordinary liquidity stress.

The updated Liquidity Facilities Framework takes forward a key recommendation in the FSB's 2018 Peer Review of Hong Kong and marks a significant development in the HKMA's ability to respond to both idiosyncratic and systemic liquidity stress.

International policy and stakeholders' engagement

Internationally, the HKMA is actively involved in the implementation of resolution reforms through its membership at the FSB. In the FSB's 2019 *Resolution Report: "Mind the Gap"*, its eighth report on the implementation of resolution reforms, the FSB reports that G-SIBs have been made more resolvable through the build-up of TLAC and other measures, while pointing out the remaining gaps. See *"HKMA's Involvement in International Resolution Policy Work in 2019"* for more details on the HKMA's involvement in international resolution policy work.

At the regional level, the HKMA participates actively in knowledge sharing and discussions with regional authorities in relation to resolution in a cross-border context. As the Chair and Secretariat of the EMEAP's FMR, the HKMA hosted a resolution workshop of the FMR in Hong Kong in April.

The workshop provided a platform for FMR member authorities to share knowledge on cross-border resolution topics, such as (i) the setting of preferred resolution strategies; and (ii) policies and standards on addressing impediments to the resolvability of banks (please refer to pages 86 and 87 for further information on other EMEAP work).

Locally, the HKMA engages the industry and various external stakeholders actively through meetings with the management of Als, rating agencies, law firms and industry associations. These serve to promote better understanding of the resolution regime in Hong Kong and the implications on Als, their counterparties and investors, and the wider market so as to enhance the credibility of the resolution regime.

Banking Stability

HKMA's Involvement in International Resolution Policy Work in 2019

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 all G-SIBs⁶.

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 part actively in formulating and implementing international resolution policy standards. The HKMA has been contributing primarily through its membership at the FSB ReSG and the FSB CBCM Working Group for banks. The HKMA also participates in a number of virtual workstreams to help advance implementation work on bail-in execution and continuity of access to FMI.

An important aspect of the FSB's resolution work is to support timely and consistent implementation, and to evaluate implementation progress made by FSB members. To this end, the FSB's thematic peer review on resolution planning, chaired by the HKMA, published its report in April. The report makes recommendations for the FSB and its member jurisdictions on resolution planning based on the findings of the review.

Further to the FSB report on its technical review of the implementation of the TLAC Standards, FSB members continued to work through the technical issues identified, including strengthening the understanding of home and host jurisdictions' approaches towards the pre-positioning of financial resources. As part of a follow-up to this work, the HKMA participated in an FSB workshop in September which discussed, among other things, cross-border management of capital and liquidity to help strengthen mechanisms and approaches to addressing market fragmentation. The HKMA also acted as the moderator for one of the panels at the workshop.

The HKMA contributed to a number of international discussions related to financial stability, for instance, by sharing its practices on crisis simulation exercises, both domestically and cross-border, to increase preparedness. In 2019, the HKMA participated in nine FSB meetings and workshops, some of which were hosted by the HKMA in Hong Kong.

⁶ See <https://www.fsb.org/wp-content/uploads/P221119-1.pdf> for the 2019 list of G-SIBs.

Banking Stability

Bank consumer protection

Code of Banking Practice

The industry's overall compliance with the Code of Banking Practice remains satisfactory. The industry has completed a self-assessment exercise covering 2018. Als' subsidiaries and the affiliated companies controlled by them, which are not Als and are not licensed, regulated or supervised by any financial regulators in Hong Kong, should also observe the Code when providing banking services in Hong Kong, where applicable. According to the self-assessment results, all Als as well as their subsidiaries and affiliated companies reported full or nearly full compliance⁷, while a few Als have taken prompt remedial action to rectify areas of non-compliance.

Consumer protection in the digital age

In the light of the digital age, the HKMA consistently reviews and strengthens consumer protection policy on digital financial services. In order to strike a balance between innovation and consumer protection, Als should adopt a risk-based approach and implement consumer protection measures that are commensurate with the risks involved. In view of the development of innovative technology in banking under the "Open API Framework for the Hong Kong Banking Sector", the HKMA issued a circular in October to remind Als to adopt adequate consumer protection measures in Open Application Programming Interface (Open API) initiatives, and to clarify that Als are allowed to engage third-party service providers under the Open API Framework as lending intermediaries. The HKMA issued another circular in November to provide Als with a set of guiding principles on the consumer protection aspects of Als' use of big data analytics and artificial intelligence. These guiding principles focus on four major areas, namely governance and accountability, fairness, transparency and disclosure, and data privacy and protection.

In May, the HKMA was awarded the "Best Conduct of Business Regulator in Asia Pacific" at the Asian Banker's Leadership Achievement Awards 2019, as a recognition of the HKMA's conduct supervision efforts in pursuing a consistent and holistic programme to promote consumer and investor protection, including those related to digital financial services.



The HKMA receives the "Best Conduct of Business Regulator in Asia Pacific" award from the Asian Banker.

⁷ With five or fewer instances of non-compliance.

Banking Stability

Financial inclusion

The HKMA, together with the Hong Kong Association of Banks (HKAB), introduced an initiative to extend the online retrieval period of e-Statements to a minimum of seven years, in order to enhance customer experience in the light of the increasing popularity of digital financial services. By the end of the first quarter of 2020, all retail banks offering e-Statements should start to incrementally accumulate over time e-Statements for a cycle period of at least seven years for online retrieval by individual retail customers. The HKMA issued a circular in September to set out the implementation details.

In promoting financial inclusion, the HKMA has encouraged retail banks to pay special attention to customers in need. During the year, a majority of retail banks removed fees previously imposed on low account balances and eliminated other service charges for various types of accounts for individual retail customers to further facilitate access to basic banking services. The industry worked with EPS Company and Hongkong Post to further extend a cash withdrawal service for the elderly, dispensing with the need to make purchases to all 167 Post Offices and Mobile Post offices. This added to the over 300 outlets of convenience store chains which are already providing such a service.

The HKMA has been monitoring the industry's implementation of the Practical Guideline on Barrier-free Banking Services, which sets out measures to facilitate access by customers with physical disabilities, visual impairment, or hearing impairment. The implementation progressed well in the year, showing the industry's commitment in enhancing barrier-free access. For example, over 94% of bank branches were wheelchair accessible, 1,066 voice navigation ATMs were in operation, and assistive listening systems were available at 663 branches.



HKMA's then Chief Executive, Mr Norman Chan (third from left), visits a new bank outlet.

Banking Stability

Opening and Maintaining Bank Accounts

The HKMA attaches great importance to the access of banking services by corporates in Hong Kong and works closely with the banking industry and the business community to tackle the associated issues of opening and maintaining bank accounts in Hong Kong.

While financial institutions around the world, including banks in Hong Kong, have generally strengthened their AML/CFT controls in line with international standards, the HKMA has issued guidance to remind banks to apply a risk-based approach to the CDD process at account opening and maintenance, and not to create unreasonable hurdles for legitimate businesses to access banking services. Banks are also required, throughout the CDD process, to maintain proper communication with customers, to be transparent, reasonable and efficient, and to observe the principle of “treating customers fairly”.

In response to the HKMA’s guidance, the banking industry has introduced various improvement measures for the account opening process. Under the encouragement of the HKMA, some banks have started launching the Simple Bank Accounts (SBAs) service in March and April to provide basic banking services with less extensive CDD measures to eligible corporate customers based on their actual business needs. SBA customers that require more comprehensive banking services in the future may upgrade their accounts to traditional bank accounts by completing the standard CDD process. SBAs offer bank customers another banking option while helping to address the needs of corporate customers at different stages of their development. In April, the HKMA issued a circular encouraging more banks to launch SBAs to provide corporate customers with more choices. Customers’ feedback has been positive, suggesting considerable demand for this type of service.

The HKMA completed an MSP, focusing on the customer interface aspect of Als’ account opening processes for SMEs and ethnic minority customers, to assess the effectiveness of Als’ improvement measures and practices on the ground. The HKMA also completed a thematic review on the application of AML/CFT requirements for the SME segment. The results of the MSP and the thematic review were shared with Als in June through circulars.

To maintain communication with the business community, the HKMA’s dedicated Account Opening and Maintenance Team handles and follows up on enquiries and feedback received from the public as well as the local and overseas business communities via a dedicated email account (accountopening@hkma.gov.hk) and a hotline (+852 2878 1133).

The HKMA works closely with the industry to promote a greater use of technology, including remote onboarding initiatives, to optimise banks’ CDD process and allow customers to enjoy greater transparency and efficiency in the process.

With the concerted efforts of the HKMA and the banking industry, improvements were made in account opening processes and customer experience.

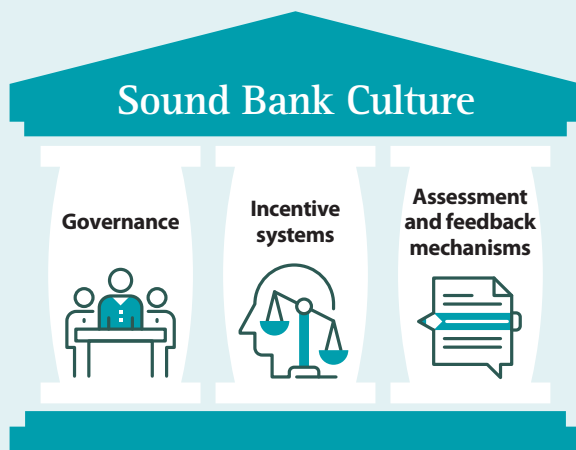
- ◆ The retail banking sector opens on average about **10,000** new business accounts per month, of which **around 50%** involved SMEs and start-up companies.
- ◆ The average unsuccessful rate of account opening applications is currently **around 5%**, representing a significant improvement from around 10% in early 2016.

The HKMA will continue to work with the banking industry, business community, and relevant stakeholders to deal with account opening and maintenance. The HKMA aims to maintain a robust AML/CFT regime in Hong Kong which would not undermine access by legitimate businesses and ordinary residents to basic banking services.

Banking Stability

Bank Culture

The HKMA promotes bank culture reform by encouraging Als to foster a sound culture within their institutions through three pillars: (1) governance, (2) incentive systems, and (3) assessment and feedback mechanisms.



Supervisory measures on improving bank culture include self-assessment, focused reviews and culture dialogues. Following the announcement of these measures in December 2018, the HKMA started the self-assessment exercise in early 2019 by requiring 30 Als, including all major retail banks and selected foreign bank branches, to assess their own culture enhancement efforts and benchmark themselves against the findings of major conduct incidents outside Hong Kong. The HKMA also reminded the other Als which were not covered in the first phase of the self-assessment exercise to review their own culture enhancement efforts. The HKMA has been going through the Als' self-assessment reports obtained from the first phase to draw insights from the submissions, with a view to providing a range of practices for industry reference, identifying common emerging themes, and informing the HKMA's future work on bank culture supervision.

At the same time, the HKMA began culture dialogues with four Als in 2019. Under this initiative, the HKMA meets with the senior management and/or board members of Als responsible for bank culture to conduct in-depth discussions on the effectiveness of their culture enhancement efforts. The dialogues also give the HKMA an opportunity to provide supervisory feedback, including the observations gathered through the HKMA's ongoing supervision.

During the year, the HKMA continued to engage with the industry in promoting bank culture and maintain dialogue with other regulators on the development of bank culture. The HKMA also attended and spoke at conferences, seminars and events on bank culture.



Banking Stability

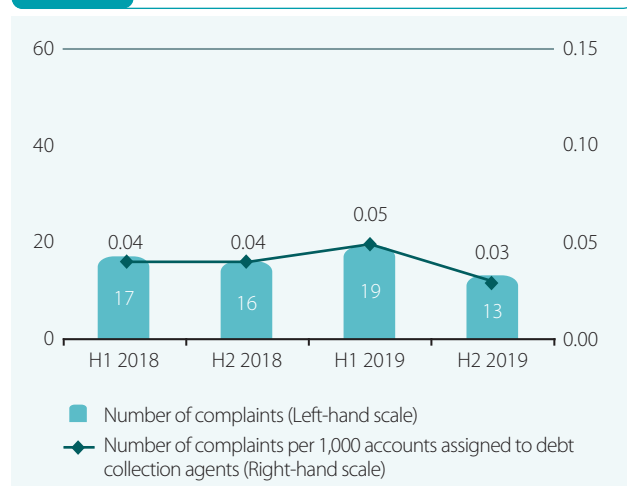
Engagement of intermediaries by authorized institutions

Various measures were introduced to further protect the interests of bank customers and reduce potential risks to the reputation of the banking industry arising from possible malpractices undertaken by fraudulent lending intermediaries. In particular, the HKMA reminded the public to stay alert to bogus phone calls. Retail banks' hotlines have been widely and effectively used by the public to verify callers' identities, with a total of over 17,000 enquiries received during the year.

Customer complaints relating to debt collection agents employed by authorized institutions

The number of complaints received by AIs about their debt collection agents decreased to 32 from 33 in 2018 (Chart 2). The HKMA will continue to monitor AIs' engagement with debt collection agents.

Chart 2 Complaints received by AIs about their debt collection agents



Credit data sharing

The HKMA continued to work with the banking industry to follow up on a security incident involving TransUnion, an organisation providing consumer credit reference services, in relation to possible security loopholes in the application procedures for credit reports maintained by the company. In the security incident, which came to light in the fourth quarter of 2018, some personal data on the TransUnion database was allegedly accessed by an unauthorised party. The HKMA and the HKAB have been following up closely with TransUnion on its investigation into the incident, the subsequent comprehensive upgrading of its information security system, and an independent review on the enhanced security controls. In December, the Office of the Privacy Commissioner for Personal Data (PCPD) published an investigation report on the data breach, finding that TransUnion had contravened the data security principle under the Personal Data (Privacy) Ordinance in terms of its online authentication procedures. PCPD directed TransUnion to take remedial action and prevent any recurrence of such contravention. TransUnion's online enquiry services on personal credit reports were suspended throughout 2019.

Deposit protection

The Deposit Protection Scheme (DPS) provides protection to each depositor up to a limit of HK\$500,000 per bank.

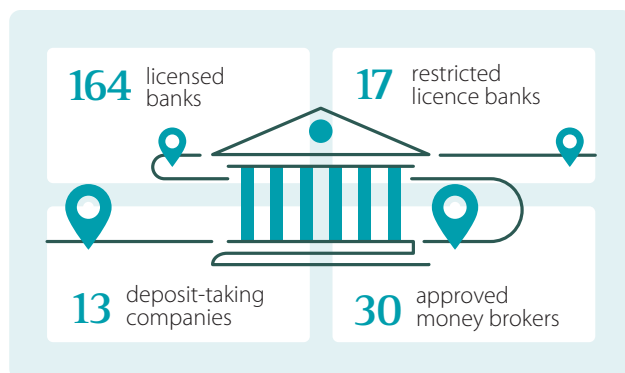
To supplement traditional paper cheque payments for DPS compensation, the Hong Kong Deposit Protection Board (HKDPB) undertook a two-year project to implement electronic payment channels. Such payment channels, including the Faster Payment System (FPS), will provide depositors with safe, faster and more convenient access to compensation payment. A payout rehearsal was conducted in November to ensure HKDPB's co-ordination with payout agents and to test the payout operations using the new system. The results have once again attested that making compensation payments to the majority of eligible depositors within seven days is an achievable target.

Banking Stability

To tie in with the Year of the Pig, a new “DPS Piggy Bank”-themed advertising campaign and a roving exhibition of piggy bank art pieces were launched to promote public awareness of the DPS. A new board game was developed to disseminate DPS knowledge to lower primary students.

Licensing

At the end of 2019, Hong Kong had 164 licensed banks, 17 restricted licence banks, 13 deposit-taking companies, and 30 AMBs. During the year, the HKMA granted banking licences to eight locally incorporated companies to operate virtual banks, three overseas banks to operate a branch in Hong Kong and one local restricted licence bank to upgrade its authorization status, thereby further enhancing financial inclusion and the diversity of banking services in Hong Kong. The HKMA also granted money broker approvals to six foreign inter-dealer brokers and trading platform operators. The authorizations of three deposit-taking companies were revoked during the year.



Enforcement

Banking complaints

The HKMA received 1,950 complaints against AIs and/or their staff members in 2019, and completed the handling of 1,974 cases. At the end of the year, 390 cases remained outstanding (Table 6). In addition, there was a sharp rise in the number of informant reports to the HKMA against AIs and/or their staff members, with 493 cases in 2019 compared with 113 cases in 2018. The reports involved mainly alleged data leakage or concerns about certain bank accounts. The HKMA handled each complaint and informant report in accordance with established procedures and followed up on issues of supervisory and disciplinary concern as identified during the handling process.

Table 6 Banking complaints received by the HKMA

	2019			2018
	Conduct-related issues	General banking services	Total	Total
In progress on 1 January	97	317	414	456
Received during the year	215	1,735	1,950	1,948
Completed during the year	(220)	(1,754)	(1,974)	(1,990)
In progress on 31 December	92	298	390	414

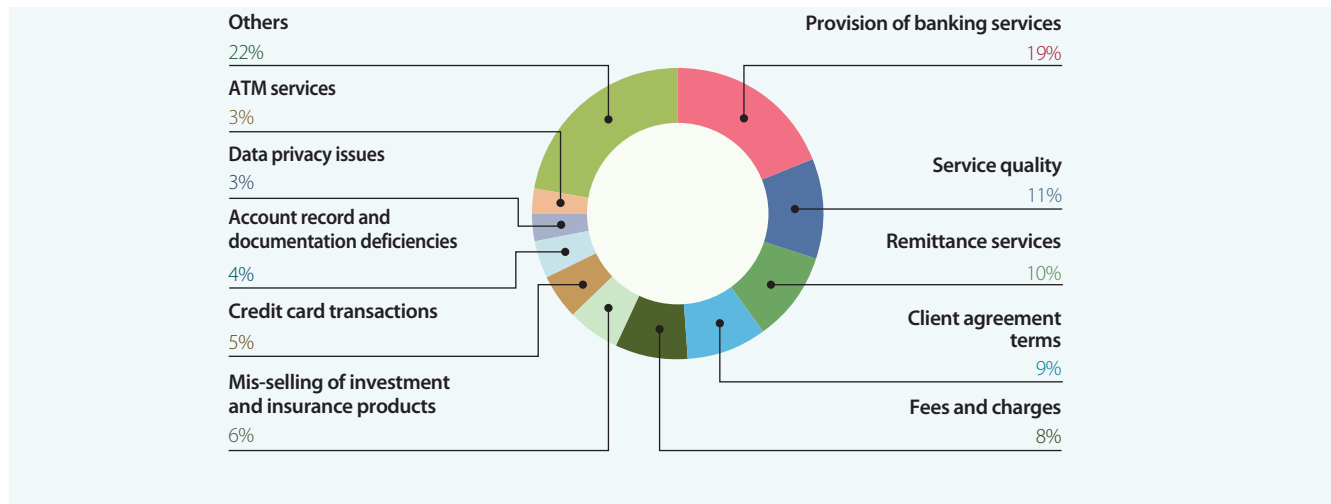
Issues concerning the provision of banking services, including opening and maintaining bank accounts, make up the most common type of complaint received by the HKMA. Such complaints decreased by 10% over the year from 416 cases in 2018 to 377 cases in 2019, reflecting banks' efforts, based on insights drawn from previous experiences of handling similar cases, to improve transparency and communication with customers concerning decisions that affect their accounts.

Complaints concerning the provision of remittance services increased by 78% over the year to 198 cases, of which quite a number were related to remittance fraud and investment scams, where bank accounts were allegedly used by fraudsters to receive funds from conducting illegal activities.

Complaints about data privacy increased by 34% to 67 cases in 2019. Most of the complaints under this category were allegedly related to excessive collection or suspected leakage of customer data.

Banking Stability

Chart 3 Types of products and services involved in banking complaints received by the HKMA



Enforcement

To achieve consistent enforcement outcomes and deliver coherent messages to the industry, the HKMA collaborates closely with other financial regulators to investigate or follow up on concerns about possible deviations from compliant, fit and proper conduct arising from banks' self-reports, banking complaints and supervisory examinations of AIs' wealth management business.

During the year, a RI was found to be non-compliant with the telephone recording requirements under the Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission. Following an investigation and subsequent referral by the HKMA, the SFC took disciplinary action, including a public reprimand and a HK\$2.1 million fine, against the RI in September. As a result of the collaborative enforcement efforts, both authorities were involved in the resolution process and jointly followed up the review report prepared by an independent reviewer engaged by the institution concerned to assess the effectiveness of the remedial actions taken to ensure its compliance with the regulatory requirements.

Meanwhile, regulatory co-operation with the IA was further enhanced following the full commencement of the statutory regulatory regime for insurance intermediaries under the new IO on 23 September. The Monetary Authority, empowered by the IA's delegation of investigation powers under the IO, is the frontline regulator of AIs and their staff licensed under the IO, and is responsible for handling complaints and conducting investigations under the IO in relation to an AI's regulated activities in accordance with collaborative arrangements agreed between the HKMA and the IA. Under the new statutory regime, the IA referred an insurance-related case to the HKMA in September for enforcement follow-up.

Overall, the HKMA's enforcement work resulted in the referral of 39 cases to the SFC during the year for appropriate action. Acting on the HKMA's referral of relevant information, the SFC imposed disciplinary sanctions, including a public reprimand and a pecuniary penalty, on two RIs and three individuals.

Following its assessment and investigation, the HKMA also issued 52 compliance advice letters to AIs, SVF licensees, system operators of retail payment systems, as well as their staff members who were found not to have acted in full compliance with the relevant regulatory requirements.

Banking Stability

Complaints Watch

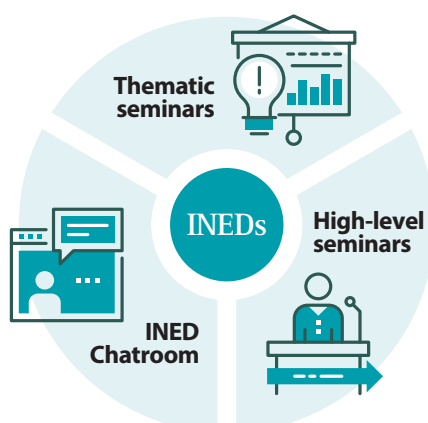
The HKMA publishes the Complaints Watch newsletter periodically to promote proper standards of conduct and prudent business practices among Als. The newsletter draws Als' attention to trends in banking complaints, including emerging topical issues on retail payment services and the use of a secured overdraft facility for foreign exchange investment.

Capacity building in the banking sector

Director empowerment

In June, the HKMA organised a high-level seminar for Independent Non-Executive Directors (INEDs) and senior bankers in Beijing jointly with the China Banking and Insurance Regulatory Commission. Speakers shared their insights into the developments of Mainland China in areas such as the economy, financial regulations, technologies, and international relations. The HKMA organised thematic seminars to keep INEDs updated on topical issues in the banking sector and to provide a channel for INEDs to exchange views with industry experts and the HKMA. Some of the seminar topics in 2019 were about the latest global crypto trends, the impact of virtual banks, climate risk and finance, and talent risk management. The HKMA also collaborated with the Asia Pacific Loan Market Association and the Alternative Investment Management Association to facilitate the participation of banks in their flagship conferences.

To facilitate closer communication with INEDs, in March the HKMA launched the "INED Chatroom", a customised electronic channel for dialogue between the HKMA and bank directors.



Talent development for banking practitioners

The HKMA works closely with the banking industry and relevant professional bodies to develop new modules under the Enhanced Competency Framework (ECF) to facilitate talent development and enhancement of the professional competencies of banking practitioners. An ECF module on credit risk management which had taken into account feedback from the industry consultation was launched in March. The HKMA is making good progress on developing new ECF modules on operational risk management and compliance.

Since the ECF modules were first rolled out in 2016, about 10,000 banking practitioners had obtained recognised certifications by end-December 2019 to meet ECF benchmarks in various professional areas. This helps the banking industry in raising the overall level of professional competence and meeting the demand for talents.

In 2019, the HKMA conducted the Regulator's Dialogue and other briefing sessions to keep banking practitioners at all levels updated on bank culture supervision and its refined investor protection measures.

This year also saw the graduation of the second batch of apprentices under an apprenticeship programme for private wealth management. The programme was a joint initiative of the HKMA and the Private Wealth Management Association (PWMA) to develop future talent for the industry. In view of the overwhelming response from students and participating private wealth management firms in previous years, the HKMA and the PWMA conducted another round of recruitment in November.



Enhanced Competency Framework

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

Banking Stability

Oversight of financial market infrastructures

The policy objectives of the HKMA in overseeing FMIs are to promote their general safety and efficiency, contain systemic risk, and foster transparency. The HKMA aims to make FMIs more resilient to financial crises and protect the monetary and financial systems in Hong Kong from possible destabilising effects arising from disruption to the FMIs. The approach taken by the HKMA in overseeing the FMIs under its purview is set out in a policy statement published on the HKMA website.

The Payment Systems and Stored Value Facilities Ordinance (PSSVFO) empowers the Monetary Authority to designate and oversee clearing and settlement systems that are material to the monetary and financial stability of Hong Kong, and to the functioning of Hong Kong as an international financial centre. The purposes of the PSSVFO include promoting the general safety and efficiency of the designated clearing and settlement systems: the CMU, the Hong Kong Dollar Clearing House Automated Transfer System (CHATS), the US Dollar CHATS, the Euro CHATS, the Renminbi CHATS, and the Continuous Linked Settlement (CLS) System.

The FPS, launched in September 2018, is an extension of the Hong Kong Dollar CHATS and Renminbi CHATS, and is subject to the HKMA's oversight under the PSSVFO. The PSSVFO also provides statutory backing to the finality of settlement for transactions made through the Hong Kong Dollar FPS and Renminbi FPS by protecting the settlement finality from insolvency laws or any other laws.

One of the functions of the Monetary Authority is to maintain the stability and integrity of the monetary and financial systems of Hong Kong, including the maintenance and development of Hong Kong's financial infrastructure. In this connection, the HKMA is responsible for overseeing the OTC Derivatives Trade Repository ("HKTR"). 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. It is the policy intention of the HKMA to oversee the HKTR in the same way and to apply, where relevant, the same standards as the designated clearing and settlement systems under its purview. All the designated clearing and settlement systems and the HKTR are treated as FMIs in Hong Kong.

The HKMA oversees local FMIs under its purview through off-site reviews, continuous monitoring, on-site examinations, and meetings with FMIs' management. In doing so, the HKMA adopts international standards in its oversight framework. 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) in 2012. The PFMI constitutes the latest international standards for the oversight of FMIs, including systemically important payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories. The requirements under the PFMI are incorporated in the relevant guidelines on designated clearing and settlement systems and trade repositories issued by the HKMA.

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

Banking Stability

In the light of heightened cybersecurity risks, the CPMI published guidance on cyber resilience requirements in 2016 and a strategy to mitigate the risk of wholesale payment fraud related to endpoint security in 2018. The HKMA has been working closely with FMIs with a view to complying with the relevant international standards and further strengthening their cybersecurity.

International participation

The HKMA is a member of the CPMI and participates in meetings, working groups and forums on FMI oversight matters. It also participates in the CPMI-IOSCO Implementation Monitoring Standing Group (IMSG), which is responsible for monitoring and assessing the implementation of the PFMI by different jurisdictions.

Throughout the years, the HKMA has participated actively in the PFMI assessments conducted by the IMSG. The assessment reports published by the CPMI-IOSCO confirmed that the HKMA had completed the process of adopting the legislation and other policies related to implementing the PFMI, and that the adopted measures were complete and consistent with the principles and responsibilities. The reports also noted that the FMIs under the purview of the HKMA observed the relevant requirements under the PFMI or the relevant guidelines.

The HKMA is also a member of the Oversight Forum of the global message carrier SWIFT, which 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 the year, the HKMA attended forum meetings and teleconferences to discuss matters of interest, in particular the customer security framework developed by SWIFT and cybersecurity issues.

The HKMA participates in the international co-operative oversight of the CLS System through the CLS Oversight Committee. 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 (PvP) basis. During the year, the HKMA attended various meetings of the CLS Oversight Committee to discuss operational, development, and oversight matters.

The HKMA has established co-operative oversight arrangements with the relevant authorities, both at the domestic and international levels, to foster efficient and effective communication and consultation, in order to support one another in fulfilling their respective mandates with respect to FMIs. On the domestic front, the HKMA signed a new MoU with the SFC in September to strengthen the co-operative oversight arrangements between the two regulators, taking into account the latest developments in the market. Internationally, the HKMA held discussions with the relevant overseas authorities to further strengthen the co-operative oversight of links between the FMIs in Hong Kong and those overseas. In particular, the HKMA has established co-operative oversight arrangements with overseas regulators for PvP links between the US Dollar CHATS and the Malaysian Ringgit, Indonesian Rupiah and Thai Baht Real Time Gross Settlement systems, and for the various cross-border links between the CMU and its overseas counterparts.

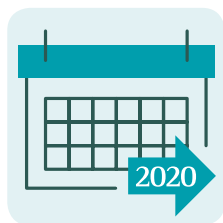
Banking Stability

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 has been no appeal since the establishment of the Tribunal. 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 clearing and settlement systems. The Committee held two meetings, and reviewed four regular reports and 36 accompanying oversight activities management reports in 2019. The Committee concluded that it was not aware of any case where the HKMA had not duly followed internal operational procedures, or where the HKMA had not been procedurally fair in carrying out its oversight activities. Under its terms of reference, the Committee submitted its annual report to the Financial Secretary, and the report is available on the HKMA website.

Banking Stability

PLANS FOR 2020 AND BEYOND



Supervisory focus

Supervision of operational and technology risk

The HKMA will continue to strengthen the capability of the banking sector to address both existing and emerging operational

and technology risks. In 2020, the HKMA will complete a comprehensive review of the CFI to identify possible enhancement to the initiative and will proceed with implementation. The HKMA will also step up the supervision of risks arising from Als' increasing reliance on cloud service providers and conduct examinations to assess Als' IT governance.

Smart banking

The HKMA will monitor closely the operations of and market reactions to virtual banks after they commence business. In particular, the HKMA will devote resources to the supervision of virtual banks' management of risks, particularly technology risk, protection of customer data, and AML/CFT issues. The HKMA will also roll out initiatives to help develop a larger and more diverse Regtech ecosystem.

Supervision of credit risk

Given the uncertainties in the global economic environment and the social events in Hong Kong, the HKMA is conducting a deep-dive review of Als' asset quality to assess whether there are any emerging trends of deterioration. The HKMA will continue to undertake thematic reviews and examinations focusing on Als' credit risk management practices in areas such as lending to large corporates and loan classification and provisioning systems. In addition, as SMEs are generally more vulnerable to the uncertainties stemming from recent global and domestic events, the HKMA will continue to work with the banking industry to support SMEs' financing needs to the extent consistent with prudent risk management principles.

Supervision of liquidity and market risks

The HKMA will continue to focus on the supervision of Als' liquidity and market risk management in 2020. Apart from conducting on-site examinations and thematic reviews of Als' liquidity risk management systems, the HKMA will refine and strengthen its supervisory liquidity stress tests to ensure the banking system is sufficiently resilient to adverse shocks. It will continue to monitor Als' preparation for the transition associated with the interest rate benchmark reform.

Banking Stability

Combating money laundering and terrorist financing

In 2020, the HKMA will undertake a range of follow-up work arising from the FATF ME Report, including working with the Government and other agencies to contribute to the next Hong Kong ML/TF Risk Assessment, which is due for completion in 2021. This will include contributing to the ML/TF risk assessments on higher-risk areas, including overseas corruption and tax crime.

Enabling AIs to use Regtech for AML/CFT purposes will be a key supervisory area of focus in 2020. Further to the positive development of remote onboarding initiatives, the HKMA continues to explore how data and technology can be leveraged in innovative ways to enhance Hong Kong's AML/CFT ecosystem. The HKMA will maintain the positive momentum generated through the AML/CFT Regtech Forum by focusing on assisting banks in reviewing AML/CFT processes end-to-end for Regtech adoption; facilitating experimentation with technology innovation in areas such as transaction monitoring and screening; while also enhancing the collective ability of the industry to reduce the risk of ML networks by enhancing data, analytics, information delivery and collaboration, as well as skills and expertise. The HKMA will also undertake a thematic review of AIs' transaction monitoring systems, working with a leading global technology firm.

Supervision of wealth management and MPF-related businesses

The HKMA will continue to communicate closely with other regulators and the banking industry to provide guidance on regulatory standards in relation to the sale of investment and insurance products, and work with the industry to formulate regulatory requirements on conduct standards for trust services. Further to the announcement in November to explore the establishment of a cross-boundary wealth management connect scheme, the HKMA will work with relevant authorities and the banking industry on the operational details for the scheme. Moreover, the HKMA will collaborate with the SFC in conducting joint examinations of RIs and licensed corporations, and co-operate with the IA on the supervision of licensed insurance intermediaries.

The HKMA will carry out on-site examinations and off-site surveillance of AIs' conduct in the sale of securities, MPF and other investment and insurance products, including equity-linked products, accumulators, debt securities, investment funds, non-investment-linked long-term insurance and medical insurance products, and of AIs' compliance with new regulatory requirements.

Banking Stability

Implementation of Basel Standards in Hong Kong

Capital standards

The legislative process to amend the BCR for implementing the SA-CCR and CCP standard is expected to finish within the first half of 2020. To facilitate implementation, the HKMA will develop guidance to help AIs better understand the application of certain provisions in the BCR related to the SA-CCR.

Regarding the implementation of the EIF standard, industry consultation on the proposed amendments to the BCR will continue.

The HKMA intends to consult the industry sometime within 2020 on its policy proposals for implementing the Final Basel III package. The policy proposals are being developed as informed by the results of the local QIS conducted in 2019, and will cover the revised IRB approach, the revised standardised approach for credit risk, the revised operational risk framework and the output floor. The finalised policy proposals will then form the basis for the preparation of draft rules for implementing these standards.

In 2019, the HKMA consulted the industry on the proposed approaches to implement the revised market risk standards as set out in the *“Minimum capital requirements for market risk”* issued by the Basel Committee. The HKMA will be working on a set of amendments to the BCR for the implementation of the revised standards.

With regard to credit valuation adjustment (CVA) risk, the Basel Committee issued a consultative document on the final revisions to the CVA framework on 28 November. The HKMA will consult the industry on its implementation proposal for Hong Kong after the finalisation of the CVA framework by the Basel Committee.

Leverage ratio

In June 2019, the Basel Committee released a revised leverage ratio treatment of client cleared derivatives and disclosure requirements to address any potential window-dressing behaviours of banks to elevate disclosed leverage ratios through temporary reductions in the volumes of certain short-term transactions. The HKMA will develop the relevant policy proposals for implementing the revised treatment, and a number of technical revisions to the leverage ratio as set out in the Final Basel III package, for consultation with the industry.

Disclosure standards

In December 2018, the Basel Committee released the *“Pillar 3 Disclosure Requirements — Updated Framework”* to incorporate revisions to the Pillar 3 framework, mainly to reflect requirements arising from the Final Basel III package. These requirements constitute the third and final phase of the revised Pillar 3 disclosure requirements. The HKMA will consult the industry on its proposed approach to implementing these requirements.

Banking Stability

Development of Supervisory Policies

Other supervisory policies and risk management guidelines

To reflect developments in related regulatory requirements and international standards, the HKMA plans to update certain SPM modules, including those on *"Foreign Exchange Risk Management"*, *"Overview of Capital Adequacy Regime for Locally Incorporated Authorized Institutions"*, *"Systemically Important Banks"* and *"Non-centrally Cleared OTC Derivatives Transactions — Margin and Other Risk Mitigation Standards"*. The HKMA will continue to work on the revised SPM modules on *"Recovery Planning"*, *"Guideline on a Sound Remuneration System"* and *"Reporting Requirements Relating to Authorized Institutions' External Auditors under the Banking Ordinance"*, with an aim to finalise the revisions within 2020.

Review of supervisory documents

The review of supervisory documents will continue in 2020 to enhance the user-friendliness of the documents by refining their structure, classification, and drafting styles and by enabling smart display via electronic channels.

Compliance with regulatory regime for over-the-counter derivatives market

The HKMA will continue to monitor Als' and AMBs' compliance with the regulatory regime for the OTC derivatives market in accordance with the statutory requirements.

Balanced and responsive supervision

The HKMA will continue to work closely with the banking industry to refine and streamline supervisory policies and practices to ensure that they remain effective and proportionate amid the changing landscape of risk environment, technology, and customer experience.

Accounting standards

Further to the first-phase amendments issued in September 2019 to provide relief from potential effects of the uncertainties caused by the interest rate benchmark reform, the International Accounting Standards Board is currently assessing the financial reporting issues that may arise when an existing interest rate benchmark is replaced with an alternative reference rate. In respect of IFRS 9, the Basel Committee has been assessing the longer-term implications of the required ECLs under the accounting standard on the regulatory capital framework. Meanwhile, the HKMA will

continue to monitor the updates in accounting standards in response to interest rate benchmark reform and the implementation of IFRS 9 by Als in Hong Kong. The HKMA will maintain regular dialogue with Als' external auditors and assess the implications of other impending accounting standards on the existing prudential requirements on Als.

Green and sustainable banking

The HKMA will continue promoting green and sustainable banking. In 2020, the HKMA will proceed to Phase II under its three-phased approach to set supervisory expectations and requirements. The "greenness" assessment on individual Als will be conducted. Thematic reviews of selected Als' actual practices in managing climate risks will also be performed. Studies on potential obstacles to the development of green and sustainable banking in Hong Kong will be conducted. The HKMA will also continue to participate in the Central Banks and Supervisors Network for Greening the Financial System to share experiences and co-ordinate efforts on the international front to tackle climate change-related risks.

To better inform the industry of the HKMA's expectations and gather its views, the HKMA plans to issue a paper illustrating its supervisory expectations and approaches to green and sustainable banking.

Banking Stability

Resolution

The HKMA will continue its work in the multi-year programme of building an operational resolution regime for Als. For 2020, the HKMA will prioritise the following topics within its three core purposes (see Table 7 for details).

Table 7 HKMA's forward priorities on resolution in 2020

Resolution Standards	Resolution Planning	International Policy, Stakeholders' Engagement and Execution Capability
<ul style="list-style-type: none"> ◆ Prepare and consult on draft rules governing contractual stays ◆ Consult on and finalise a CoP chapter about Als' standards on operational continuity in resolution ◆ Develop a CoP chapter on Als' liquidity reporting and estimation capabilities for consultation ◆ Begin work on a CoP chapter about Als' standards on continuity of access to FMI 	<ul style="list-style-type: none"> ◆ Advance bilateral resolution planning programmes with D-SIBs, assessing resolvability and working with banks to address impediments to an orderly resolution ◆ Advance implementation of LAC requirements for D-SIBs and prepare implementation of operational continuity in resolution standards ◆ Engage with locally incorporated Als other than D-SIBs, with total consolidated assets above HK\$300 billion, on core information required for resolution planning ◆ Co-ordinate with relevant home authorities on cross-border resolution planning for G-SIBs via CMGs and Resolution Colleges 	<ul style="list-style-type: none"> ◆ Continue to contribute to international policy developments ◆ Chair and provide a secretariat function for the EMEAP's FMR ◆ Advance the development of local mechanics to execute bail-in and transfer stabilization options ◆ Advance the development and enhancement of crisis management framework

Banking Stability

Bank consumer protection

The HKMA will continue to promote good banking practices by participating in, and providing advice to, the Code of Banking Practice Committee of HKAB. In particular, in the light of the increasing trend of digitalisation of financial services, the HKMA will keep the requirements related to consumer protection under review, including provisions in the Code, and consider whether any revisions or new requirements are needed. It will continue to monitor Als' compliance with the Code through various means, including via Als' self-assessment and handling of relevant complaints against them.

The HKMA will continue to work closely with the banking industry in promoting a sound bank culture. The HKMA will keep track of the progress of bank culture reform in Hong Kong and share industry-wide insights and practices on culture with the industry. The HKMA will also continue to explore other culture initiatives, taking into account its overseas experience while maintaining dialogue with overseas regulators on the development of bank culture.

The HKMA will continue to work closely with HKAB in following up with TransUnion on the investigation and enhancement to security controls being undertaken by TransUnion. Drawing insights from the security incident in 2018, the HKMA will work further with the banking industry on enhancing the oversight of credit referencing in Hong Kong, and on introducing more than one credit referencing agency locally, with a view to raising the quality of service and addressing the operational risk of having only one agency in the market.

Financial inclusion

The HKMA will continue to work with the banking industry, business community and relevant stakeholders to further enhance customer experience in account opening and maintenance. The HKMA will carry on its work with the banking industry on remote onboarding initiatives and explore further enhancement of the efficiency and effectiveness of CDD processes through the greater use of technology.

The HKMA will also continue to monitor the industry's implementation of measures recommended in the Practical Guideline on Barrier-free Banking Services.

Deposit protection

The project to implement electronic payment channels for DPS compensation will continue in 2020, with a view to launching the channels in 2021. The compliance programme that monitors DPS member banks' readiness in submitting data and information in accordance with the Information System Guideline will continue. Annual self-assessments and on-site examinations will continue to be conducted to ensure that DPS member banks make appropriate representations to depositors in respect of the protection status of deposits. Multimedia advertising and new segment-focused consumer campaigns will be rolled out to enhance public confidence in the DPS.

Enforcement

The HKMA will continue to deploy the full range of supervisory and enforcement measures to achieve the objectives of market integrity and bank consumer protection. The HKMA will enforce requirements under various statutory regimes relevant to Als and SVF licensees, with a continued focus on proportionate and graduated enforcement action under the Anti-Money Laundering and Counter-Terrorist Financing Ordinance, and on appropriate follow-up action in relation to conduct that prejudices customer interests. We will continue to maintain close collaboration with other local financial regulators to achieve effective and co-ordinated enforcement outcomes.

Banking Stability

Capacity building in the banking sector

Director empowerment

Having collected positive feedback on the activities held throughout the year to equip directors for discharging of their roles and responsibilities, the HKMA will continue such activities to further empower directors.

Talent development for banking practitioners

The HKMA will also continue its efforts in the ongoing talent development of banking practitioners, such as organising the Regulator's Dialogue and sharing sessions to keep them abreast of banking-sector developments, and collaborating with the banking industry and relevant professional bodies to develop new ECF modules that will cater to industry needs.

Future banking

In view of the talent challenge brought about by new technologies and business opportunities, the HKMA has engaged the banking sector in an industry-wide exercise to identify future talent gaps in the sector over the next five years from 2021 to 2025. The exercise aims to provide recommendations on the direction to take so as to narrow the gaps. It is a good start in facilitating collaborative efforts in the banking industry to make the workforce ready for the future. The HKMA targets to share the findings and recommendations of the exercise in 2020.

Oversight of financial market infrastructures

The HKMA will continue to promote the safety and efficiency of the FMI under its oversight in accordance with the PSSVFO and the PFMI, and fine-tune the FMI oversight framework taking into account the latest developments.

The HKMA will work with the FMIs on their observance of the PFMI. Assessments will be conducted and updated as required, and the HKMA will continue to participate in the CPMI-IOSCO PFMI implementation monitoring and assessment exercise. Where appropriate, oversight requirements will be strengthened to reflect international practices or in response to market developments. In particular, the HKMA will focus on the cyber resilience of the FMIs under its purview. The HKMA will also continue to work with relevant authorities to further strengthen co-operative oversight arrangements where appropriate.

International Financial Centre



Hong Kong is a globally competitive international financial centre. The implementation of the Smart Banking initiatives has been in good progress to further develop Hong Kong as a fintech hub. Capitalising on opportunities arising from the opening up of the Mainland financial markets, much headway has been made to promote financial collaboration in the Guangdong-Hong Kong-Macao Greater Bay Area, especially in easing Hong Kong residents' cross-border access to financial and banking services in the Area.

At the same time, much effort has been made to open up new opportunities to further strengthen the competitiveness of Hong Kong's financial platform, including infrastructure investment and financing, green finance and private equity funds. The Hong Kong Academy of Finance was set up to enhance Hong Kong's soft power in a sustainable manner.

In the central banking and regulatory community, the HKMA plays a leadership role in a number of regional and international committees, which is a clear recognition of Hong Kong's expertise and commitment to international work.

International Financial Centre

OVERVIEW

To strengthen Hong Kong's position as a fintech hub in Asia, the HKMA puts great effort into implementing the seven Smart Banking initiatives that were announced in September 2017, with an aim to facilitate the development and use of fintech in the banking and payment industries. The key progress of these initiatives during the year included:

- ◆ expanding the adoption of the Faster Payment System (FPS);
- ◆ facilitating the implementation of Phases I and II of the Open Application Programming Interface (Open API) Framework in the banking sector;
- ◆ further enhancing fintech research and talent development;
- ◆ stepping up cross-border collaboration in fintech;
- ◆ granting eight virtual bank licences;
- ◆ facilitating the industry's increasing use of Fintech Supervisory Sandbox (FSS) 2.0 for launching fintech initiatives; and
- ◆ further facilitating the adoption of regulatory technology (Regtech) through the Banking Made Easy initiative.

The HKMA Fintech Facilitation Office (FFO), together with the banking departments of the HKMA, plays a pivotal role in driving the implementation of these initiatives.

Hong Kong plays an indispensable role in facilitating international investors' allocation of renminbi assets, with its unparalleled access to the onshore markets through the Stock Connect and Bond Connect schemes. This was evident by the tripling of the number of registered investors and daily turnover under Bond Connect over the past year. Further enhancements have been introduced to both Bond Connect and Stock Connect, providing more convenience and flexibility for international investors to invest in onshore securities in the Mainland. The HKMA also worked closely with Mainland authorities to explore and implement a series of financial facilitation measures for Hong Kong residents to access financial and banking services across the border in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), including a prospective, two-way wealth management connect scheme. Hong Kong maintains a firm foothold as the global hub for offshore renminbi business. According to the Bank for International Settlements (BIS) Triennial Survey of Foreign Exchange (FX) and Derivatives Market Turnover, Hong Kong continued to be the largest offshore renminbi FX centre in the world.

Continuous efforts were put into opening up new opportunities to further enhance the competitiveness of Hong Kong's financial platform. To promote the development of the fund business in Hong Kong, the HKMA worked closely with the Government and industry to provide a more favourable tax and regulatory environment for fund formation. A number of large-scale events and targeted outreach activities were organised to promote Hong Kong as a hub for green finance, infrastructure investment and financing and corporate treasury centres (CTCs). In an effort to enhance Hong Kong's soft power, the Hong Kong Academy of Finance (AoF) was set up in June to develop financial leadership and promote research collaboration.

International Financial Centre

In the central banking and regulatory community, the HKMA plays a leadership role in a number of regional and international committees. The HKMA chaired the Standing Committee on Supervisory and Regulatory Cooperation (SRC) of the Financial Stability Board (FSB)¹ until 31 August 2019. Currently, the HKMA is chairing the Supervision and Implementation Group (SIG) of the Basel Committee on Banking Supervision (Basel Committee)², and the Working Group on Financial Markets (WGFM) established under the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP)³. The HKMA is also co-chairing the Non-Bank Monitoring Experts Group (NMEG) of the FSB with the US Securities and Exchange Commission.

The safe and efficient operation of Hong Kong's financial infrastructure lays a solid foundation for Hong Kong's role as an international financial centre. The four interbank Real Time Gross Settlement (RTGS) systems, the Central Moneymarkets Unit (CMU) and the Hong Kong Trade Repository (HKTR) achieved 100% system availability in 2019, beating the target of 99.95%. Through its accounts set up with the two Mainland central securities depositories, the CMU facilitates the settlement of transactions conducted under Bond Connect Northbound Trading and the holding of Mainland debt securities on behalf of relevant CMU members.

The FPS, which serves as an extension of Hong Kong dollar RTGS system to enable the public to make instant retail fund transfers and payments across different banks and stored value facilities (SVFs) on a round-the-clock basis, ran smoothly in its first year of operation. Users' adoption of the facility had increased steadily, as manifested in the four million registrations and tripling of transaction volumes by the end of 2019. The FPS brings new opportunities to the retail payment industry and promotes fintech innovation.

To ensure the general safety and efficiency of the local retail payment industry, the HKMA has designated and is overseeing a total of six retail payment systems (RPSs) under the Payment Systems and Stored Value Facilities Ordinance (PSSVFO). The HKMA also issued two new SVF licences in May, bringing the total number of SVF licensees to 18. SVF licensees continued to launch new products and services actively during the year to diversify customer choices and enhance user experience.

¹ The FSB was established in April 2009 as the successor to the Financial Stability Forum to address vulnerabilities in global financial systems, and to develop and promote the implementation of effective regulatory, supervisory and other policies in the interest of financial stability. Its membership comprises senior representatives of national financial authorities (central banks, regulatory and supervisory authorities, and ministries of finance), international financial institutions, standard-setting bodies, and committees of central bank experts.

² The Basel Committee is the primary global standard setter for the prudential regulation of banks and provides a forum for regular co-operation on banking supervisory matters. Its 45 members comprise central banks and bank supervisors from 28 jurisdictions.

³ The EMEAP is a co-operative forum of 11 central banks and monetary authorities in the East Asian and Pacific region, comprising the Reserve Bank of Australia, the People's Bank of China, the Hong Kong Monetary Authority, Bank Indonesia, the Bank of Japan, the Bank of Korea, Bank Negara Malaysia, the Reserve Bank of New Zealand, Bangko Sentral ng Pilipinas, the Monetary Authority of Singapore, and the Bank of Thailand.

International Financial Centre

REVIEW OF 2019

Hong Kong as a Fintech Hub in Asia

Smart Banking initiatives

The seven Smart Banking initiatives were announced by the HKMA in September 2017 with the aim of helping the banking sector achieve higher standards of operation and embrace the enormous opportunities brought about by the convergence of banking and technology. During the year, considerable progress was made in implementing these initiatives and transforming the fintech ecosystem of Hong Kong.

◆ Faster Payment System



The launch of the FPS in September 2018 was a major milestone in the financial infrastructure development of Hong Kong in the digital era. The FPS further promotes the adoption of e-payment in

Hong Kong by providing efficient and convenient payment services to the general public and corporates. Since the launch of the FPS, the number of participating service providers had increased to 30 banks⁴ and 11 SVFs, with the addition of nine banks and one SVF, by the end of 2019.



⁴ Including virtual banks which are preparing for the launch of banking services.

International Financial Centre

Usage of the FPS has also grown steadily. As of 31 December 2019, the FPS recorded four million registrations (Chart 1) and processed 44 million transactions involving an aggregate amount of HK\$748.5 billion and RMB17 billion. In December 2019, average daily turnover reached 168,000 transactions worth HK\$2.4 billion and RMB38 million (Chart 2), as compared with 51,000 transactions during its first full month of operation in October 2018.

Faster Payment System recorded:

- ◆ **4 million** registrations as of 31 December 2019
- ◆ **44 million** transactions as of 31 December 2019
- ◆ **168,000** transactions worth **HK\$2.4 billion** and **RMB38 million** of average daily turnover in December 2019

Chart 1 Registration of FPS proxy identifiers

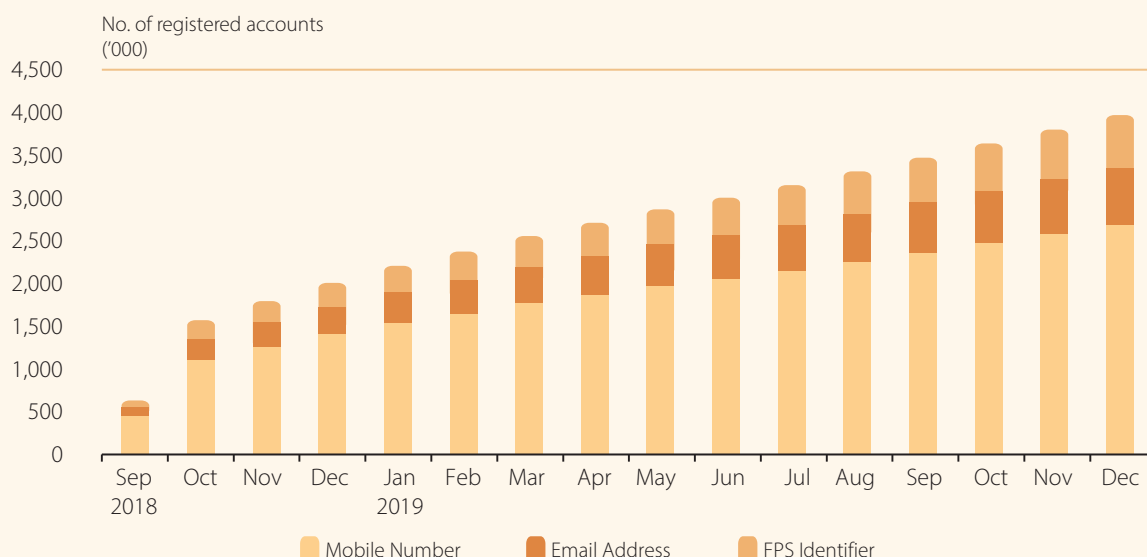
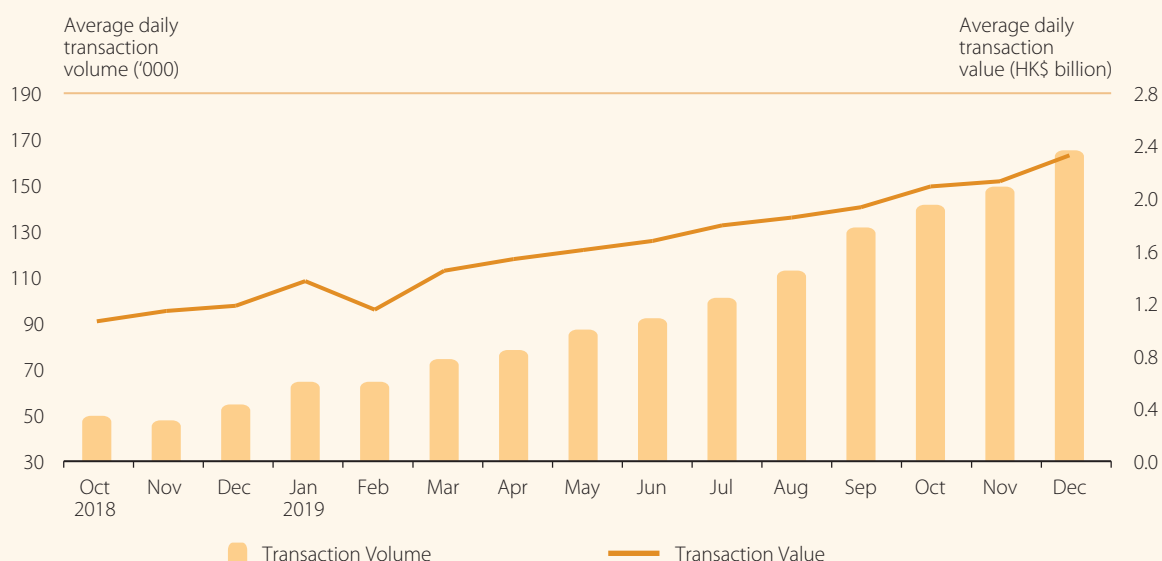


Chart 2 Average daily turnover of real-time Hong Kong dollar payments



International Financial Centre

The HKMA works with the industry to extend FPS usage from person-to-person payments to bill payments and other merchant payments. For example, enhancements were made to enable merchants to use a variety of proxy identifiers and accept partial or over-payments via a QR code. A technical specification was developed to facilitate the invocation of a mobile banking or SVF e-wallet mobile application (app) from a business mobile app for FPS payment. This would greatly improve customer experience in making merchant and business payments via the FPS using mobile devices.

The HKMA also works closely with relevant Government departments to assist them in using the FPS to accept bill payments from the public. From 1 November, bills issued by the Inland Revenue Department, the Rating and Valuation Department and the Water Supplies Department were printed with an FPS QR code so that the public could scan the QR code easily with supporting mobile banking or SVF e-wallet apps to make payment. The HKMA will continue working with various Government departments and public bodies to explore other potential use cases which can make it convenient for the public to make payment via the FPS.

To raise public awareness of the FPS, the HKMA has developed a new series of education and publicity materials, such as Announcements in the Public Interest for broadcast on television and radio, as well as videos and electronic banners for digital platforms. The HKMA also participated in trade fairs to promote the FPS to small and medium-sized enterprises (SMEs) and corporates. Various FPS participating banks and SVFs launched promotion campaigns and offered incentives to encourage customers to register with the FPS and to use it for fund transfer and bill payment.

In addition, the HKMA engaged a number of industry organisations and institutions to provide briefings on the FPS so as to introduce its functionalities and the potential benefits it may bring to different businesses in collecting and making payment.



The Government has adopted FPS for bill payments on taxes, rates and Government rent and water charges.

◆ Open Application Programming Interface



The HKMA continued to facilitate the banking sector's development and adoption of Open API in accordance with the four-phase approach of the Open API Framework. Under Phase I, 20 retail banks opened up over 500 Open API endpoints in January, covering information of banking products and services. Under Phase II, the banks opened up in October over 300 APIs to support applications for banking products and services.

International Financial Centre

◆ Research and talent development



On trade finance, a proof-of-concept (PoC) study on linking up eTradeConnect⁵ and we.trade⁶ was completed in the first quarter of the year. In November, a Memorandum of Understanding (MoU) was signed between the subsidiaries of Hong Kong Interbank Clearing Limited and the Institute of Digital Currency of the People's Bank of China (PBoC) to conduct a PoC study on linking up eTradeConnect and the PBoC Trade Finance Platform to provide firms in both Hong Kong and Mainland China with more convenient trade finance services.

On Central Bank Digital Currency (CBDC), the HKMA and the Bank of Thailand embarked on a joint research project named Project Inthanon-LionRock to study the application of CBDC to cross-border payments, with a view to facilitating HKD-THB payment-versus-payment (PvP) among banks in Hong Kong and Thailand.



HKMA Executive Director (Financial Infrastructure), Mr Colin Pou (first from left), together with Director-General of the Institute of Digital Currency of the PBoC, Mr Mu Changchun (first from right), witness the signing ceremony of an MoU to conduct a PoC trial on linking up eTradeConnect and the PBoC Trade Finance Platform. The MoU is signed between Chief Executive Officer of the Hong Kong Trade Finance Platform Company Limited, Ms Haster Tang (second from left), and Deputy Director-General of the Institute of Digital Currency of the PBoC and Director of the Shenzhen Fintech Institute, Mr Di Gang (second from right).

⁵ eTradeConnect is a blockchain-based trade finance platform launched officially in October 2018 under the facilitation of the HKMA. It is fully funded by a consortium of 12 major banks in Hong Kong.

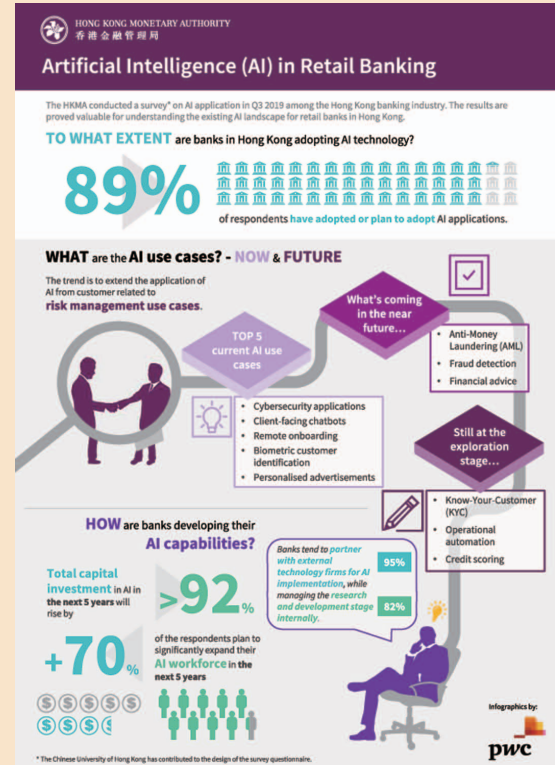
⁶ we.trade is a European blockchain-based trade finance platform.

International Financial Centre

On artificial intelligence (AI), the HKMA carried out a study on the application of AI technology in the Hong Kong banking industry. Key findings of an industry-wide AI survey were published in November, followed by the issuance of the full report, titled “Reshaping Banking with Artificial Intelligence”, in December.



The report “Reshaping Banking with Artificial Intelligence” is published in December.



A fact sheet is published to highlight the key facts and figures derived from a survey on the use of AI in the Hong Kong banking industry.

In an effort to enlarge the fintech talent pool, the HKMA continued to run the Fintech Career Accelerator Scheme 2.0 in collaboration with its strategic partners to nurture young talent at various stages of their career development. Over 220 students benefited from the programme last year.

International Financial Centre

◆ Cross-border collaboration



The HKMA continued to strengthen fintech collaboration with Shenzhen. In particular, the HKMA sponsored for the second time the Shenzhen Summer Internship Programme, enabling

50 Hong Kong students to work at renowned firms in Shenzhen for six weeks to experience the local fintech ecosystem. The HKMA also co-organised with the Shenzhen Municipal Financial Regulatory Bureau the Shenzhen-Hong Kong Fintech Award for the third consecutive year. Furthermore, both parties regularly attended summits and conferences held by each other.



HKMA Senior Executive Director, Mr Edmond Lau, gives opening remarks at the 2019 China (Shenzhen) Fintech Global Summit.

In order to strengthen cross-border fintech collaboration among different jurisdictions, the HKMA organised a high-level fintech roundtable titled “From Mutual Understanding to Global Collaboration” in January. About 45 senior representatives from 18 jurisdictions attended the event.

The HKMA, as one of the founding members, formally established the Global Financial Innovation Network (GFIN)⁷ in January together with an international group of 28 financial regulators and related organisations. GFIN seeks to create a framework for collaboration among financial services regulators on innovation-related topics. A cross-border pilot test was then launched for firms to test their innovative products and services across international markets. The HKMA also signed fintech MoUs with two overseas authorities during the year, namely the Bank of Thailand and the French supervisory authority, Autorité de Contrôle Prudentiel et de Résolution, to foster fintech collaboration.

Under the facilitation of the HKMA, the BIS commenced operation of its first Innovation Hub Centre in Hong Kong in November. The BIS Innovation Hub is set up to foster international collaboration on innovative financial technology within the central banking community. The establishment of the Hong Kong Centre is a clear recognition of Hong Kong’s leading role in the development and application of innovative financial technologies, and is expected to be conducive to the further development of the fintech ecosystem in Hong Kong. The HKMA will contribute to the Centre’s research by sharing local and regional experience in fintech development and facilitating its connections with the private sector, academia, other regulators, and government organisations.

International Financial Centre



HKMA's then Chief Executive, Mr Norman Chan (right), and General Manager of the BIS, Mr Agustín Carstens, sign the Operational Agreement to mark the collaboration between the two organisations on the BIS Innovation Hub Centre in Hong Kong.

Virtual banking



The HKMA granted licences to eight virtual banks in the first half of 2019 following comprehensive due diligence reviews and careful examination of their business plans. The licensees were from diverse backgrounds ranging from local and international fintech and technology firms to established banking groups. Since granting the licences, the HKMA has maintained close dialogue with the virtual banks to monitor their preparation and readiness for business commencement. One virtual bank rolled out its services on a trial basis in the HKMA's FSS in December 2019.

Fintech Supervisory Sandbox

Use of the FSS increased steadily during the year.



As of end-2019, pilot trials of **103** fintech initiatives had been allowed in the FSS, compared with 42 at end-2018. The HKMA also received **406** requests to access the FSS Chatroom and seek supervisory feedback at the early stage of fintech projects. Around **70%** of the requests were made by technology firms.

Banking Made Easy initiative



As part of the Banking Made Easy initiative, the HKMA updated and clarified regulatory requirements relating to remote on-boarding, online finance, and online wealth management. To promote the use of Regtech in the banking industry, the HKMA organised a Regtech forum on anti-money laundering and counter-financing of terrorism (AML/CFT) in November. The forum attracted around 400 attendees from home and abroad, including bankers, financial regulators, and tech experts. The record of discussion was issued to communicate the next steps to the industry and the wider AML/CFT ecosystem. The HKMA also issued its first Regtech Watch newsletter to share with the industry noteworthy use cases of Regtech in the area of prudential risk management and compliance.

Industry liaison and outreach

Since its establishment in March 2016, the FFO has been playing a crucial role in reaching out to and liaising with fintech market players to facilitate the exchange of ideas among stakeholders. During the year, the FFO organised 14 events, including six panel discussions and presentations during the Hong Kong Fintech Week 2019, attracting over 13,500 participants in all. The FFO also spoke at fintech-related events and held meetings with other regulatory authorities, industry organisations, financial institutions, technology firms and start-ups.



HKMA Chief Executive, Mr Eddie Yue, gives a keynote speech at the Hong Kong Fintech Week 2019.

International Financial Centre



HONG KONG ACADEMY OF FINANCE

The AoF was set up in June by the HKMA in full collaboration with the Securities and Futures Commission (SFC), the Insurance Authority (IA), and the Mandatory Provident Fund Schemes Authority (MPFA). The mission of the AoF is to serve as: (i) a centre of excellence for developing financial leadership; and (ii) a repository of knowledge in monetary and financial research, including applied research.



The Inauguration Ceremony is officiated by Financial Secretary and AoF Honorary President, The Hon Paul Chan Mo-po (right), and HKMA's then Chief Executive and AoF's then Chairman, Mr Norman Chan.



More than 100 guests attend the Inauguration Ceremony.

The Inauguration Ceremony cum first Fellowship Conferment of the AoF was held on 26 June. It was attended by more than 100 guests from the financial industry, regulatory authorities and academia in Hong Kong. At the Ceremony, the AoF conferred Fellowship on 10 outstanding leaders in the field of finance who had made significant contributions to Hong Kong.



The AoF confers Fellowship on 10 distinguished financial leaders: (from left) The Hon Joseph Yam Chi-kwong; Dr Edmund Tse Sze-wing; Dr the Hon David Li Kwok-po; Dr the Hon Victor Fung Kwok-king; The Hon Mrs Laura Cha Shih May-lung; The Hon Paul Chan Mo-po (AoF Honorary President); Mr Norman Chan (AoF's then Chairman); Dr the Hon Moses Cheng Mo-chi; Mr Carlson Tong; Prof Lawrence Juen-yeet Lau; Dr Anthony Neoh and Mr Peter T S Wong.

Since its establishment, 10 international financial leaders have joined the AoF as its International Advisers. Together with the AoF Fellows, they provide advice and guidance to the work of the AoF, in particular its Leadership Development Programme, and serve as speakers for the Programme.

International Financial Centre

AoF International Advisers

Mr Jaime Caruana

former Governor of the Bank of Spain and former General Manager of the BIS

Mr Laurence Fink

Chairman and Chief Executive Officer of BlackRock, Inc.

Mr David Rubenstein

Co-Founder and Co-Executive Chairman of The Carlyle Group

Ms Mary Schapiro

Vice Chair for Global Public Policy and Special Advisor to the Founder and Chairman of Bloomberg L.P., and former Chairman of the US Securities and Exchange Commission

Mr Stephen Schwarzman

Chairman, Chief Executive Officer and Co-Founder of The Blackstone Group L.P.

Professor Masaaki Shirakawa

former Governor of the Bank of Japan

Professor Michael Spence

Nobel Laureate in Economics, 2001 and Professor in Economics and Business at the New York University Leonard N. Stern School of Business

Mr Glenn Stevens

former Governor of the Reserve Bank of Australia

Mr Mark Tucker

Group Chairman of HSBC Holdings plc

Dr Zeti Akhtar Aziz

Group Chairman of Permodalan Nasional Berhad and former Governor of Bank Negara Malaysia

The AoF invites senior management and promising talent from financial institutions, professional firms, regulatory authorities and the academia to join as Members and to participate in its Leadership Development Programme. The Programme aims to groom future financial leaders by broadening Members' perspectives on global and inter-disciplinary issues. Top financial leaders from around the world are invited to speak and share their insights through seminar series, workshops and small group discussions. Five distinguished speakers have delivered speeches under the Programme so far:

- ◆ Stephen Schwarzman, Chairman, Chief Executive Officer and Co-Founder, The Blackstone Group L.P.;
- ◆ Agustín Carstens, General Manager, BIS;
- ◆ Charles Kaye, Chief Executive Officer, Warburg Pincus;
- ◆ Timothy Geithner, President, Warburg Pincus; and
- ◆ Minouche Shafik, Director, London School of Economics and Political Science.

On the research front, the AoF endeavours to fill the gap in applied financial research in Hong Kong. The Hong Kong Institute for Monetary and Financial Research (HKIMR), as a subsidiary of the AoF, has expanded its scope of work to cover Applied Finance Research and Thought Leadership, in addition to its Monetary and Financial Economic Research activities. Such research aims to help the industry better grasp new trends in the financial world, and attempts to provide practical answers to issues of interest to both the industry and regulators. In order to achieve this goal, a new Council of Advisers for Applied Research has been appointed, comprising representatives from the local financial regulatory bodies, the financial industry and established local and overseas academics and researchers with the relevant expertise. This Council advises on Applied Research themes to be pursued by the HKIMR and steers its Applied Research activities. The following Applied Research and Thought Leadership projects are being undertaken:

On financial innovation:

- ◆ The impact of fintech innovation on the Hong Kong banking industry
- ◆ Artificial intelligence: What it means for the banking industry landscape, compliance and supervision

On green and sustainable finance:

- ◆ Developing Hong Kong into a global green bond hub

On institutional settings and market structure:

- ◆ The impact of algorithmic and high-frequency trading on market liquidity and volatility in Hong Kong.

International Financial Centre

Hong Kong as an Infrastructure Investment and Financing Hub



The HKMA Infrastructure Financing Facilitation Office (IFFO) is an effective and efficient platform in facilitating infrastructure investment and financing through Hong Kong. In May, the HKMA set up the Centre for Green Finance (CGF) under the IFFO to promote Hong Kong as the hub for green finance in Asia and to champion sustainability in infrastructure investment and financing.

Table 1 List of IFFO partners as at 31 December 2019 (in alphabetical order)

Actis	China Investment Corporation	King & Wood Mallesons
Agricultural Bank of China Limited Hong Kong Branch	China National Petroleum Corporation	KPMG
AIA Group Limited	China State Construction Engineering Corporation Limited	Legg Mason Global Asset Management
AIG Insurance Hong Kong Limited	China Three Gorges Corporation	Macquarie Group
Airport Authority Hong Kong	China-Africa Development Fund	Malayan Banking Berhad
Allen & Overy	China-Britain Business Council	Marsh (Hong Kong) Limited
Aon Hong Kong Limited	CITIC Capital	Mayer Brown
APG Asset Management	Citigroup	Mitsubishi Corporation (Hong Kong) Ltd.
Asian Academy of International Law	City of London Corporation	Mitsui & Co. (Hong Kong) Ltd.
Asian Development Bank	Clifford Chance	Mizuho Bank, Ltd.
Astana International Financial Centre	CLP Group	Morgan Stanley
Australia and New Zealand Banking Group Limited	CNIC Corporation Limited	MTR Corporation Limited
AustralianSuper	Crédit Agricole Corporate and Investment Bank	MUFG Bank, Ltd.
Bank of China (Hong Kong) Limited	CRRC Corporation Limited	Multilateral Investment Guarantee Agency, a member of the World Bank Group
Bank of China Limited	Currie & Brown	National Pension Service
Bank of Communications Co., Ltd.	Deloitte China	OMERS
Beijing Jingneng Clean Energy Corporation Limited	Eastspring Investments	Ontario Teachers' Pension Plan
BlackRock	Ernst & Young	Pinsent Masons
Blackstone Group	European Bank for Reconstruction and Development	PwC
Brookfield Asset Management	Export-Import Bank of China (The)	Silk Road Fund
Canada Pension Plan Investment Board	General Electric	Standard Chartered Bank
CGCOC Group (Hong Kong) Co., Limited	Global Infrastructure Facility	Standard Chartered Bank (Hong Kong) Limited
China Communications Construction Company Limited	Global Infrastructure Hub	State Development & Investment Corp., Ltd.
China Construction Bank (Asia) Corporation Limited	Hong Kong Mortgage Corporation Limited (The)	State Grid Corporation of China
China Construction Bank Corporation	Hong Kong Trade Development Council	Sumitomo Mitsui Banking Corporation
China Datang Corporation Ltd.	Hongkong and Shanghai Banking Corporation Limited (The)	Taikang Asset Management Company Limited
China Development Bank Corporation	HSBC Holdings plc	Teachers Insurance and Annuity Association of America
China Energy Conservation and Environmental Protection Group	Industrial and Commercial Bank of China (Asia) Limited	TPG Capital
China Energy Engineering Group Corporation Limited	Industrial and Commercial Bank of China Limited	Willis Towers Watson
China Export & Credit Insurance Corporation	International Finance Corporation, a member of the World Bank Group	Xinjiang Goldwind Science & Technology Co., Ltd.
China Hua Neng Group Hong Kong Limited	Japan Bank for International Cooperation	Zurich Insurance Company Limited
China Huadian Corporation Ltd.	Jardine Lloyd Thompson Limited	

International Financial Centre

The IFFO has brought on board its platform close to 100 global key industry stakeholders, including institutional investors and financiers, financial intermediaries, professional service firms, and project owners and developers (Table 1). In April, the HKMA and the China Export & Credit Insurance Corporation (SINOSURE) signed an MoU to make better use of Hong Kong's advantages, thereby attracting more commercial banks and Mainland corporates to use the Hong Kong platform for offshore infrastructure financing and investment.

The IFFO organised four seminars and roundtable discussions in the year, promoting information sharing and capacity building in infrastructure investment and financing.



HKMA's then Chief Executive, Mr Norman Chan (left), and Chairman of SINOSURE, Mr Song Shuguang, sign an MoU to establish a strategic framework of co-operation, with a view to facilitating the financing of infrastructure projects.

International Financial Centre



March 2019 — The IFFO and the IA jointly showcased the strategic roles of insurance and guarantee in project risk management at a seminar that shared infrastructure case studies featuring the viewpoints of both insurers and the insured on political and commercial risk insurance.



May 2019 — The IFFO and the International Finance Corporation (IFC), a member of the World Bank Group, co-organised a seminar titled “ESG & Impact Investing: Creating Long-Term Value” with support from the Ministry of Finance of China.



July 2019 — The HKMA co-hosted a second roundtable together with the State-owned Assets Supervision and Administration Commission of the State Council in Hong Kong. Senior executives of six central state-owned enterprises (CSoEs) and a number of key international institutional investors joined the discussion on how Hong Kong’s financial and professional services could support CSoEs’ investment and expansion.



October 2019 — The CGF under the IFFO co-organised with the IFC a two-day seminar titled “Greening Financial Institutions”. The seminar, which brought together over 300 senior executives, highlighted how financial institutions were increasingly factoring in climate-related risks in various aspects of their work.

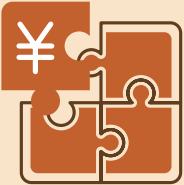
International Financial Centre

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



Bond Connect serves as a major channel for international investors to trade in the Mainland bond market using the market infrastructure and financial services in Hong Kong. Driven by the inclusion of renminbi bonds in major fixed income indices,

the number of registered investors under Bond Connect more than tripled from 503 at end-2018 to 1,601 at end-2019, while daily turnover also tripled to around RMB10.6 billion.



Bond Connect

1,601 investors at end-2019, with around **RMB10.6 billion** daily turnover during the year.

Several enhancements were made to the Connect schemes during the year. An additional electronic trading platform accessing Bond Connect was launched in January; the cut-off time for cash settlement under Bond Connect was further extended in April; a guidance on enhancements to the currency conversion arrangement under Stock Connect was issued in June to provide international investors with the choice of obtaining or hedging in onshore renminbi for their Stock Connect investments; and offshore investors could choose T+3 as the bond settlement cycle from August. These improvements offered more convenience and flexibility for investors under Bond Connect and Stock Connect, and drove the further inclusion of onshore assets in major financial indices.

The Outline Development Plan for the GBA was promulgated in February. It reaffirms Hong Kong's status as an international financial centre, the global offshore renminbi business hub, an international asset management centre, and a risk management centre. To support the increasing flow of people and goods in the GBA, financial facilitation measures were introduced, including cross-border usage of Hong Kong e-wallets and a pilot scheme for Hong Kong permanent residents to open Mainland bank accounts through attestation in a Hong Kong bank branch. In November, the Leading Group for the Development of GBA announced exploring a cross-boundary wealth management connect scheme.

Hong Kong's position as the global hub for offshore renminbi business remains firmly intact. During the year, average daily turnover of Hong Kong's renminbi RTGS system rose to a record high of RMB1.13 trillion. According to SWIFT statistics, over 70% of global renminbi payments were consistently handled in Hong Kong. Renminbi trade settlement handled by Hong Kong banks reached RMB5.38 trillion in 2019, increased by 27.8% as compared with 2018.

Notwithstanding uncertainties surrounding the renminbi exchange rate, renminbi customer deposits and outstanding certificates of deposit remained stable during the year, and stood at about RMB658.0 billion at year end. With the world's deepest offshore renminbi liquidity pool and the huge volume of renminbi financial activities, Hong Kong continued to be the largest offshore renminbi FX market globally, according to the BIS Triennial Survey of FX and Derivatives Market Turnover. The average daily turnover of renminbi FX transactions in Hong Kong rose 39.6% from US\$77.1 billion in April 2016 to US\$107.6 billion in April 2019, maintaining the lead over other renminbi centres. Renminbi financing activities also increased in 2019, with offshore renminbi bond issuance increasing 17.9% to RMB49.4 billion in 2019 and renminbi lending up 45.5% to RMB153.7 billion at end-2019. In 2019, the PBoC issued a total of RMB150.0 billion offshore bills in Hong Kong, of which RMB80.0 billion were outstanding as at the year end. The issuances expanded the spectrum of high-quality renminbi assets and improved the benchmark yield curve of renminbi bonds in Hong Kong.

- ◆ **RMB1.13 trillion** daily turnover of RMB RTGS system
- ◆ **RMB5.38 trillion** RMB trade settlement handled by Hong Kong banks
- ◆ **RMB658.0 billion** RMB customer deposits and outstanding certificates of deposit
- ◆ **US\$107.6 billion** daily turnover of RMB FX transactions in Hong Kong
- ◆ **RMB49.4 billion** offshore RMB bond issuance

International Financial Centre

The HKMA seeks to deepen financial collaboration with other overseas economies in offshore renminbi business and other areas of financial services, as well as to promote Hong Kong as the leading platform to tap into opportunities arising from Mainland's opening up, including the GBA development. The HKMA co-organised the Hong Kong-Paris Financial Seminar with Paris EUROPLACE in January and the eighth Hong Kong-London Financial Services Forum with the HM Treasury in May, and co-hosted the third Hong Kong-Switzerland Financial Dialogue with the Swiss State Secretariat for International Financial Matters in November. The HKMA also participated actively in various industry events in Hong Kong and overseas financial centres, including France and Switzerland.

Closer Economic Partnership Arrangement (CEPA)

In November, the Agreement Concerning Amendment to the CEPA Agreement on Trade in Services was signed. The amendment gave effect to measures to open up the financial sector that were announced by the Central Government earlier, with a view to ensuring the competitiveness of Hong Kong service providers in the Mainland market.

Hong Kong as a hub for corporate treasury centres

The HKMA promotes Hong Kong's advantages as an ideal CTC hub to Mainland and international corporates through industry events and meetings. In 2019, through the outreach effort, the HKMA identified around 10 more corporates at various stages of setting up CTC operations in Hong Kong, bringing the total number to 66 since the introduction of CTC tax regime in 2016.

Hong Kong as an asset and wealth management centre

The HKMA supports Hong Kong's development as an asset management hub through policies and outreach. During the year, various policy initiatives were rolled out to enhance the commercial attractiveness of the Hong Kong platform for private equity business. Since April, the eligibility of investment funds to enjoy profits tax exemption has been broadened to cover both onshore and offshore funds. The HKMA also worked closely with the Government to develop legislative proposals on establishing a limited partnership regime for private equity funds. Positive feedback had been received from an industry consultation conducted in the third quarter of 2019.

According to statistics from the SFC, Hong Kong's asset and wealth management business amounted to HK\$23,955 billion as at 31 December 2018. Hong Kong continues to be Asia's largest private equity fund hub after Mainland China, with US\$159.6 billion of capital under management as of end-2019 according to the Asian Venture Capital Journal. At the same time, Hong Kong is the largest cross-border private wealth management hub in Asia with US\$1.3 trillion of cross-border wealth booked in 2018, according to the Boston Consulting Group's Global Wealth 2019 Report.

With rapid growth in the number of ultra-high-net-worth individuals in the Asia-Pacific region, family office (FO) business has experienced substantial expansion in recent years and can become an important driver for the further development of the private wealth management industry. To strengthen Hong Kong's position as an FO hub, the HKMA is working closely with other Government agencies to step up outreach efforts to FOs and industry stakeholders and deliver a one-stop shop service for FOs interested in establishing a presence in Hong Kong.

Hong Kong as a green finance hub

The HKMA reaches out to the international community to showcase Hong Kong's green finance platform and capabilities. In February, the HKMA collaborated with the Climate Bonds Initiative to launch the Hong Kong Green Bond Market Briefing Report, which showed that green bonds arranged and issued in Hong Kong reached US\$11 billion in 2018. In addition, events and targeted outreach activities were organised, including a study tour on issuing green bonds in Hong Kong held in collaboration with the PBoC and the Hong Kong Green Finance Association, attracting more than 120 representatives of potential Mainland China issuers. In May, the HKMA announced the launch of the CGF under the HKMA IFFO to provide a platform for technical support and experience sharing for the green development of the Hong Kong banking and finance industry. Following the CGF's launch, a capacity-building seminar for banks and other financial institutions was held in October in collaboration with the IFC.

International Financial Centre

Hong Kong's bond market development

Government Green Bond Programme

The Financial Secretary announced in the 2018-19 Budget the Government Green Bond Programme (GGBP) with a borrowing ceiling of HK\$100 billion. Following preparations for the relevant legislation and implementation, the inaugural green bond under the GGBP was issued in May, with an issuance size of US\$1 billion and a tenor of five years.



The inaugural issuance was well received by the global investment community, attracting orders exceeding **US\$4 billion** from **over 100** global institutional investors, which allowed the bond to be priced favourably.

Around half of the green bond was distributed to investors in Asia, and roughly a quarter each to Europe and the US. There was also a good mix of investor types, including banks, fund managers, insurers, and the public sector. The issuance set an important new benchmark for potential green bond issuers in Hong Kong and the region, and won several major industry awards, including the Asia Pacific Green/SRI Bond Deal of the Year by GlobalCapital and the Sustainable Deal for 2019 by FinanceAsia. It has also been included in the major global green bond indices in the market.

Government Bond Programme

During the year, the HKMA arranged eight tenders of institutional government bonds amounting to HK\$17.4 billion. By the end of 2019, the total amount of outstanding institutional bonds was HK\$91.3 billion.

The HKMA arranged in July the fourth issuance of a three-year Silver Bond, amounting to HK\$3 billion, to Hong Kong senior residents aged 65 or above. It attracted more than 56,000 applications with investment monies of over HK\$7.9 billion. The amount of retail bonds outstanding at the end of the year was HK\$8.8 billion.

International and regional co-operation

International Monetary Fund's (IMF) Article IV Consultation

The HKMA continued to support the IMF Mission's work in the annual Article IV Consultation exercise, which was concluded in November. The IMF commended the resilience of Hong Kong's financial system and recognised that Hong Kong was well placed to navigate through both cyclical and structural challenges, given its significant buffers. The IMF reaffirmed its support for the Linked Exchange Rate System, which remained the appropriate arrangement for Hong Kong, anchoring the stability of its economy and monetary and financial system. The IMF commended Hong Kong's effort in strengthening the regulatory and supervisory framework for the safeguarding of financial stability. The IMF also affirmed Hong Kong's position as a regional trading hub, a global financial centre and one of the world's most open economies, and noted that the development of green finance and the GBA offered opportunities for Hong Kong to maintain its competitiveness as a global financial centre.

IMF New Arrangements to Borrow (NAB)

As an international financial centre and a member of the global financial community, Hong Kong maintains its commitment to strengthening the global financial safety net through its participation in the IMF NAB, 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 the international financial systems. In order to maintain the IMF's capacity to safeguard global financial stability, the NAB participants and the IMF agreed to increase the size of the credit arrangement on an equiproportional basis starting from 1 January 2021⁸, subject to formal ratification process.

⁸ Currently, the NAB has 40 participants, including the HKMA, with an overall size of SDR182.4 billion (about US\$251 billion), which will be increased to SDR364.7 billion on 1 January 2021. The HKMA's maximum contribution will increase from SDR340 million to SDR680 million.

International Financial Centre

Participation in international financial community

As a recognition of the HKMA's contribution to global financial stability, the former Chief Executive of the HKMA chaired the SRC of the FSB until 31 August. The SRC is charged with developing supervisory and regulatory policies to address financial stability issues, facilitating co-ordination among supervisors and regulators on issues that have cross-sectoral implications, and promoting consistent adherence to international regulatory standards. As Chair of the SRC, the HKMA led international discussions on new financial stability risks, including market fragmentation, crypto-assets, cyber resilience, financial benchmark transition and audit quality. In addition, the HKMA as a member of the FSB Working Group on Cyber Incident Response and Recovery is contributing to the development of a toolkit of effective practices to help financial institutions respond to and recover from a cyber incident.

The HKMA also assumed the co-chairmanship of NMEG of the FSB starting from June. The HKMA has since been working closely with the US Securities and Exchange Commission to steer the preparation of the FSB annual global monitoring report on non-bank financial intermediation to assess trends and risks in the non-bank financial sector.

Separately, the HKMA assumed the chairmanship of the SIG of the Basel Committee in October 2018. The SIG has two primary objectives: to foster the timely, consistent and effective implementation of the Basel Committee's standards and guidelines; and to advance improvements in banking supervision, particularly across Basel Committee members. The SIG is also responsible for monitoring the implementation of the Basel III framework among its member jurisdictions.

Regional co-operation

The HKMA maintained its commitment to regional co-operative initiatives to promote financial stability in Asia and to harness the region's collective voice in international financial affairs.

The HKMA assumed the chairmanship of the EMEAP WGFM in August 2018. The WGFM makes policy recommendations on central bank services and developments in the FX, money and bond markets, and promotes regional bond market development through the Asian Bond Fund initiative. In its role as the WGFM chair, the HKMA steered a study on the implications of financial benchmark reforms with a view to enhancing market readiness for such reforms, and initiated a study of US dollar liquidity and funding dynamics in the EMEAP region. The HKMA also chaired and served as the secretariat of the Focused Meeting on Resolution under the EMEAP Working Group on Banking Supervision. 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.

The HKMA works closely with the ASEAN+3⁹ authorities to strengthen the operations of the ASEAN+3 Macroeconomic Research Office, to monitor and analyse regional economies and support the decision-making and refinement of the Chiang Mai Initiative Multilateralisation (CMIM)¹⁰. During the year, technical amendments were made to the CMIM to optimise its operation.

Training

The HKMA provides training for staff members from Mainland authorities including the PBoC, the State Administration of Foreign Exchange, and the China Banking and Insurance Regulatory Commission, as well as senior representatives of member banks of the China Banking Association, to foster knowledge and experience sharing. Topics covered in these training seminars included central banking, financial inclusion, consumer protection, bank culture reform, fintech development, financial risk analysis and management, treasury functions and human resources management.

⁹ ASEAN+3 comprises the 10 ASEAN member countries (Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam), together with Mainland China, Japan and South Korea.

¹⁰ Effective March 2010, the CMIM became a regional mechanism that would provide short-term US dollar support to member economies facing liquidity shortages. The total access fund now stands at US\$240 billion.

International Financial Centre

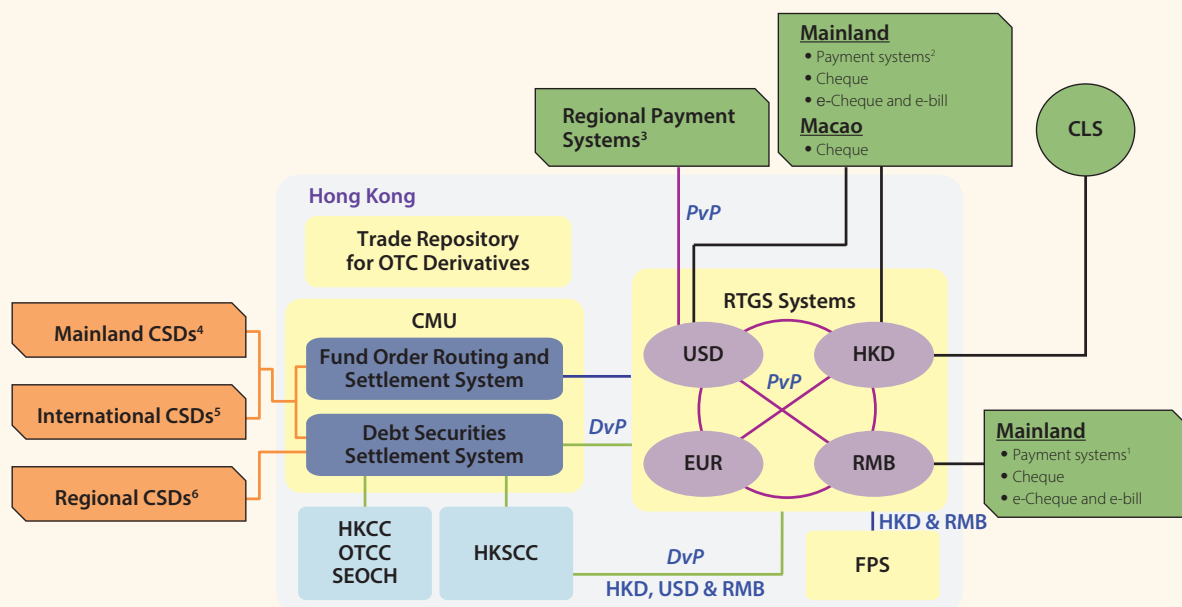
Hong Kong's credit ratings

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 their concerns over the rating outlook. During the year, S&P affirmed Hong Kong's rating at AA+ with a "stable" outlook. Moody's also maintained Hong Kong's rating at Aa2, but changed the rating outlook to "negative" from "stable". Fitch lowered the long-term credit rating of Hong Kong by one notch to AA with a "negative" outlook.

Hong Kong's financial infrastructure

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

Chart 3 Hong Kong's multi-currency financial infrastructure



1: CNAPS, CIPS and SZFSS

2: CDFPCS, RTGS links with Shenzhen and Guangdong

3: PvP links with Malaysia, Thailand and Indonesia

4: Cross-border links with CCDC and SHCH (Bond Connect) and CSDC (Mutual Recognition of Funds)

5: Cross-border links with Clearstream and Euroclear

6: 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 China)

CSDC – China Securities Depository and Clearing Corporation Limited

CDFPCS – China's Domestic Foreign Currency Payment System (RTGS system for foreign currency payment in China)

CIPS – Cross-Border Inter-Bank Payments System in China

CLS – Continuous Linked Settlement (global multicurrency cash settlement system)

CMU – Central Money Markets Unit (settlement system for debt securities)

CNAPS – China National Advanced Payment System (RMB RTGS system in China)

FPS – Faster Payment System

HKCC – HKFE Clearing Corp Ltd (central counterparty providing clearing and settlement for futures)

HKSCC – HK Securities Clearing Co Ltd (operator of the clearing and settlement system for shares)

KSD – Korean Securities Depository (Korea's central securities depository)

OTCC – OTC Clearing Hong Kong Limited (central counterparty providing clearing and settlement for OTC derivatives)

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 China)

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

Clearing and Settlement Systems

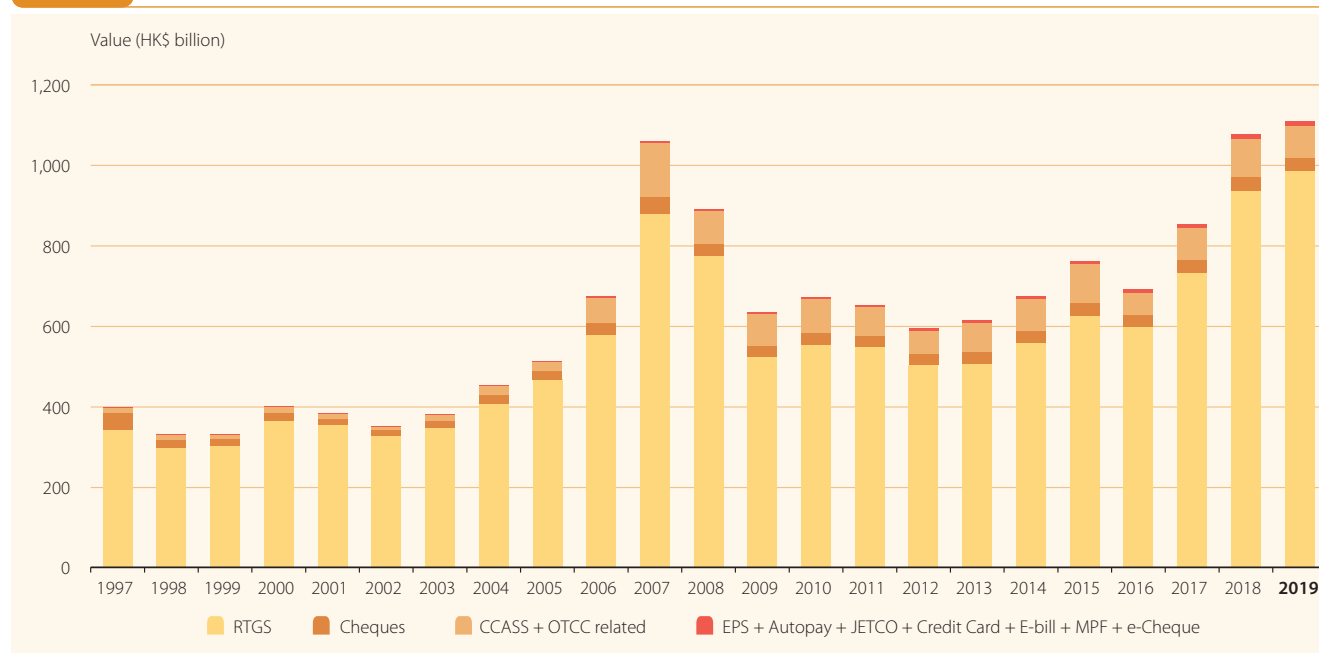
Hong Kong dollar RTGS system

The Hong Kong dollar Clearing House Automated Transfer System (CHATS), which operates on an RTGS basis, is responsible for clearing Hong Kong dollar interbank payments. It continued to run smoothly and efficiently in 2019, with a daily average transaction value of HK\$987.0 billion (30,643 items), compared with HK\$937.6 billion (36,357 items) in 2018.

In addition to settling large-value payments, CHATS handles daily bulk clearings 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 automatic teller machine transfers. As a result of a collaboration between the HKMA and OTC Clearing Hong Kong Limited (OTCC), a central counterparty established by Hong Kong Exchanges and Clearing Limited (HKEX) for the purpose of providing clearing and settlement services for over-the-counter (OTC) derivatives transactions, a new bulk settlement run was launched on 15 July 2019 on Hong Kong dollar CHATS as well as US dollar and renminbi CHATS for more efficient money settlement of the notional exchanges of selected OTCC forex derivatives of USD/HKD and USD/RMB pairs (Chart 4).

Chart 4 Hong Kong dollar RTGS system average daily turnover



International Financial Centre

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 operated smoothly since its inception in September 2018, with a daily average real-time payment transaction value of HK\$1.8 billion (106,596 items) in 2019.

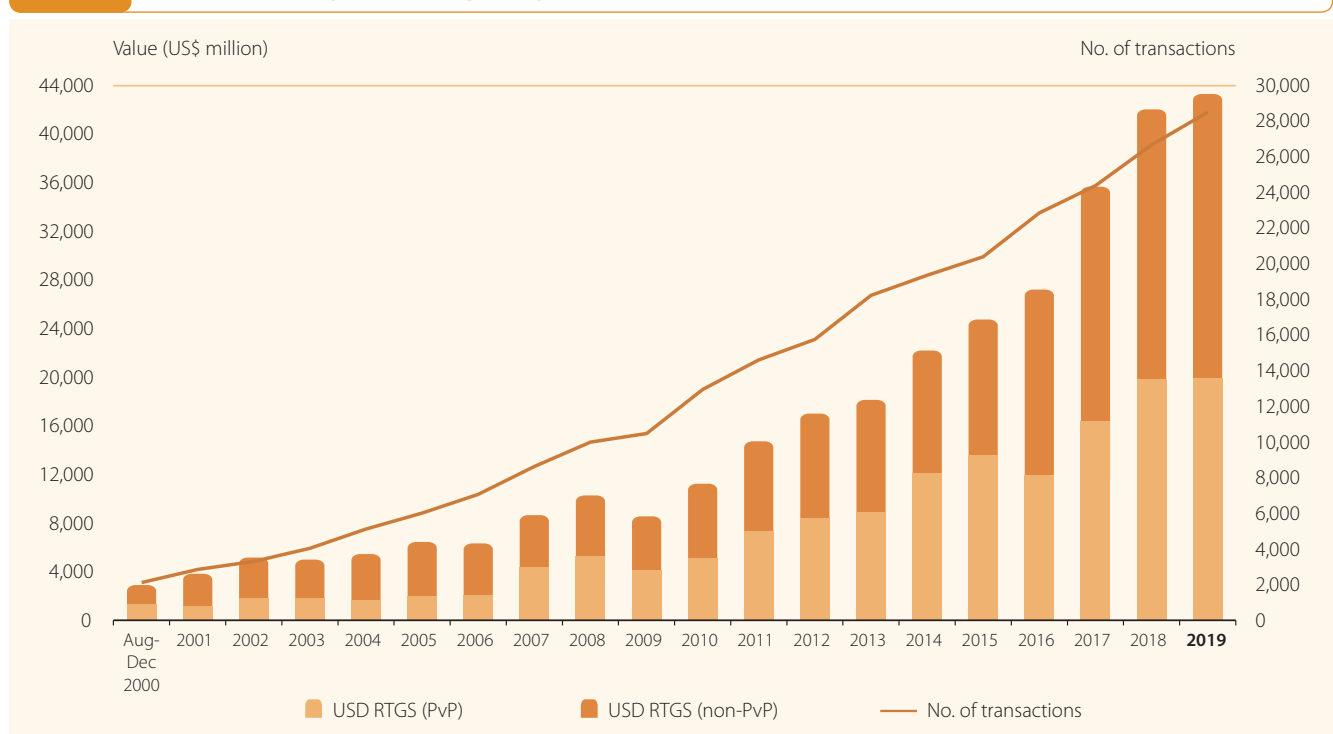
Foreign currency RTGS systems in Hong Kong

The US dollar, euro and renminbi RTGS systems all operated smoothly during the period. 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-border renminbi payments through Hong Kong's infrastructure. The average daily value of Mainland-Hong Kong cross-border renminbi payments amounted to around RMB172 billion in 2019, accounting for 15% of the total turnover.

The average daily turnover and other details of the foreign currency RTGS systems are set out in Charts 5–7 and Table 2.

Chart 5 US dollar RTGS system average daily turnover



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Chart 6 Euro RTGS system average daily turnover

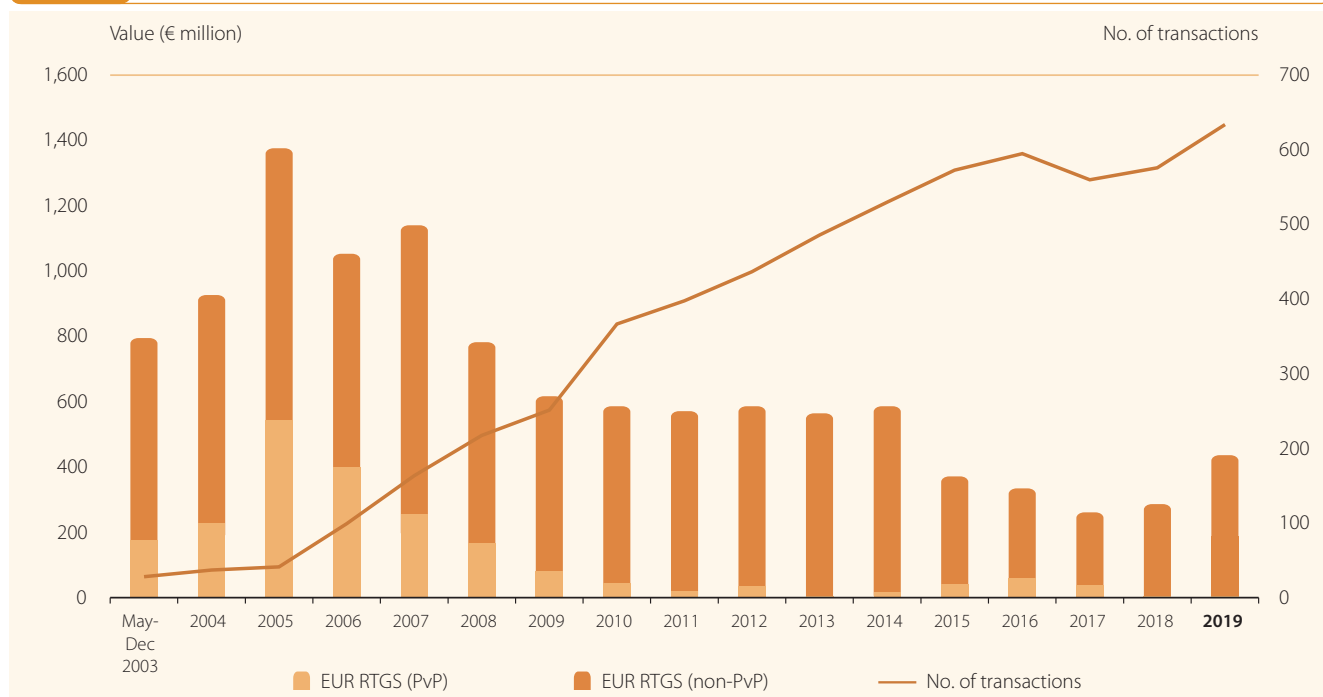
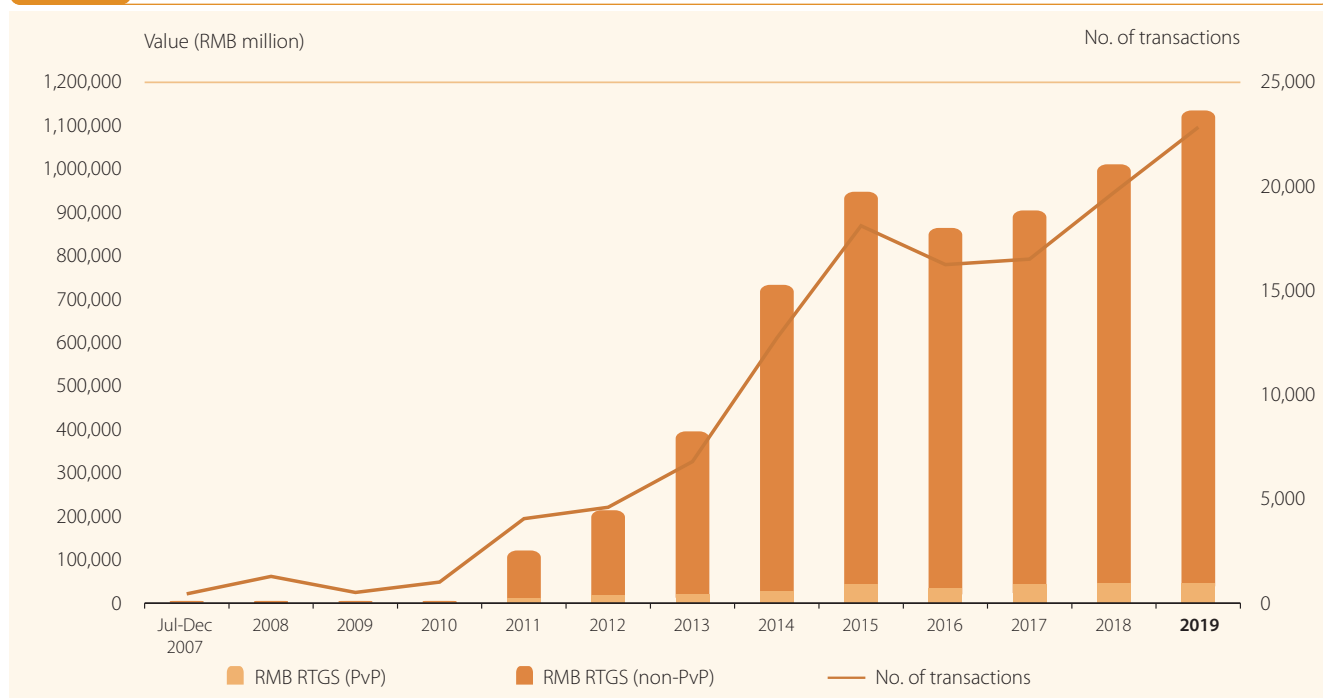


Chart 7 Renminbi RTGS system average daily turnover



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Table 2 Foreign currency RTGS systems

RTGS system	Launch date	Settlement institution or clearing bank	Number of participants at the end of 2019	Average daily turnover in 2019	Average daily transactions in 2019
US dollar RTGS system	August 2000	The Hongkong and Shanghai Banking Corporation Limited	Direct: 107 Indirect: 109	US\$43.3 billion	28,475
Euro RTGS system	April 2003	Standard Chartered Bank (Hong Kong) Limited	Direct: 36 Indirect: 17	€435 million	633
Renminbi RTGS system	June 2007	Bank of China (Hong Kong) Limited	Direct: 205	RMB1,133.9 billion	22,821

Like the Hong Kong dollar FPS, renminbi FPS as an extension of renminbi CHATS has operated smoothly since inception in September 2018, with a daily average real-time payment transaction value of RMB39.6 million (828 items) in 2019.

Payment-versus-payment

PvP is a settlement mechanism for FX 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, US dollar, euro and renminbi RTGS systems.

Hong Kong's US dollar RTGS system has also established three cross-border PvP links, with Malaysia's ringgit RTGS system in 2006, Indonesia's rupiah RTGS system in 2010 and Thailand's baht RTGS system in 2014. PvP greatly improves settlement efficiency and eliminates settlement risk arising from time lags in settlements and time-zone differences, known as Herstatt risk. In 2019, the transaction values of Hong Kong dollar, US dollar, euro and renminbi-related PvP transactions amounted to approximately HK\$14,967 billion, US\$4,674 billion, €0.2 billion and RMB10,626 billion respectively.

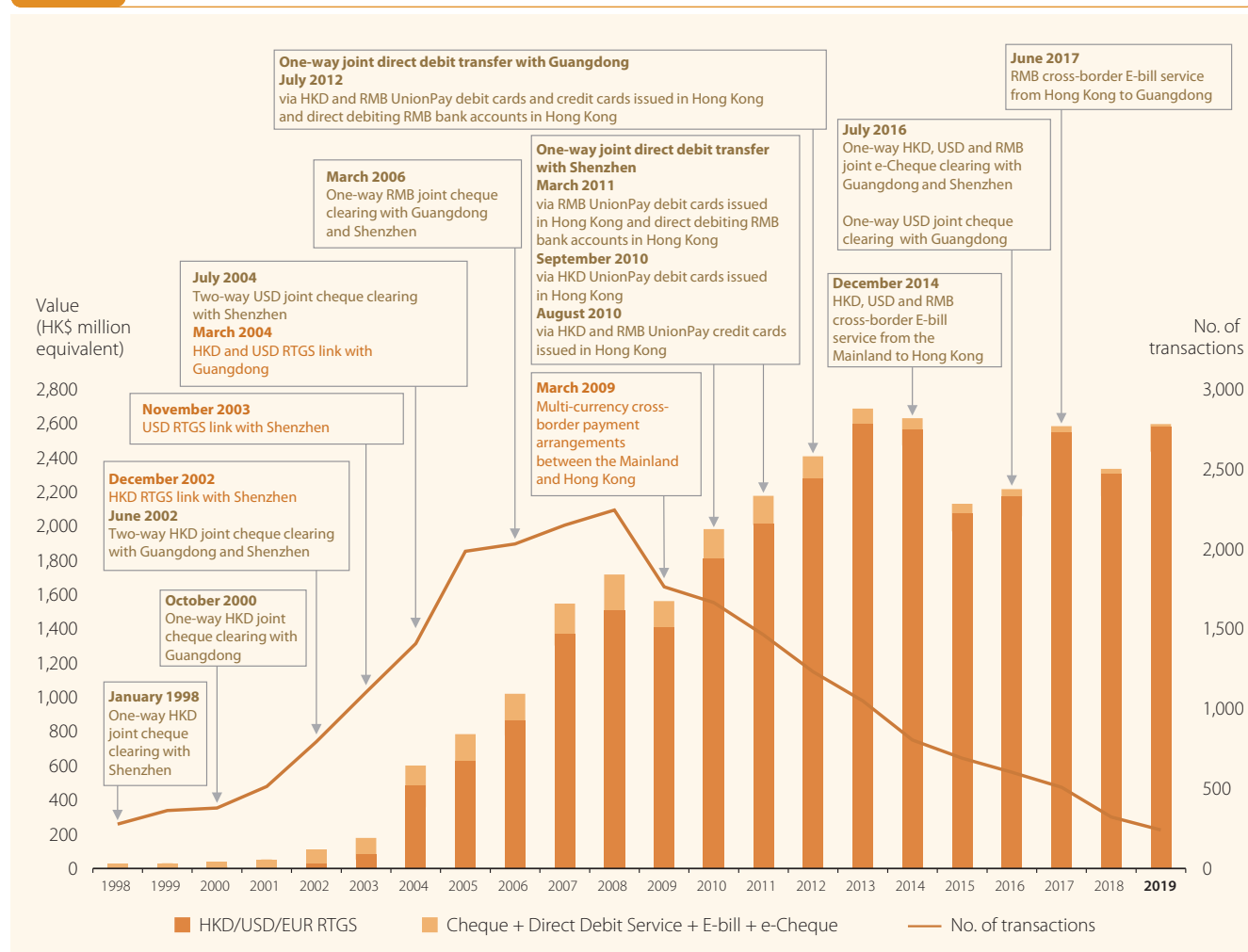
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Payment links with Mainland China

The HKMA works closely with Mainland authorities to provide efficient cross-border payment links (Chart 8) to meet growing demand. In 2019, the average daily turnover of the various system links, including RTGS cross-border links with Mainland's Domestic Foreign Currency Payment Systems, recorded a total value equivalent to HK\$2.6 billion. The Hong Kong dollar and US dollar RTGS system links with Shenzhen and Guangdong handled more than 10,000 transactions, with a total value equivalent to HK\$521.2 billion.

The joint cheque-clearing facilities provided a clearing service for cheques drawn on banks in Hong Kong and presented in Shenzhen and Guangdong. In 2019, such facilities processed about 34,000 Hong Kong dollar, US dollar and renminbi cheques, with a total value equivalent to around HK\$4 billion.

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



International Financial Centre

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 2019, Hong Kong dollar cheques and US dollar cheques amounting to about HK\$19 billion and about US\$44 million respectively were cleared.

Debt securities settlement system

The CMU provides an efficient, one-stop clearing, settlement and depository service for Hong Kong dollar and foreign currency-denominated debt securities issued in Hong Kong. Through the CMU's linkages with international and regional CSDs, investors outside Hong Kong can hold and settle securities lodged with the CMU, while Hong Kong investors can hold and settle foreign securities held with CSDs outside Hong Kong. In 2019, the CMU processed an average daily value of HK\$18.2 billion in 129 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\$1,082.1 billion, the outstanding amount of debt securities issued by public and private sectors was equivalent to HK\$839.0 billion and the outstanding amount of Government Bonds was HK\$100.1 billion (Chart 10).

Trade Repository for OTC derivatives

The HKTR completed the enhancement of the reporting system to support the second phase of mandatory reporting, covering the reporting of all five asset classes of OTC derivatives transactions and the reporting of the valuation information of transactions. By the end of 2019, the HKTR system recorded 2,463,724 outstanding transactions, compared with 2,550,510 in 2018. Separately, 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

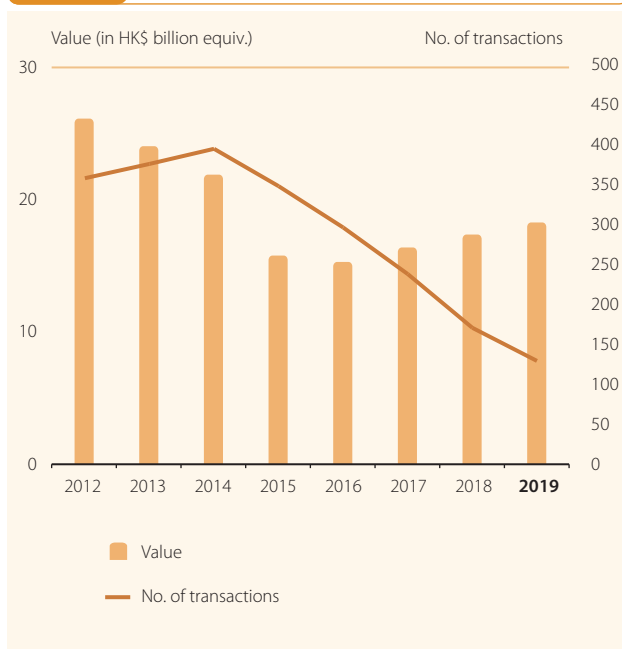
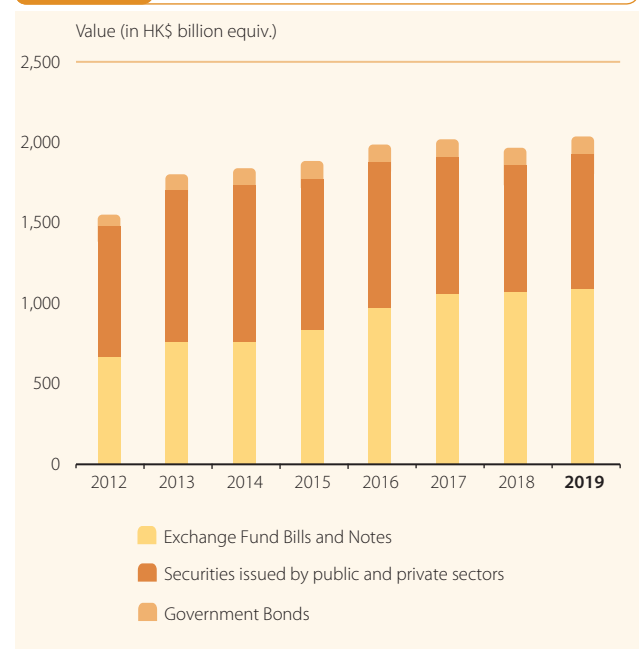


Chart 10 Outstanding amount of CMU issues



International Financial Centre

Hong Kong's retail payment industry



Stored value facilities (including e-wallets, prepaid cards)

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 conduct relevant supervisory and enforcement functions.

The SVF licensees provide the public with services ranging from mobile and internet payments to prepaid card payments. The HKMA granted two new SVF licences in May, bringing the total number of SVF licensees to 18 (Table 3). During the year, the SVF licensees actively rolled out new services and expanded business networks to enhance user experience. They also made use of the FPS, such as by introducing the FPS as an option for users to pay selected Government bills.

To supervise the SVF licensees, the HKMA adopts a principle-and-risk-based supervisory approach. It focuses on areas of significant risk to the SVF industry and individual SVF operators, so that it is able to identify and respond swiftly to any serious threat to the safety and efficiency of the industry and licensees. It conducts ongoing supervisory surveillance and on-site examinations of SVF licensees. The HKMA keeps its supervisory approach under review and introduces enhancement measures as necessary.

In 2019, the SVF industry recorded continued growth. The number of SVF accounts stood at 63.1 million as at the end of the year. In the fourth quarter, 1.5 billion transactions totalling HK\$53.0 billion were recorded (Chart 11). During the year, the HKMA continued to promote public awareness of the SVF regulatory regime and issues associated with the use of SVFs through a series of public education programmes.

Chart 11 Growth trend of the SVF industry in 2019

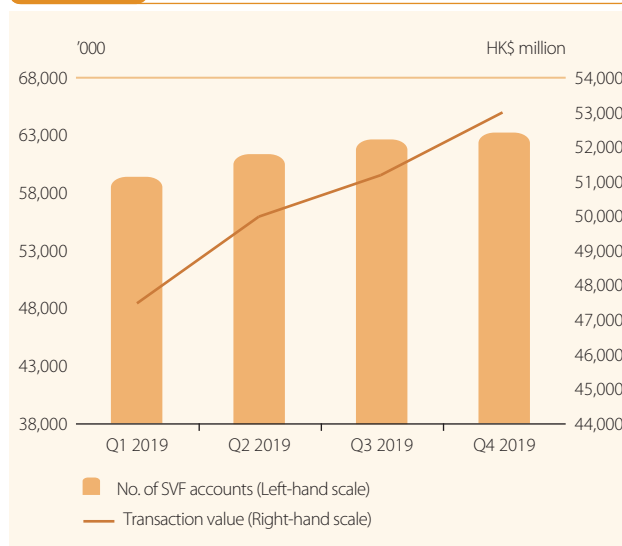


Table 3 Register of SVF Licensees (in alphabetical order)
(as at 31 December 2019)

SVF Licensees

33 Financial Services Limited
 Alipay Financial Services (HK) Limited
 Autotoll Limited
 ePaylinks Technology Co., Limited
 Geoswift Cards Services Limited
 HKT Payment Limited
 K & R International Limited
 Octopus Cards Limited
 Optal Asia 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)¹

Bank of Communications (Hong Kong) Limited
 Dah Sing Bank, Limited
 Hongkong and Shanghai Banking Corporation Limited (The)

1. 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 a total of six RPSs to 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 4). 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 4 System operators of the designated RPSs
(in alphabetical order) (as at 31 December 2019)

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

Electronic Cheque (e-Cheque)

The use of the e-Cheque was steady in the past year. E-Cheques issued by corporates had increased steadily over the previous year. Corporate e-Cheques made up 71% of total e-Cheques issued at the end of 2019, compared with 56% at end-2018. On the other hand, the personal use of e-Cheques declined alongside the launch of the FPS. To further promote wider adoption of the e-Cheque, the HKMA has been working closely with potential third-party service providers to make use of the e-Cheque Open API service to develop innovative applications to help users such as SMEs streamline their operations in managing the e-Cheques received.

Hong Kong's treasury markets

The HKMA participates actively in international discussions and works closely with the Treasury Markets Association (TMA) to prepare industry stakeholders for possible implications on their operations that may arise from the reforms of interest rate benchmarks. A series of major initiatives were undertaken during the year, including identification of the Hong Kong Dollar Overnight Index Average (HONIA) as the alternative reference rate to the Hong Kong Interbank Offered Rate (HIBOR) while retaining the latter as a major interest rate benchmark in Hong Kong, completion of an industry consultation on technical refinements to HONIA, and engagement with market participants to prepare for the possible discontinuation of the London Interbank Offered Rate (LIBOR).

The HKMA organised its annual landmark event, the Treasury Markets Summit, jointly with the TMA in September. The discussions focused on the global economic outlook, transition challenges arising from the possible discontinuation of LIBOR and the impact of new technologies on treasury operations and market dynamics.

To enhance the professionalism of Hong Kong treasury market participants, the HKMA promotes adherence to the Foreign Exchange Global Code among banks and other market participants.

Over-the-counter derivatives market

The HKMA works closely with the SFC to develop detailed rules for implementing the regulatory regime for the OTC derivatives market in Hong Kong, which aims to reduce systemic risk and enhance transparency in the OTC derivatives market. Different aspects of the regulatory regime are 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 on further enhancements to the OTC derivatives regime in June 2019, an updated list of financial service providers under the mandatory clearing regime came into effect in January 2020.

In addition, the HKMA participated in several international forums, including the OTC Derivatives Working Group established under the FSB, and the OTC Derivatives Regulators' Forum, contributing to the relevant international initiatives and monitoring international regulatory developments closely.

International Financial Centre

PLANS FOR 2020 AND BEYOND



The HKMA will continue to work closely with other central banks, government agencies and the private sector, both locally and internationally, to implement initiatives that enhance Hong Kong's position as an international financial centre.

Hong Kong as a fintech hub in Asia

To promote the development and use of fintech in the banking and payment industries, the HKMA will continue to implement the Smart Banking initiatives. At the same time, the HKMA will continue to encourage the adoption of Open API, facilitate eTradeConnect's connection with other regions and trade-related organisations, and further expand the fintech talent pool. To explore the application of new technologies in financial services and facilitate financial innovation, the HKMA will continue to research into new technologies such as AI and CBDC, and maintain close collaboration with its strategic partners and key stakeholders both locally and overseas.

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

International investors' allocation of their resources to renminbi assets is expected to continue to gather pace, with a large part of the inflows continuing to take place through the Connect schemes. In order to capitalise on this trend, the HKMA will continue to work closely with Mainland authorities to enhance and expand the existing channels. The HKMA will also develop measures to further facilitate cross-border access of financial and banking services in the GBA. In particular, the HKMA will work closely with Mainland authorities to formulate the implementation details of the two-way wealth management connect scheme with a view to launching the scheme as soon as possible. The HKMA will also strive to expand existing pilot initiatives in the GBA and explore measures to help GBA corporates and financial institutions operate across the border taking advantage of Hong Kong's financial platform.

Hong Kong as a hub for corporate treasury centres, asset management and green finance

The HKMA will explore ways to further enhance the competitiveness of Hong Kong's financial sector, particularly in the development of Hong Kong as an international asset management hub and regional destination for CTCs, green finance, and fund investment activities. To promote the further development of the private equity industry in Hong Kong, the HKMA will continue to collaborate with the Government and industry to take forward the legislative proposal of the limited partnership regime as well as the 2020–2021 Budget initiative to provide tax concession for carried interest issued by private equity funds operating in Hong Kong.

International and regional co-operation

Trade tensions are likely to persist against a backdrop of continuing weakness in global growth. While easing financial conditions render support to the global growth outlook, interest rate declines are creating further incentives for a global search for yield and contributing to stretched valuations and a build-up of debt vulnerabilities. Reflecting these developments, underlying medium-term risks to global financial stability have not dissipated, and risks of adverse changes in external financial conditions and the re-emergence of volatile capital flows remain. Against this backdrop, 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 continue to participate actively in international and regional forums to promote financial stability.

International Financial Centre

Hong Kong's 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. Riding on the successful launch and operation of the FPS in the first year, the HKMA will continue to explore more potential uses in collaboration with the industry, with a view to further advancing 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. Subject to market needs, the HKMA will consider further enhancements of FPS functionalities to facilitate the use of the FPS in making payments. In addition, it will continue working with various Government departments and public bodies to assist them in adopting the FPS in making and/or receiving payments.

Hong Kong's retail payment industry

While maintaining ongoing supervision of SVF licensees and designated RPSs in accordance with the PSSVFO, the HKMA will work with the industry to promote the use of e-payment in a prudent and regulated manner with a view to better addressing the day-to-day payment needs of the public.

Hong Kong's treasury markets

The HKMA will continue to support the enhancement of 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

The HKMA will work closely with the SFC to further develop detailed rules to implement the regulatory regime for the OTC derivatives market.

Reserves Management



Global financial markets performed better than expected in 2019 as the effect of accommodative monetary policies from major central banks outweighed concerns about the global growth slowdown and US-China trade tensions. Global equity markets rebounded following a significant correction in the fourth quarter of 2018, while major government bond yields declined and bond prices went up. Under such a favourable environment, the Exchange Fund recorded an investment income of HK\$262.2 billion in 2019, representing an investment return of 6.6%.

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 (FS) and within the terms of the delegation, is responsible to the FS 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:

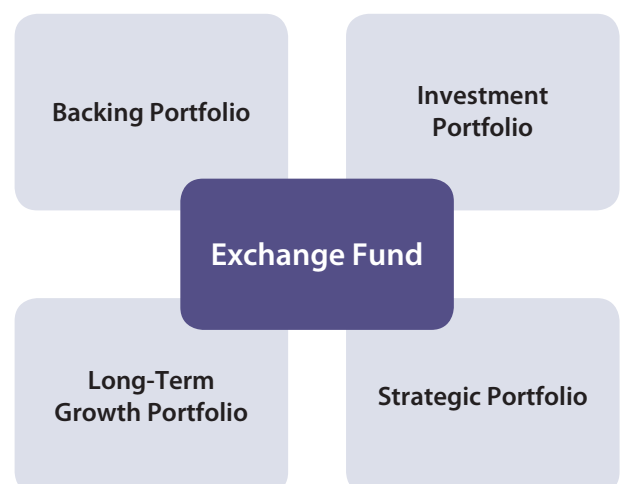
- (a) to preserve capital;
- (b) to ensure that the entire Monetary Base, at all times, is fully backed by highly liquid US dollar-denominated assets;
- (c) to ensure that sufficient liquidity is available for the purposes of maintaining monetary and financial stability; and
- (d) subject to (a)–(c), to achieve an investment return that will help preserve the long-term purchasing power of the Fund.

These objectives take full account of the statutory purposes of the Exchange Fund, and are incorporated into the portfolio structure and the target asset mix of the Fund.

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 Currency Board arrangements. The IP invests primarily in the bond and equity markets of the member countries 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 cap for the market value of investments under the LTGP is set at the aggregate of one-third of the accumulated surplus of the Exchange Fund and the portion of the Future Fund and placements by subsidiaries of the Exchange Fund linked to the LTGP.

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. This Portfolio is not included in the assessment of the Fund's investment performance because of its unique nature.



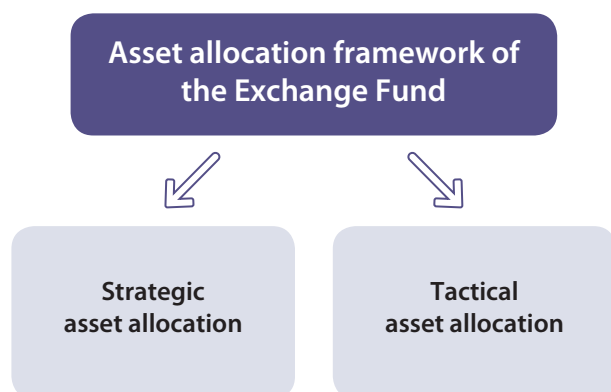
Reserves Management

Placements with the Exchange Fund

The Exchange Fund, from time to time, accepts placements by fiscal reserves, Government funds and statutory bodies. The interest rate is generally linked to the performance of the IP¹, with the major exception of the Future Fund, which links its interest rate to both the IP and the LTGP with reference to the portfolio mix. As at the end of 2019, the portfolio mix of the Future Fund between the IP and the LTGP was about 40:60.

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 error² limit are determined by the FS 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.



¹ The rate is the average annual investment return of the IP for the past six years, or the average annual yield of three-year Government Bond for the previous year subject to a minimum of 0%, whichever is higher.

² “Tracking error” measures how closely a portfolio follows its benchmark.

Investment management

Direct investment

The HKMA set up the Exchange Fund Investment Office (EFIO) in August 2018 to house its investment and related risk management functions. Staff members of the EFIO 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 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 their market insights and technical expertise in investment.

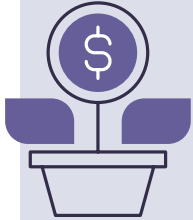
Expenditure relating to the use of external managers includes fund management and custodian fees, transaction costs, and withholding and other taxes. The expenditure is determined primarily by market factors and may fluctuate from year to year.

Risk management and compliance

The growing complexity of the investment environment underlines the importance of risk management. Stringent controls and investment guidelines are in place for both internally and externally managed portfolios, and compliance with guidelines and regulations is closely monitored. As the investment environment has become more complex, risk assessment has been strengthened to support the Exchange Fund’s increased level of investment diversification. Risk-control tools are deployed to assess market risks under both normal and adverse market conditions. Detailed performance attribution analyses are also conducted to identify sources of performance, enabling the HKMA to assess how to make the best use of the investment skills of both internal and external managers.

Reserves Management

Responsible investment



The HKMA is supportive of responsible investment (RI) by weaving environmental, social and governance (ESG) factors into the investment process for both public and private market investments of the Exchange Fund.

In terms of public market investments, the HKMA implements both process-related and investment-related measures. One process-related measure taken by the HKMA is the adoption of the Principles of Responsible Ownership (PRO) issued by the Securities and Futures Commission in 2016, which help investors determine how best to meet their ownership responsibilities in relation to their investments in Hong Kong-listed companies. In managing the Exchange Fund, the HKMA has developed internal guidelines on ESG factors covering the process of selection, appointment and monitoring of external fund managers. The appointed external fund managers for the HKMA's Hong Kong equities and Mainland active equities portfolios are required to adhere to the PRO in managing the investments on a "comply-or-explain" basis, and external fund managers appointed to manage the HKMA's portfolios in developed market equities need to adhere to internationally recognised ESG standards. Apart from externally managed funds, ESG factors are also incorporated into the credit risk analysis of the HKMA's internally managed bond investment.

As for ESG investments in the public market, the HKMA has invested in green bonds since 2015 as one of the early investors in this market, and participates in the Managed Co-Lending Portfolio Programme, which is run by the International Finance Corporation with a focus on sustainable investments across emerging markets. Going forward, the HKMA will continue to grow its green bond portfolio by either direct investment or investing in green bond funds. The HKMA also plans to construct ESG-themed mandates in equities investment by adopting an ESG equities index as a benchmark for passive portfolios and engaging active equities managers who apply ESG factors in their investment decisions.

With respect to private market investments, the HKMA examines the ESG policies and practices of general partners as part of its due diligence process. In particular, ESG risk evaluation is conducted as a mandatory part of due diligence in all LTGP investments. For the LTGP, the HKMA invests in projects with sustainable features; for instance, the HKMA has invested in renewables since 2013 in direct and co-investments in the energy sector, as well as green buildings and warehouses with green and sustainable features in its real estate portfolio. Going forward, the HKMA will continue to source projects with sustainable features and include green accreditation as a predominant factor in real estate investment.

The HKMA will monitor the development of ESG standards closely and assess how these standards can be further integrated into its investment process. The process is facilitated by its collaboration with like-minded investors and relevant international organisations. In particular, being a signatory of the UN-supported Principles for Responsible Investment, which is the world's leading proponent of RI, the HKMA expects to participate in the formulation of ESG best practices and to motivate other investors in adopting RI. Besides, the HKMA is also a member of FCLTGlobal, a not-for-profit organisation that works to encourage a longer-term focus in business and investment decision-making through workshops and research studies. In 2019, the HKMA also became a supporter of the Task Force on Climate-related Financial Disclosures.

For more details about the HKMA's RI policy framework, see the *Corporate Social Responsibility* chapter.

Reserves Management

PERFORMANCE OF THE EXCHANGE FUND

The financial markets in 2019

Despite concerns about the global growth slowdown and US-China trade tensions, global financial markets performed well in 2019 on the back of accommodative monetary policies from major central banks. Following a significant correction in the fourth quarter of 2018, global equity markets rallied in 2019. In the bond markets, major government bond yields declined markedly while bond prices went up in the first three quarters of 2019 as a result of monetary easing. Although bond prices retreated in the fourth quarter amid a slight rebound in yields, the overall gains in the bond markets were still satisfactory in 2019.

In the currency markets, major currencies performed differently against the US dollar. After declining by 3.8% in the third quarter due to an escalation of US-China trade tensions, the renminbi recovered part of its earlier losses in the fourth quarter given easing trade tensions. Overall, the renminbi depreciated by 1.4% against the US dollar. While the pound fell by 3.2% in the third quarter due to the heightened risk of a no-deal Brexit, it had since rebounded significantly as more clarity on Brexit emerged in the fourth quarter, eventually gaining 4.0% against the US dollar.

The performances of major currency, bond and equity markets in 2019 are shown in Table 1.

Table 1 2019 market returns

Currencies

Appreciation (+)/depreciation (-) against US dollar

Euro	-1.8%
Pound	+4.0%
Renminbi	-1.4%
Yen	+1.0%

Bond markets

Relevant US Government Bond (1–30 years) Index	+7.1%
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Equity markets¹

Standard & Poor's 500 Index	+28.9%
DAX Index	+25.5%
FTSE 100 Index	+12.1%
TOPIX Index	+15.2%
MSCI Emerging Markets Index	+15.4%
Hang Seng Index	+9.1%

1. Market performance on equities is based on index price changes during the year.

Reserves Management

The Exchange Fund's performance

The Exchange Fund recorded an investment income of HK\$262.2 billion in 2019. This comprised gains on bonds of HK\$114.5 billion, gains on Hong Kong equities of HK\$22.1 billion, gains on other equities of HK\$100.7 billion, a negative currency translation effect of HK\$13.0 billion on non-Hong Kong dollar assets, and gains of HK\$37.9 billion on other investments held by the investment holding subsidiaries of the Fund. Separately, the Strategic Portfolio recorded a valuation gain of HK\$2.5 billion.

The total assets of the Exchange Fund reached HK\$4,206.7 billion at the year end. The market value of investments under the LTGP totalled HK\$335.1 billion, with private equity amounting to HK\$233.4 billion and real estate at HK\$101.7 billion. Outstanding investment commitments reached HK\$219.3 billion.

The investment return of the Exchange Fund in 2019, excluding the Strategic Portfolio, was 6.6%. Specifically, the IP achieved a rate of return of 9.7%, while the BP gained 2.5%. The LTGP has recorded an annualised internal rate of return of 12.6% since its inception in 2009.

The annual returns of the Fund from 1994 to 2019 are set out in Chart 1. Table 2 shows the 2019 investment return and the average investment returns of the Fund over several different time horizons. The average return was 4.7% over the past three years, 3.1% over the past five years, 2.9% over the past 10 years and 4.8% since 1994³. Table 3 shows the currency mix of the Fund's assets on 31 December 2019.

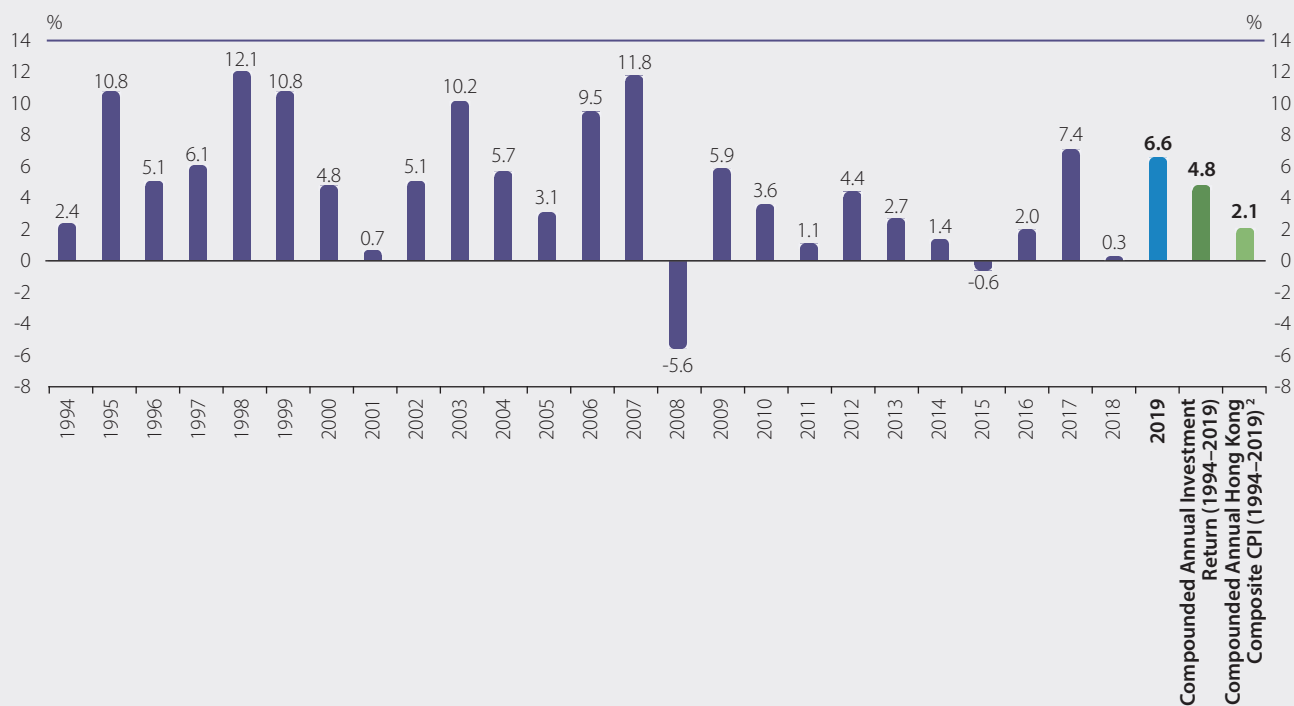


HKMA Deputy Chief Executive, Mr Howard Lee, speaks at the press conference on the Exchange Fund results for 2019.

³ Averages over different time horizons are calculated on an annually compounded basis.

Reserves Management

Chart 1 Investment return of the Exchange Fund (1994–2019)¹



- Investment return calculations exclude the holdings in the Strategic Portfolio.
- The Composite Consumer Price Index is calculated based on the 2014/2015-based series.

Reserves Management

Table 2 Investment return of the Exchange Fund in Hong Kong dollar terms¹

	Investment return ^{2&3}
2019	6.6%
3-year average (2017–2019)	4.7%
5-year average (2015–2019)	3.1%
10-year average (2010–2019)	2.9%
Average since 1994	4.8%

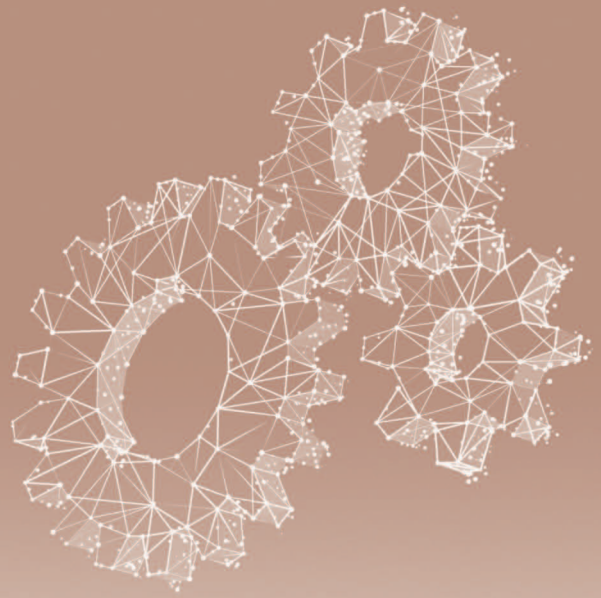
1. The investment returns for 2001 to 2003 are in US dollar terms.
 2. Investment return calculations exclude the holdings in the Strategic Portfolio.
 3. Averages over different time horizons are calculated on an annually compounded basis.

Table 3 Currency mix of the Exchange Fund's assets on 31 December 2019 (including forward transactions)

	HK\$ billion	%
US dollar	3,482.4	82.8
Hong Kong dollar	303.7	7.2
Others ¹	420.6	10.0
Total	4,206.7	100.0

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

Corporate Functions



The HKMA maintains effective communication with the community and the market through the traditional media, social media platforms, its website, the Information Centre and various other channels to facilitate public understanding about its policies and operations. Within the institution, conscientious efforts are made to improve the HKMA's corporate governance by supporting the professional development of staff, instituting rigorous financial discipline, enhancing information technology security, and promoting a culture of innovation to cope with challenges arising from the implementation of new initiatives and the increasing complexity of work.

Corporate Functions

ENGAGING THE COMMUNITY

Media relations and social media

The HKMA works closely with the media to enhance transparency and promote public understanding about its policies and work. During the year, 125 open press events were held, comprising 10 press conferences, 12 stand-up interviews and 103 other public functions. A further 25 media interviews were arranged. A total of 466 bilingual press releases were issued and a large number of media enquiries were handled every day.

To raise awareness of the HKMA's key functions, the HKMA organised media briefings and educational workshops for local and overseas media as well as key opinion leaders in the community to facilitate understanding on a wide range of topics, such as the Linked Exchange Rate System (LERS), virtual banking, green finance, and Hong Kong as a competitive international financial centre.

Since July 2018, the HKMA has launched various social media channels to strengthen public education and communication. Five social media channels are currently in operation: Facebook, Instagram, LinkedIn, Twitter and YouTube, reaching out to a total of over 45,000 followers as at end-December 2019. Amid the social incidents in the second half of 2019, the HKMA made use of social media to rebut unfounded rumours regarding banking operations and financial stability, a move which proved to be highly effective in disseminating facts and preventing the rumours from spreading further.



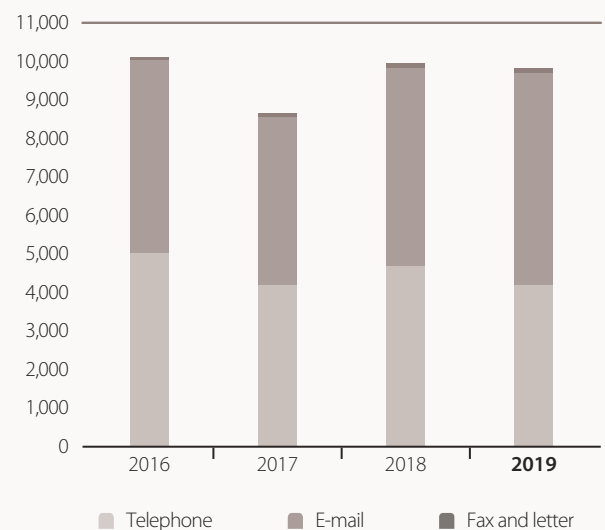
HKMA Chief Executive, Mr Eddie Yue, speaks at the Hong Kong Association of Banks Distinguished Speaker Luncheon.

Public enquiries

The Public Enquiry Service provides an effective means for the public to better understand the key functions and operations of the HKMA. A total of 9,742 enquiries were handled in 2019, about half of which were related to banking policies and regulations, consumer banking, and notes and coins. Some of the notable enquiries raised were about the Coin Collection Programme, banking products and services, banking-related guidelines and circulars, the Faster Payment System (FPS), and monetary and economic statistics.

Chart 1 shows the number of public enquiries received since 2016 and Chart 2 provides a breakdown by enquiry nature in 2019.

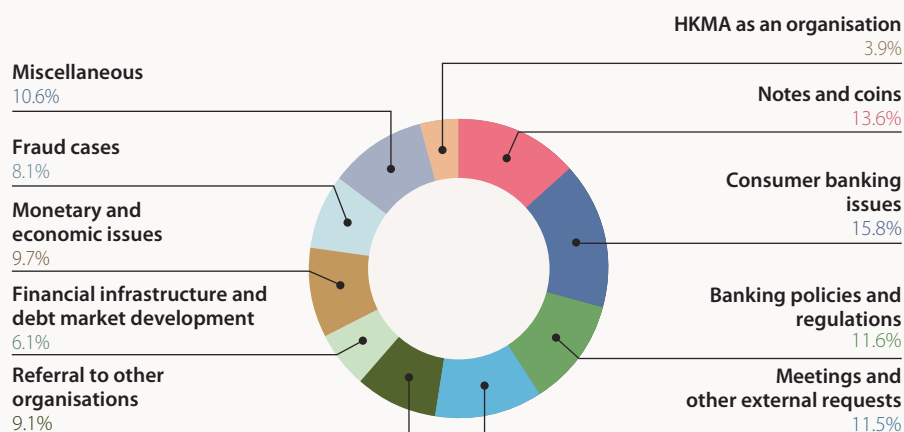
Chart 1 Total number of public enquiries



HKMA Chief Executive, Mr Eddie Yue (left), and HKMA's then Chief Executive, Mr Norman Chan, meet with media after the announcement of the appointment of Mr Eddie Yue as the next Chief Executive of the HKMA.

Corporate Functions

Chart 2 Nature of enquiries received in 2019



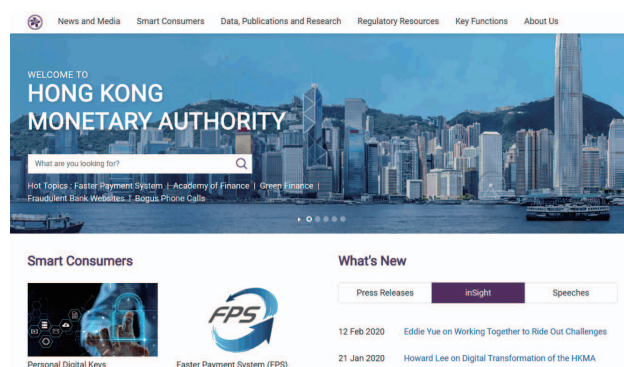
Publications

Apart from the *HKMA Annual Report*, in 2019 the HKMA published two issues of the *Half-Yearly Monetary and Financial Stability Report*, four issues of the *Quarterly Bulletin*, and regular updates of the *Monthly Statistical Bulletin* to provide up-to-date and thematic information and analyses on monetary, banking and economic issues in Hong Kong. In addition, the HKMA published 19 *inSight* articles, covering various topics related to its work. The *inSight* articles provide a useful channel for the HKMA to elucidate the rationale behind its major new initiatives or policies, and provide timely response to topical issues which are of interest to the public.

HKMA website

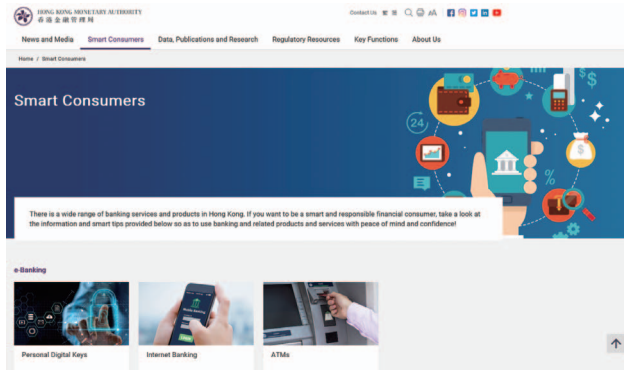
The HKMA official website (www.hkma.gov.hk) presents more than 40,000 pages of content in English and traditional and simplified Chinese, and is the public access gateway to up-to-date information about the HKMA. It also contains the register of authorized institutions (AIs) and local representative offices and the register of the securities staff of AIs, both maintained under section 20 of the Banking Ordinance, as well as the register of stored value facility (SVF) licensees under the Payment Systems and Stored Value

Facilities Ordinance. The HKMA official website underwent a major revamp and was relaunched in September with a new design layout, enriched content, an enhanced navigation structure, and more convenient search functions. The revamped website enables users to search information more easily and conveniently based on their own preferences. In particular, the revamped website carries a new section on “Smart Consumers”, where the public can find useful information and smart tips on a wide range of banking and related products or services. This is in line with the HKMA’s long-standing efforts to promote “smart and responsible” use of banking services.



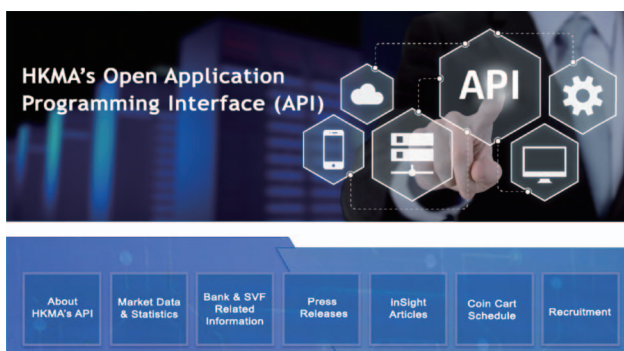
The HKMA launches its revamped website.

Corporate Functions



The revamped HKMA website carries a new section on “Smart Consumers”.

The HKMA has been opening up financial data and important information published on its website via Open Application Programming Interface (Open API) by phases since 2018. By 2019, the HKMA has opened up 130 sets of Open APIs on the HKMA’s website as originally planned.



The HKMA embraces the development and application of Open API.

HKMA Information Centre

The HKMA Information Centre on the 55th floor of Two International Finance Centre is an important resource 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, and is open to the public six days a week. The exhibition area describes the HKMA’s work and the development of money and banking in Hong Kong. It also contains reading materials and exhibits for the study of Hong Kong’s monetary, banking and financial affairs.

The HKMA completed the last phase of revamp of its Information Centre — the Historical Timeline — during the year. The revamped Historical Timeline, featuring multimedia and digital display panels for visitors to review the major monetary and financial events in Hong Kong and globally in a more interactive manner, was re-opened to the public in October.



The first section of the Historical Timeline is made up of a multimedia display panel presenting major events from 1842 to 1993.

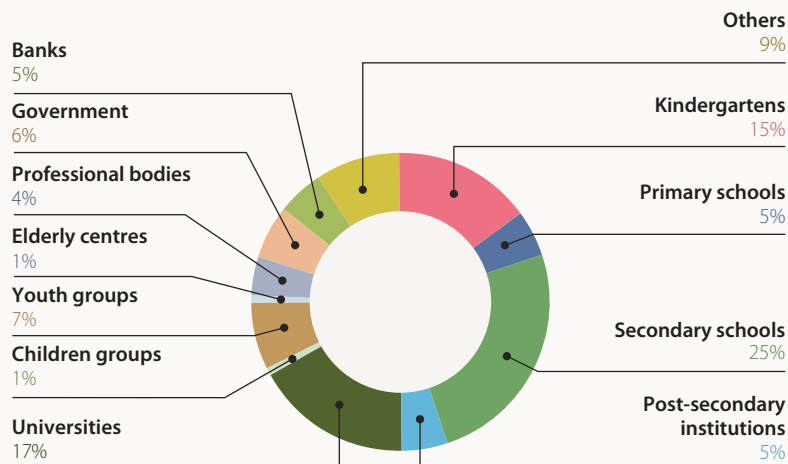


The second section of the Historical Timeline is a digital display panel presenting major events from 1993, when the HKMA was established, to the present.

The Information Centre organises guided tours for visitors. During the year, it received more than 48,000 visitors and hosted over 480 guided tours for schools and other groups (Chart 3). More than 753,000 people have visited the Information Centre since it opened in December 2003.

Corporate Functions

Chart 3 Type of group visits to the Information Centre in 2019



Guided tours of the Information Centre are organised for schools and other group visitors.

The library, situated next to the exhibition area, houses more than 26,000 books, journals and other publications for the study of Hong Kong's monetary, banking and financial affairs and central banking topics. It also maintains the register of AIs and local representative offices and the register of securities staff of AIs, as required by section 20 of the Banking Ordinance.

Public and consumer education

To reach out to the community and raise public awareness of the HKMA's work, the HKMA organised a public education seminar for over 400 secondary school students and teachers in 2019. Topics covered in the seminar included an introduction to the work of the HKMA, Hong Kong's banknotes, the FPS, SVFs, fintech and the Deposit Protection Scheme. More than 60,000 teachers and students have participated in this programme since its launch in 1998.



Students and teachers from secondary schools in different districts attend the 2019 public education seminar.

Corporate Functions

The focus of the HKMA's consumer education initiatives during the year was on educating the public to protect their "personal digital keys", a concept introduced to help the public visualise the significance of safeguarding information for accessing their online accounts. The central message was that in the digital world, account login details and personal information related to internet banking and other digital financial services were as important as the keys to their home, and should be well protected. Extensive promotion was arranged across different media, including the TV, radio, mobile applications, social media, and other digital and out-of-home platforms, to highlight smart tips on how to protect personal digital keys.



The Flagship Campaign on Personal Digital Keys is conducted via extensive cross-media promotion.

Sustained initiatives were also carried out to educate the public to be smart and responsible financial consumers. For example, members of the public were urged to stay vigilant of bogus phone calls purportedly from banks, and of investment scams promoted on social media. Issues to note when handling personal credit products, in particular personal loans taken out during the tax season, were also promoted.

To enhance financial literacy among secondary school students, the HKMA co-organised the "Hong Kong Liberal Studies Financial Literacy Championship" with various stakeholders for the fifth year. Infographics were newly used in the Championship this year to help students better understand sophisticated financial concepts. An online quiz was conducted, attracting 10,450 submissions and culminating in the grand final competition, which was held at the HKMA for the first time.

Corporate Functions



The Achievement Ceremony for the First Phase of the Cross-generation Outreach Programme is held alongside the launch of the Second Phase.



The Championship, attracting over 10,000 online submissions, ends with a live competition at the HKMA.

During the year, the HKMA kicked off the Second Phase of its Cross-generation Outreach Educational Programme, which was organised jointly with an education institution. The programme comprised bank simulation games, parents' talks and train-the-trainer workshops, targeting kindergarten pupils, their parents and teachers, as well as young adults. Other initiatives on youth education included producing comic storybooks for primary school students and parents jointly with a professional association, as well as delivering talks to tertiary school students.

The HKMA continued to support the Investor and Financial Education Council in promoting financial literacy and capacity in Hong Kong, and will explore further collaboration with different stakeholders to maximise the impact of consumer education.



Kindergarten pupils participate in the bank simulation game.



Comic storybooks are produced jointly with a professional association to disseminate smart tips on using banking and financial services to primary school students and their parents.

Corporate Functions

OUR PEOPLE

While the HKMA is an integral part of the Government, it employs staff on terms different from those of the civil service to attract people with the right experience and expertise. 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 2019 was 1,005. During the year, the HKMA conducted a cross-departmental re-engineering exercise to enhance the efficiency of various work processes and redeploy existing resources to support new initiatives. As a result of this rigorous exercise, the overall establishment of the HKMA in 2020 remains unchanged at 1,005. Resources have been redeployed to undertake the following new tasks:



Banking and Financial Stability

- Develop and implement a supervisory regime for virtual banks and cope with the increasingly complex prudential supervision standards
- Enhance supervisory capacity for the new regulatory regime for insurance intermediaries
- Step up ongoing monitoring of banks' culture reform, and conduct ongoing supervision of banks and other relevant entities providing trust services



Reserves Management

- Strengthen investment and risk management and other necessary support for the further expansion and diversification of the Exchange Fund's investment activities



Hong Kong as an International Financial Centre

- Support reforms that enhance the international competitiveness of Hong Kong's tax regime regarding different financial services sectors
- Enhance the daily qualitative market surveillance and analyses of Trade Repository data

Corporate Functions

Table 1 gives a breakdown of the establishment and strength of the HKMA.

Table 1 Establishment and strength of the HKMA on 1 January 2020

Department	Functions	Senior staff		Others	
		Establishment	Strength	Establishment	Strength
Senior Executives' Office	Top management of the HKMA	4	4	9	9
Banking Conduct	To take charge of payment systems oversight, licensing, and all supervisory and development functions relating to the business conduct of Als	1	1	88	82
Banking Policy	To formulate supervisory policies for promoting the safety and soundness of the banking sector, enhance the capacity building of industry practitioners, and take charge of the deposit protection function	1	1	47	44
Banking Supervision	To supervise operations of Als	1	1	180	169
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	100	95
Exchange Fund Investment Office	To manage reserves in line with established guidelines to achieve investment returns and enhance the quality of returns by diversifying investments into different markets and asset types	1	1	105	88
Risk and Compliance*	To oversee all risk-generating activities, including investment risks and other non-investment related corporate risks of the HKMA	1	1	45	41
External	To help 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	54	48
Financial Infrastructure	To develop and enhance the financial market infrastructure for maintaining and strengthening Hong Kong's status as an international financial centre, take charge of the settlement function, and ensure an adequate supply of banknotes and coins	1	1	54	50
Monetary Management	To maintain financial and monetary stability through macro-financial surveillance and monitoring of market operations, license and supervise SVFs, and designate and oversee important Retail Payment Systems	1	1	50	46
Research	To conduct research and analyses on economic and financial market developments in Hong Kong and other economies	1	1	40	36
Office of the General Counsel	To provide in-house legal support and advice	1	1	28	26
Corporate Services	To provide support services in the form of administrative, finance, human resources, information technology and secretariat services, handle media and community relations, and consumer education	1	0	167	157
Internal Audit Division	To provide audit services through assisting the management in controlling risks, monitoring compliance and improving the efficiency of internal control systems and procedures	0	0	10	10
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	9
Total		16	15	989	910

* Staff members overseeing investment risks are part of the Exchange Fund Investment Office set-up. For presentational reason they are grouped under Risk and Compliance Department.

Corporate Functions

Remuneration policies and pay review mechanism

The Financial Secretary (FS) determines the pay and conditions of service for HKMA staff on the advice of the Governance Sub-Committee (GSC) through the Exchange Fund Advisory Committee (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 the 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 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 within the approved overall pay awards.

Remuneration of senior staff members

The remuneration packages of senior staff members in 2019 are shown in Table 2.

Table 2 Remuneration packages of HKMA senior staff members in 2019¹

HK\$'000	Chief Executive ²		Deputy Chief Executive/ Senior Executive Director (average)	Executive Director (average)
	Norman Chan	Eddie Yue		
Number of staff members ³	1	1	5	13
Annualised pay				
Fixed pay	7,396	7,000	5,910	4,064
Variable pay ²	2,869	–	1,935	1,102
Other benefits ⁴	1,299	956	762	557

1. 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.
2. Mr Eddie Yue took over from Mr Norman Chan as Chief Executive of the HKMA on 1 October 2019. The actual variable pay corresponding to Mr Chan's services between January and September 2019 was HK\$2.35 million.
3. The number of staff members in this table includes those who did not serve out a full year. The HKMA senior staff members include the Chief Executive Officer of the Hong Kong Mortgage Corporation, the Commissioner of the Resolution Office, and the Chief Operating Officer of the Exchange Fund Investment Office.
4. 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

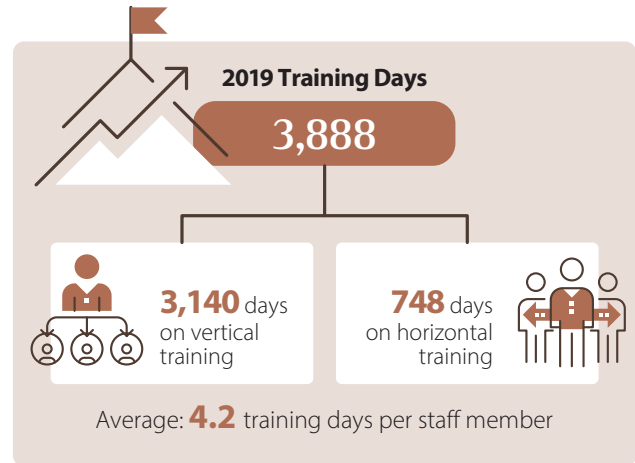
Conduct and discipline

The HKMA places great emphasis on the integrity and conduct of its staff, and expects them to observe an exemplary standard of personal conduct and integrity and to act in the best interests of the HKMA. A Code of Conduct is available to provide guidance to staff on their ethical and legal responsibilities.

Continuous efforts are made to maintain the staff's awareness of conduct-related rules and regulations. Since 2018, a series of weekly email alerts were issued to staff to enhance their awareness of a number of important conduct issues related to the avoidance of conflict of interest, prevention of corruption, personal data protection, and anti-discrimination. During the year, an online testing platform was developed to deepen staff's understanding of the relevant policies, rules and regulations.

Staff development

The HKMA accords priority to developing its staff's capabilities to cater for operational needs and career development, and to increase the staff's adaptiveness to new challenges. Considerable efforts are devoted to training the staff's vertical (job-specific) and horizontal (general) skills in accordance with the identified individual and organisational needs. During the year, a number of training initiatives were launched to support various functional areas, such as banking supervision, financial technology and investment management. Topical briefings on the HKMA's work and new and emerging trends were also arranged to keep the staff abreast of the latest financial developments. These included briefings on responsible investment and Environmental, Social and Governance (ESG) issues, green finance, fintech developments, data analytics, cybersecurity, and bank culture and conduct. A new Leadership Training Programme was launched during the year to strengthen the managerial capability of staff members, especially on strategic agility and people management. The training programmes were organised in-house or by the Government, other central banking institutions, local and overseas universities, consultants, and training institutions.



An internal briefing on "Big Data Analytics".



The new Leadership Training Programme.

Corporate Functions

A Continuous Capacity Development Programme is implemented to encourage a culture of continuous learning and to maintain the competency level of HKMA staff. This is in addition to a training sponsorship scheme that supports staff members in pursuing studies relevant to the work of the HKMA. The HKMA also provides reimbursement of membership fees of relevant professional bodies to its staff members.

To enhance work exposure of the staff and promote cross-fertilisation of skills and experience, the HKMA encourages staff members to rotate across different job areas and offers secondment opportunities to the HKMA's New York Office, HKMA-related organisations, other regulatory authorities and the Government. Secondment to international and local organisations, such as the International Monetary Fund (IMF) and the Financial Services Development Council, is also arranged so that staff members can assist 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 Treasury Markets Association.

Corporate Functions

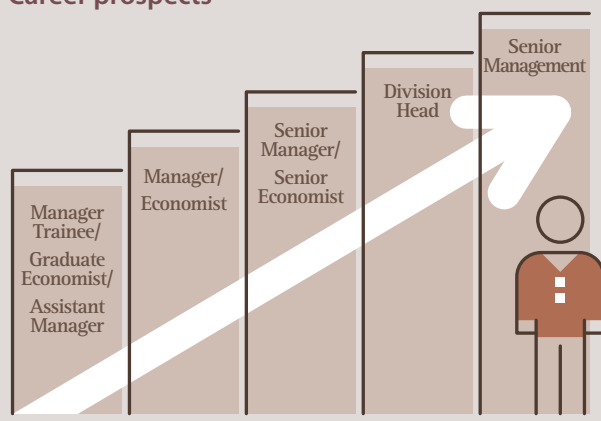
Manager Trainee (MT) and Graduate Economist (GE) Programmes

To develop a pool of young talent 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 MT programme and the GE programme. Each programme lasts for a period of two years.

The MT programme prepares young graduates interested in central banking work to become the HKMA's future key management team and 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 the MT and GE programmes provide an all-rounded 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 professional career in the organisation.

Career prospects



Assistant Managers (AMs)

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. Young graduates with a keen interest in banking supervision and regulation would find the position of AM a good starting point for a fulfilling career.

Internship Programmes

The HKMA runs summer and winter internship programmes for undergraduates to equip them with practical work experience and insights about the roles of a central bank. Talks, training sessions and guided tours at the Information Centre are provided to give the interns a better understanding of the functions and work of the HKMA.

Internship events



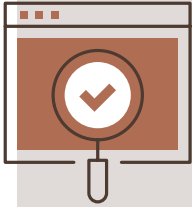
A sharing session on the work of the Exchange Fund Investment Office.



A talk on fintech trends and developments.

Corporate Functions

HKMA's Digitalisation Programme



Fintech has been one of the HKMA's work priorities in recent years. While encouraging banks to adopt fintech to improve the quality of banking products and services, the HKMA, as a financial regulator, is also embracing digital transformation to enhance the effectiveness and efficiency of its work.

Indeed, the HKMA has always been using and analysing various types of data. Nonetheless, with substantial improvements in computing power and rapid reductions in data storage cost, many institutions have begun to explore ways to enhance effectiveness by applying data science. The HKMA is no exception. It embarked on a series of studies during the year on how to make use of new technologies.

The HKMA's digitalisation programme covers multiple functions, including banking supervision, anti-money laundering, financial stability surveillance, economic research and reserves management.



An industry session with banks on Granular Data Reporting.

On banking supervision, through the use of supervisory technology, the HKMA can automate supervisory processes and use data science and network analytics applications to help identify emerging risks and trends in a more forward looking manner. The HKMA is also carrying out a pilot project to collect more granular data from banks. It facilitates the regulatory reporting of data by banks on a transaction basis, thereby providing richer data that could be used flexibly by the HKMA to analyse the complex interconnectedness, concentration and distribution of various risks in the financial system. This project could have the potential of replacing many template-based regulatory reports and lessening the reporting burden on banks.

To take forward the digitalisation programme, the HKMA will set up a Digitalisation Office to formulate a long-term digital strategy and oversee the entire digital transformation process to help the HKMA become a more data-driven organisation. At the same time, various efforts are underway to gear up staff's awareness and capabilities. These include a series of Finnotalks and training opportunities to support staff in acquiring necessary knowledge and skills in the digitalisation journey.



Finnotalk on artificial intelligence.

Corporate Functions

ADMINISTRATION

The HKMA regularly reviews its corporate resources, including space requirements, to ensure that its 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 work on nurturing a caring workplace and a green office, see the *Corporate Social Responsibility* chapter.

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 every year to ensure the responsiveness and preparedness of staff in carrying out various business continuity measures. A dedicated team monitors influenza alerts and other relevant infectious diseases to make sure that the necessary precautionary and contingency measures can be taken in a timely manner.

FINANCE

In drawing up the annual budget, the HKMA takes into account its ongoing operations, as well as its strategic development as set out in its Three-Year Plan approved by the FS on the advice of the EFAC. 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 assess critically the value of 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 scrutiny by senior management. The GSC of the EFAC then deliberates on the proposed budget and recommends any changes it considers necessary, before putting it through the 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 2019 and the budgeted expenditure for core activities in 2020 are shown in Table 3. The difference between the 2019 actual expenditure and the 2020 budget is mainly due to an increase in staff costs, including the full-year effect of the staff changes and pay review in 2019, and increases in provisions for external relations and professional services.

Table 4 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 2020. 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 according to section 6 of the Deposit Protection Scheme Ordinance (Cap. 581).

Corporate Functions

Table 3 HKMA administrative expenditure

HK\$ million	2019 Budget	2019 Actual	2020 Budget
Staff costs	1,589		1,665
Salaries and other staff costs		1,347	
Retirement benefit costs		118	
Premises expenses			
Rental expenses	31	31	43
Other premises expenses (including management fees and utility charges)	73	66	81
General operating costs			
Maintenance of office and computer equipment	130	116	128
Financial information and communication services (including trading, dealing terminals and data link charges)	79	63	86
External relations (including international meetings)	63	31	78
Public education and publicity	28	17	51
Professional and other services	114	67	197
Training	18	9	32
Others	16	12	17
Total administrative expenditure	2,141	1,877	2,378

Table 4 Additional expenses

HK\$ million	2019 Budget	2019 Actual	2020 Budget
Financial support to international financial organisations in Hong Kong	41	41	42
Service fees for financial infrastructure	200	79	110

Financial disclosure

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 (HKFRSs) and other applicable reporting requirements, for example, the IMF'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 HKFRSs. To achieve a high level of transparency, the HKMA also provides detailed disclosures and thorough analyses of a wide range of expense items and budgetary information in its *Annual Report*.

INFORMATION TECHNOLOGY

The Information Technology (IT) Division maintains a reliable and secure IT operational environment that supports the smooth and efficient operation of the HKMA.

In 2019, all time-critical systems of the HKMA maintained full operational uptime.

Corporate Functions

IT security is a high-priority task of the IT Division. All emerging threats in cyber space are monitored closely and the IT security system is reviewed regularly. A business contingency plan is in place and updated from time to time to ensure uninterrupted operation of all critical systems. To ensure continued reliability of the HKMA's IT systems, ageing components of the IT infrastructure have been updated in batches.

SETTLEMENT SERVICES

The Settlement Section provides reliable and efficient settlement services and operational support to reserves management, monetary operations and other initiatives undertaken by the HKMA. In 2019, the Settlement Section further enhanced the security of its processes by implementing effective and innovative operational and system controls. Different measures were adopted to ensure the funds and assets of the Exchange Fund would be transferred accurately and securely. As the financial industry is developing rapidly through technological advancement and innovation, the Settlement Section will continue to respond swiftly to new changes.

OFFICE OF THE GENERAL COUNSEL

The Office of the General Counsel (OGC) is responsible for providing legal advice to the HKMA on all aspects of its functions.

In the course of providing legal support, the OGC assists in the planning and implementation of specific projects and initiatives involving complex issues of commercial, regulatory and administrative law. Examples of the OGC's involvement in 2019 include:

- ◆ ongoing implementation of the Basel Committee on Banking Supervision standards through the making of the Banking (Liquidity) (Amendment) Rules 2019 and the issuance of the Code of Practice relating to provisions of the Banking (Exposure Limits) Rules
 - ◆ continued development of the resolution regime in Hong Kong for banking sector entities, including resolution planning for systemically important AIs; and preparatory work on the development of standards for operational continuity in resolution and stays on contractual termination rights.
- The OGC also provides commentary to government bureaux on significant legislative proposals, and responds to consultations, about matters which may impact the functions or mandates of the HKMA.
- OGC lawyers provide legal support for the HKMA's participation in various international working groups and attend seminars, meetings and conferences for legal experts, central bankers, financial regulators and the banking community to keep abreast of topical developments and to discuss and resolve issues of current legal concern.

INTERNAL AUDIT

The Internal Audit (IA) Division provides independent and objective assurance on the adequacy and effectiveness of the HKMA's control, risk management and governance processes. The IA Division reports directly to the Chief Executive of the HKMA and the Audit Sub-Committee (ASC) of the EFAC.

Adopting a risk-based approach, the IA Division conducts operational and information system audits to cover all significant risk areas of the HKMA. It also advises on major system development projects and internal control issues in response to requests from senior executives and management. Risk updates are provided to the Risk Committee regularly, while audit progress and key internal control matters are reported to the senior executives and the ASC on a quarterly basis.

Corporate Functions

RISK MANAGEMENT

One of the most important tasks of the HKMA 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 of the HKMA and at a higher level through strategic planning. There are two high-level committees under the HKMA's risk management framework, namely the Macro Surveillance Committee and the Risk Committee. Both committees 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
- ◆ 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
- ◆ to encourage a stronger risk management culture institutionally which promotes the proper levels of authorisation and controls.

Because of the growing complexity of activities the HKMA engages in, and the increasing public expectations of the organisation's work, a robust operational risk management process is in place. The framework covers 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 on a quarterly basis. 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. These assessments are discussed at the Risk Committee, which decides on appropriate follow-up actions.

Corporate Social Responsibility



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 and environment-friendly marketplace, supporting the wider community, protecting the environment and nurturing a caring workplace.

Corporate Social Responsibility

MARKETPLACE

Green and sustainable banking

Climate change is one of the major risks threatening the well-being of mankind and the sustainability of the world economy. The financial sector in which banks operate, being an integral part of the society, will also be impacted and hence should be more proactive in managing climate risks. The HKMA is committed to exploring ways to address this challenge. Against this background, the HKMA unveiled in May a number of measures for promoting the development of green finance in Hong Kong, including the adoption of a three-phased approach to promote green and sustainable banking:



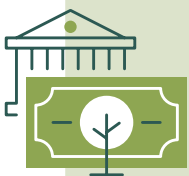
Phase I

developing a common framework to assess the “Greenness Baseline” of individual banks, and collaborating with relevant international bodies to provide technical support to banks in Hong Kong so that they can better understand the green principles and methodology involved in undertaking the baseline assessment;



Phase II

engaging the industry and other relevant stakeholders in a consultation on the supervisory expectations and requirements of green and sustainable banking, with a view to setting tangible deliverables that promote the green and sustainable development of the Hong Kong banking industry; and



Phase III

focusing on the implementation, monitoring and evaluation of banks’ progress in this regard.

Given the global nature of the challenge, international forums serve as an important platform for the HKMA to understand the latest developments, approaches and practices in other jurisdictions. In this connection, the HKMA participates actively in the Central Banks and Supervisors Network for Greening the Financial System to share experiences and co-ordinate efforts to tackle climate change-related risks. The Basel Committee on Banking Supervision and its working groups, in which the HKMA participates, also identify this challenge as an emerging supervisory issue.

See the *Banking Stability* chapter for more details about the progress on promoting green and sustainable banking during the year.

Hong Kong as a hub for green finance

To demonstrate the Government’s support for sustainable development and determination to combat climate change and promote green finance development in Hong Kong, the Financial Secretary announced the Government Green Bond Programme (GGBP) in the 2018–19 Budget. Proceeds raised under the Programme would be used for financing public work projects with environmental benefits.

As the implementation agent for the GGBP, the HKMA assisted the Government in issuing the inaugural green bond successfully in May 2019, with an issuance size of US\$1 billion. The issuance not only set an important new benchmark for potential green bond issuers in Hong Kong and the region, but also set a good example by deploying best market practices during the issuance process. The issuance was also well recognised by the international community. For instance, the bond was included in at least four major international green bond indices and has won several green and sustainability awards granted by international financial service providers.

The Centre for Green Finance, established in 2019, aims to promote Hong Kong as the hub for green finance in Asia and to champion the importance of sustainability within infrastructure investment and financing. It works with a cluster of key stakeholders to build the green finance capacity of Hong Kong’s financial industry, and to promote market and product development in local and regional markets.

Corporate Social Responsibility

See the *International Financial Centre* chapter for more details about the HKMA's work on developing Hong Kong as a green finance hub during the year.

Responsible investment

As the investment manager of the Exchange Fund, the HKMA believes that the concept of responsible investment (RI) is highly relevant to its investment work. As the HKMA is one of the world's largest asset owners, it will have a major impact on how fund managers pick assets.

Our Beliefs

The HKMA sees RI as an investment approach that takes into account the impact of various environmental, social and governance (ESG) factors on long-term investment returns and their sustainability. The HKMA believes that, by putting an appropriate emphasis on RI and sustainable long-term economic performance, it can better achieve the investment objectives of the Exchange Fund and reduce risks associated with the ESG-related matters of its underlying investments.

Our Principles

The HKMA's guiding principle is that priority will generally be given to ESG investments if the long-term risk-adjusted return is comparable with other investments. Where appropriate, the HKMA adopts in its investment process the following RI principles that underpin its beliefs as a responsible long-term investor:

Integration

The HKMA incorporates ESG factors into its investment analysis processes to identify risks and opportunities, as it believes that these factors can materially affect the long-term value of its investments. Specifically, the HKMA has been integrating ESG factors into its investment process for both public and private market investments. For public market investments, the HKMA incorporates ESG factors in its credit risk analysis of bond investment. External managers that share the HKMA's RI beliefs are selected and appointed. The HKMA communicates its RI beliefs to all its external managers and expects them to align in such a way that the overall sustainable long-term economic performance target is attainable. For private market investments, the ESG policies and practices of the HKMA's general partners are examined as part of its due diligence process.

Active ownership

The HKMA exercises shareholder rights in its public equity holding in a manner that helps safeguard the long-term value of its investments. The HKMA believes that responsible corporate behaviour guided by ESG factors will help create shareholder value in the long term. The HKMA's asset managers are expected to help the HKMA discharge its ownership responsibilities in the underlying investments by adopting active ownership through exercising voting rights and engaging with the corporates concerned.

Collaboration

The HKMA seeks to join hands with like-minded investors and regulators to promote good practices for the long-term management of investments. It participates in and speaks at public events to share views and encourage the investment community to adopt RI.

See the *Reserves Management* chapter for more details about the HKMA's work on RI during the year.

Promoting financial inclusion

The HKMA attaches great importance to financial inclusion and has been making significant effort in promoting access to basic banking services by different segments of the society to meet the basic daily needs of the general 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 the delivery of basic banking services to serve the general public, particularly residents of remote areas and public housing estates, and the elderly;
- ◆ Facilitating and monitoring the accessibility of bank accounts to individuals and small and medium-sized enterprises (SMEs);
- ◆ Enhancing the accessibility of banking services to specific customer groups, for example, customers with disabilities and ethnic minorities;
- ◆ Facilitating and monitoring the accessibility of bank credit to SMEs; and

Corporate Social Responsibility

- ◆ Granting authorization to eight virtual banks, which will play an active role in promoting financial inclusion in delivering their banking services.



Barrier-free banking services

- Wheelchair accessible bank branches: **over 94%**
- Voice navigation ATMs: **over 1,000**
- Branches with assistive listening system: **over 660**



Cash withdrawal service for the elderly

- Outlets of convenience store chain: **over 300**
- Hongkong Post Offices and Mobile Post offices: **over 160**



Mobile branch locations served by three retail banks: **27**



Simple Bank Accounts opened: **over 2,800**



Virtual bank licences granted: **8**

See the *Banking Stability* chapter for more details about the HKMA's work on promoting financial inclusion during the year.

COMMUNITY

Promoting financial literacy

The HKMA promotes financial literacy through various channels. Apart from running educational programmes to promote smart and responsible use of banking and financial services by the public, the HKMA features on its revamped official website a new dedicated section on "Smart Consumers", where the public can find useful information and smart tips on a wide range of banking and related products and services. Social media platforms such as Facebook, LinkedIn, YouTube, Instagram and Twitter are used in addition to the HKMA official website and publications to provide up-to-date information on banking and financial affairs.

The HKMA Information Centre, serving as the HKMA's major public education and research resource since 2003, introduces the work of the HKMA to the community and promotes public awareness of monetary and banking matters. Educational guided tours are offered daily for group visitors from schools and non-profit making organisations. Public education seminars and other activities are also organised for students to enhance their financial knowledge and literacy. In addition, the HKMA works closely with the Investor and Financial Education Council to promote financial literacy in Hong Kong via its financial education platform, The Chin Family.

See the *Corporate Functions* chapter for more details about the HKMA's work on promoting financial literacy during the year.

Corporate Social Responsibility

Addressing the needs of special groups

Accessibility of Hong Kong banknotes

The 2018 Series of Banknotes retains accessibility features used in the previous series of banknotes to help the visually impaired differentiate between the denominations. These accessibility features include Braille, tactile lines and high-tactility numerals.



To help the visually impaired differentiate between the denomination of the banknotes, a mobile app, sponsored by the HKMA and developed by the Hong Kong Society for the Blind, uses the phone's camera to scan the

banknote patterns for the denomination. The app is available for download from Apple App Store and Google Play Store for free. A note-measuring template sponsored by the HKMA and the three note-issuing banks has also been introduced to measure the length of the note. It can measure both the 2018 Series and the notes currently in circulation. The template is embossed with Braille on one side and symbols on the other. It is freely distributed at voluntary agencies serving the visually impaired community.

Coin Collection Programme

Under the Coin Collection Programme, the HKMA collaborates with the Hong Kong Council of Social Service to deploy the Coin Carts to collect coins on flag days for non-governmental organisations.

Accessibility of public information

The revamped HKMA official website was launched in September. The revamped website has enhanced navigation structure to facilitate easy and convenient search by users based on their own preferences. In particular, the website contains a dedicated webpage "Information in Other Languages" under the "Smart Consumers" section, which provides useful information on banking services in seven languages commonly used by the ethnic minority community, namely Bahasa Indonesia, Hindi, Nepali, Punjabi, Tagalog, Thai and Urdu.

The HKMA is committed to ensuring that its website conforms to the maximum extent possible to the World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (WCAG) 2.0 Level AA standard, to facilitate barrier-free access to its online information by people with special needs.

Volunteer and charitable activities

The HKMA supports community services by taking part in volunteer and charitable activities.

The Senior Citizen Home Safety Association awarded the Community Engagement Crystal Award to the HKMA for participating in the 2018 Love & Peace of Mind Corporate Engagement Programme.

Corporate Social Responsibility

Charitable events participated in by the HKMA Volunteer Team in 2019



"Charity Run"

organised by Po Leung Kuk



"YO! Let's Walk the Road"

organised by the Youth Outreach

"Share-To-Care Volunteer Campaign"

organised by the Agency for Volunteer Service



Flag selling

organised by the Yuen Yuen Institute, Senior Citizen Home Safety Association, Hong Kong Association for Cleft Lip and Palate, the Conservancy Association, and Hong Kong Blind Union



"Fundraising and greeting card writing"

organised by S.K.H. St. Christopher's Home

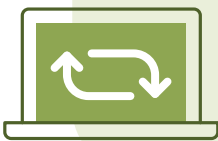


"Telephone operator volunteers"

for the "Community for the Chest" Television Show, organised by the Community Chest

Home visits

to the elderly organised by the Neighbourhood Advice-Action Council and Senior Citizen Home Safety Association



"Donation of computer appliances"

to Caritas Computer Workshop



A singing performance

arranged during a visit to Po Leung Kuk Wan Chai Home for the Elderly cum Day Care Centre for the Elderly

Corporate Social Responsibility



"Yo! Let's Walk the Road" by the Youth Outreach.



Artists and representatives from the social enterprise, Arts with the Disabled Association Hong Kong, visit the HKMA office, where its artworks are displayed.

HKMA staff members take part actively in Blood Donation Day, Territory-Wide Flag Day, Community Chest's Green Day, Love Teeth Day, Skip Lunch Day, Dress Casual Day and regular campaigns that collect clothes, toys and other reusable items for donation to charities.



HKMA staff members take part actively in Blood Donation Day, organised by the Hong Kong Red Cross.

Caring organisation

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 13th consecutive year.



Corporate Social Responsibility

ENVIRONMENT

Green office measures

The HKMA has an established environmental policy to protect and preserve the environment. The policy and implementation measures are promulgated among its staff regularly. Green office measures include:



Paper/Photocopying/Printing

- ◆ Encouraging the use of recycled paper and envelopes;
- ◆ Distributing electronic copies instead of hard copies of documents;
- ◆ Printing on both sides of the paper;
- ◆ Using colour printing and copying only when necessary;
- ◆ Avoiding the use of paper cups; and
- ◆ Using environmentally friendly paper and ink for the HKMA's *Annual Report*.



Electricity

- ◆ Switching off PCs, printers, lights, audio-visual systems and other electrical appliances when these devices are not in use. Reactivating the preset power-saving mode installed in most equipment, such as water dispensers, electric punching machines and shredders, after use outside their preset operating hours; and
- ◆ Reviewing regularly the need for additional air-conditioning beyond normal business hours.



Recycling

- ◆ Making good use of recycled bins to collect different categories of waste, including paper, cans, bottles, batteries, CDs and ink cartridges.

Corporate Social Responsibility

WORKPLACE

Diversity and inclusion

Equal Opportunities Policy

The HKMA is an equal opportunities employer. It believes that everyone should be able to work in an environment free of discrimination, harassment, vilification and victimisation. The equal opportunities policy applies to job advertisements, recruitment, terms and conditions of employment, performance assessment, promotion, transfer, training, dismissal, grievance procedures and general conduct.

Key statistics on diversity

People are central to the work of the HKMA. We value the diversity of our workforce, which has a balanced gender representation and a spectrum of different age groups.

Female representation at the senior management levels, that is, Executive Director and above, made up 31% as of February 2020.

Human capital key statistics on 1 January 2020

Chart 1 Gender of staff

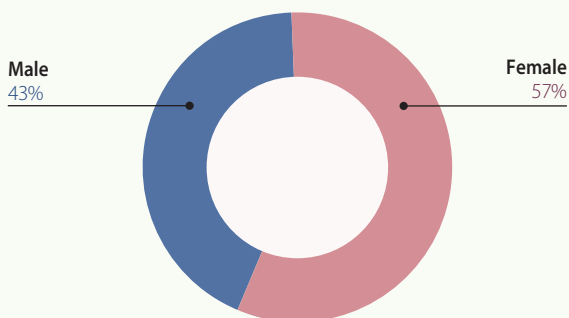


Chart 2 Age of staff

≥ 50 years old

22.4%

40 to 49 years old

28.5%

30 to 39 years old

38.0%

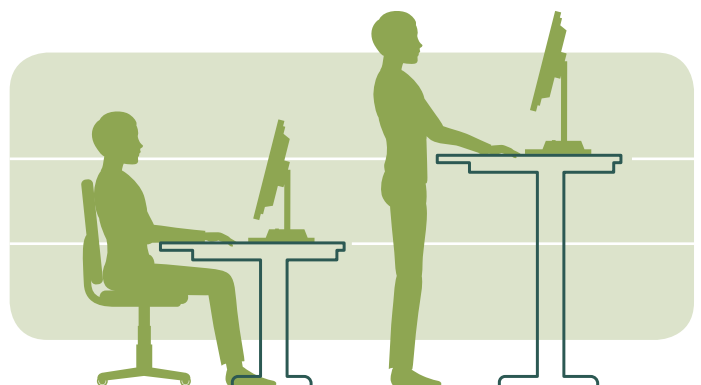
< 30 years old

11.1%

Average: 41 years old

Quality workplace

To cater for projected operational needs, the HKMA renovated the offices during the year to create an open layout, increase capacity and allow for more efficient use of space. Breakout areas and ergonomic furniture are part of the new office design. To enhance the staff's physical health, height-adjustable desks were offered to staff members, allowing them to change their postures easily throughout the day between sitting and standing.



Height-adjustable desks improve office ergonomics.

Corporate Social Responsibility

Staff well-being

The HKMA promotes work-life balance and cares about the health and work safety of the staff. Regular talks on healthy lifestyles, stress management and workplace safety are organised and indoor air quality is monitored. Annual on-site medical check-ups and flu vaccinations are arranged. The HKMA also sponsors a professional counselling service comprising experienced psychologists and social workers.

Throughout the year, different activities are organised to enhance the staff's physical wellness, promote their sense of belonging, and foster co-operation and team spirit. Interest classes are held for staff members and their families. Inter-organisational and cross-divisional activities such as basketball and football competitions with fellow regulators provide opportunities to socialise.



A nature trail hike in Lai Chi Wo organised by the HKMA Hiking Team.



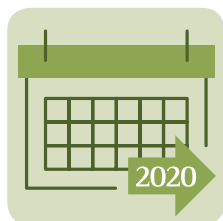
The 27th Dr. Henry Fok Corporate Patron League 2019, organised by the Hong Kong Tennis Association.



Supervisory Cup Basketball Competition.

Corporate Social Responsibility

PLANS FOR 2020 AND BEYOND



The HKMA will continue its efforts in addressing climate change risks and promoting green finance development in Hong Kong in different capacities. As a banking supervisor, the HKMA will further promote green and sustainable

banking by proceeding to Phase II of the three-phased approach to set supervisory expectations and requirements for the banking industry. As the manager of the Exchange Fund, the HKMA will further develop and implement its RI policy by incorporating ESG factors into investment decisions and processes. As a market facilitator, the HKMA will assist the Government to issue more green bonds, enhance green finance capacity of market players, and promote Hong Kong's international profile in green finance.

The HKMA will also keep working with the banking industry to enhance the accessibility of banking services to different segments of the community, and promoting financial literacy via various channels.

Within the institution, the HKMA will step up green office measures, including installing motion sensors in common areas and meeting rooms to further reduce electricity use, and working with the building managers to collect waste, in particular plastic lunch boxes, for recycling. It will also continue its efforts in supporting and participating in various charitable activities and volunteer work, and fostering a caring and healthy workplace for its staff.

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 187 to 293, which comprise the balance sheets of the Exchange Fund and of the Group as at 31 December 2019, 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 2019, 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 2019. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Report of the Director of Audit (continued)

Key audit matter	How the matter was addressed in my audit
Valuation of financial assets and financial liabilities at fair value <i>Refer to notes 2.5, 2.6 and 38.1 to the financial statements.</i>	
<p>As at 31 December 2019, the Group had financial assets totalling HK\$3,874,223 million and financial liabilities totalling HK\$1,158,686 million valued at fair value.</p> <p>For 91% 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).</p> <p>For the remaining 9% 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\$338,758 million, including mainly unlisted investment funds.</p> <p>Given the substantial amount and the estimations involved, valuation of financial assets and financial liabilities at fair value was a key audit matter.</p>	<p>The audit procedures on valuation of financial assets and financial liabilities at fair value included:</p> <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; – obtaining external confirmations on the valuation, existence, rights and obligations and completeness of the financial assets and financial liabilities; – where quoted market prices were used, verifying the prices to independent sources; – where valuation techniques with inputs based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions, and verifying the inputs to independent sources; and – where valuation techniques with inputs not based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions and inputs.
Valuation of investment properties at fair value <i>Refer to notes 2.11, 18 and 19 to the financial statements.</i>	
<p>The Group's investment properties were stated at their fair values, totalling HK\$22,481 million as at 31 December 2019. The Group also had interests in twenty two joint ventures totalling HK\$44,506 million, whose principal activities were holding overseas investment properties. The fair values of these investment properties, whether held by the Group directly or by 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.</p>	<p>The audit procedures on valuation of investment properties at fair value included:</p> <ul style="list-style-type: none"> – obtaining and reviewing the valuation reports of investment properties held by the Group directly or by 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 2019 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

3 April 2020

Audit Commission
26th Floor
Immigration Tower
7 Gloucester Road
Wanchai, Hong Kong

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Exchange Fund – Income and Expenditure Account

for the year ended 31 December 2019

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2019	2018	2019	2018
INCOME					
Interest income		69,579	65,424	67,811	63,705
Dividend income		16,456	16,310	13,850	14,231
Income from investment properties		1,374	1,918	–	–
Net realised and unrealised gains/(losses)		191,446	(62,457)	158,239	(80,551)
Net exchange loss		(13,923)	(8,961)	(13,019)	(8,947)
Investment income/(losses)	4(a)	264,932	12,234	226,881	(11,562)
Bank licence fees		128	125	128	125
Net premiums earned	5	1,849	3,015	–	–
Other income		503	451	82	69
TOTAL INCOME		267,412	15,825	227,091	(11,368)
EXPENDITURE					
Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	4(b)	(62,793)	(74,019)	(62,793)	(74,019)
Other interest expense	4(c)	(20,902)	(14,104)	(20,025)	(13,184)
Operating expenses	4(d)	(5,888)	(5,553)	(4,673)	(4,513)
Note and coin expenses	4(e)	(548)	(379)	(548)	(379)
(Charge for)/Reversal of impairment allowances	4(f)	(92)	(15)	1	(1)
Net claims incurred, benefits paid and movement in policyholders’ liabilities	5	(2,021)	(3,321)	–	–
TOTAL EXPENDITURE		(92,244)	(97,391)	(88,038)	(92,096)
SURPLUS/(DEFICIT) BEFORE SHARE OF PROFIT OF ASSOCIATES AND JOINT VENTURES					
		175,168	(81,566)	139,053	(103,464)
Share of profit of associates and joint ventures, net of tax		3,088	2,213	–	–
Gain on disposal of an associate		47	–	–	–
SURPLUS/(DEFICIT) BEFORE TAXATION		178,303	(79,353)	139,053	(103,464)
Income tax	6	(657)	(84)	–	–
SURPLUS/(DEFICIT) FOR THE YEAR		177,646	(79,437)	139,053	(103,464)
SURPLUS/(DEFICIT) FOR THE YEAR ATTRIBUTABLE TO:					
Owner of the Fund		177,332	(79,793)	139,053	(103,464)
Non-controlling interests		314	356	–	–
		177,646	(79,437)	139,053	(103,464)

The notes on pages 195 to 293 form part of these financial statements.

Exchange Fund – Statement of Comprehensive Income

for the year ended 31 December 2019

(Expressed in millions of Hong Kong dollars)	Group		Fund	
	2019	2018	2019	2018
SURPLUS/(DEFICIT) FOR THE YEAR	177,646	(79,437)	139,053	(103,464)
OTHER COMPREHENSIVE INCOME/(LOSS)				
Items that will not be reclassified to income and expenditure account				
Equity securities measured at fair value through other comprehensive income				
– fair value changes on revaluation	66	(4)	66	(4)
Items that may be reclassified subsequently to income and expenditure account				
Debt securities measured at fair value through other comprehensive income				
– fair value changes on revaluation	26	(7)	–	–
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	10	(1,518)	–	–
Translation reserve released on disposal of an associate	(17)	–	–	–
OTHER COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR, NET OF TAX	85	(1,529)	66	(4)
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR	177,731	(80,966)	139,119	(103,468)
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR ATTRIBUTABLE TO:				
Owner of the Fund	177,431	(81,288)	139,119	(103,468)
Non-controlling interests	300	322	–	–
	177,731	(80,966)	139,119	(103,468)

The notes on pages 195 to 293 form part of these financial statements.

Exchange Fund – Balance Sheet

as at 31 December 2019

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2019	2018	2019	2018
ASSETS					
Cash and money at call	8	181,527	183,521	180,741	182,573
Placements with banks and other financial institutions	9	153,369	172,556	125,201	143,097
Financial assets measured at fair value through income and expenditure account	10	3,866,803	3,682,911	3,586,245	3,452,969
Financial assets measured at fair value through other comprehensive income	11	6,131	6,246	1,210	1,144
Derivative financial instruments	12(a)	1,289	4,432	1,088	4,270
Debt securities measured at amortised cost	13	12,034	11,547	–	–
Loan portfolio	14	9,310	7,498	–	–
Gold	15	793	670	793	670
Other assets	16	127,666	99,945	123,833	97,638
Interests in subsidiaries	17	–	–	184,654	169,746
Interests in associates and joint ventures	18	46,528	44,336	–	–
Investment properties	19	22,481	25,321	–	–
Property, plant and equipment	20	3,261	3,046	2,965	2,792
TOTAL ASSETS		4,431,192	4,242,029	4,206,730	4,054,899
LIABILITIES AND EQUITY					
Certificates of Indebtedness	21	516,062	485,666	516,062	485,666
Government-issued currency notes and coins in circulation	21	12,988	12,639	12,988	12,639
Balance of the banking system	22	67,688	78,584	67,688	78,584
Placements by banks and other financial institutions	23	35,000	56,346	35,000	56,346
Placements by Fiscal Reserves	24	1,137,490	1,173,484	1,137,490	1,173,484
Placements by Hong Kong Special Administrative Region Government funds and statutory bodies	25	328,406	320,534	328,406	320,534
Placements by subsidiaries	26	–	–	12,597	7,710
Exchange Fund Bills and Notes issued	27	1,152,327	1,129,610	1,152,327	1,129,610
Derivative financial instruments	12(a)	6,212	4,075	5,728	3,755
Bank loans	28	11,348	12,795	–	–
Other debt securities issued	29	40,370	37,928	–	–
Other liabilities	30	202,720	187,255	189,018	176,247
Total liabilities		3,510,611	3,498,916	3,457,304	3,444,575

Exchange Fund – Balance Sheet (continued)

as at 31 December 2019

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2019	2018	2019	2018
Accumulated surplus		920,256	742,852	748,709	609,673
Revaluation reserve		742	650	717	651
Translation reserve		(2,528)	(2,531)	–	–
Total equity attributable to owner of the Fund		918,470	740,971	749,426	610,324
Non-controlling interests		2,111	2,142	–	–
Total equity		920,581	743,113	749,426	610,324
TOTAL LIABILITIES AND EQUITY		4,431,192	4,242,029	4,206,730	4,054,899

Eddie Yue

Monetary Authority

3 April 2020

The notes on pages 195 to 293 form part of these financial statements.

Exchange Fund – Statement of Changes in Equity

for the year ended 31 December 2019

(Expressed in millions of Hong Kong dollars)	Attributable to owner of the Fund				Non-controlling interests	Total
	Accumulated surplus	Revaluation reserve	Translation reserve	Total attributable to owner of the Fund		
Group						
At 1 January 2018	822,645	661	(1,047)	822,259	1,957	824,216
Deficit for the year	(79,793)	–	–	(79,793)	356	(79,437)
Other comprehensive loss for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income	–	(11)	–	(11)	–	(11)
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	(1,484)	(1,484)	(34)	(1,518)
Total comprehensive loss for the year	(79,793)	(11)	(1,484)	(81,288)	322	(80,966)
Capital distribution to non-controlling interests	–	–	–	–	(123)	(123)
Dividends paid to non-controlling interests	–	–	–	–	(14)	(14)
At 31 December 2018	742,852	650	(2,531)	740,971	2,142	743,113
At 1 January 2019	742,852	650	(2,531)	740,971	2,142	743,113
Adjustments on initial application of HKFRS 16 (note 3.1.1)	72	–	(4)	68	2	70
At 1 January 2019, as adjusted	742,924	650	(2,535)	741,039	2,144	743,183
Surplus for the year	177,332	–	–	177,332	314	177,646
Other comprehensive income for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income	–	92	–	92	–	92
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	24	24	(14)	10
Translation reserve released on disposal of an associate	–	–	(17)	(17)	–	(17)
Total comprehensive income for the year	177,332	92	7	177,431	300	177,731
Capital distribution to non-controlling interests	–	–	–	–	(326)	(326)
Dividends paid to non-controlling interests	–	–	–	–	(7)	(7)
At 31 December 2019	920,256	742	(2,528)	918,470	2,111	920,581

Exchange Fund – Statement of Changes in Equity (continued)

for the year ended 31 December 2019

(Expressed in millions of Hong Kong dollars)	Attributable to owner of the Fund				Non-controlling interests	Total
	Accumulated surplus	Revaluation reserve	Translation reserve	Total attributable to owner of the Fund		
Fund						
At 1 January 2018	713,137	655	–	713,792	–	713,792
Deficit for the year	(103,464)	–	–	(103,464)	–	(103,464)
Other comprehensive loss for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income	–	(4)	–	(4)	–	(4)
Total comprehensive loss for the year	(103,464)	(4)	–	(103,468)	–	(103,468)
At 31 December 2018	609,673	651	–	610,324	–	610,324
At 1 January 2019	609,673	651	–	610,324	–	610,324
Adjustments on initial application of HKFRS 16 (note 3.1.1)	(17)	–	–	(17)	–	(17)
At 1 January 2019, as adjusted	609,656	651	–	610,307	–	610,307
Surplus for the year	139,053	–	–	139,053	–	139,053
Other comprehensive income for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income	–	66	–	66	–	66
Total comprehensive income for the year	139,053	66	–	139,119	–	139,119
At 31 December 2019	748,709	717	–	749,426	–	749,426

The notes on pages 195 to 293 form part of these financial statements.

Exchange Fund – Statement of Cash Flows

for the year ended 31 December 2019

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2019	2018	2019	2018
Cash flows from operating activities					
Surplus/(Deficit) before taxation		178,303	(79,353)	139,053	(103,464)
Adjustments for:					
Interest income	4(a)	(69,579)	(65,424)	(67,811)	(63,705)
Dividend income	4(a)	(16,456)	(16,310)	(13,850)	(14,231)
Change in fair value of investment properties	4(a)	(46)	(408)	–	–
Interest expense	4(b) & 4(c)	83,695	88,123	82,818	87,203
Depreciation	4(d)	360	228	247	178
Charge for/(Reversal of) impairment allowances	4(f)	92	15	(1)	1
Share of profit of associates and joint ventures		(3,088)	(2,213)	–	–
Gain on disposal of an associate		(47)	–	–	–
Loss on disposal of property, plant and equipment		1	–	–	–
Elimination of exchange differences and other non-cash items		4,326	7,668	2,458	6,070
Interest received		68,661	62,802	66,996	61,168
Interest paid		(77,895)	(67,969)	(76,966)	(67,166)
Dividends received		16,356	16,336	13,669	14,240
Income tax paid		(120)	(82)	–	–
		184,563	(56,587)	146,613	(79,706)
Change in fair value of derivatives and other debt securities issued		5,273	(3,856)	5,150	(3,752)
Change in carrying amount of:					
– placements with banks and other financial institutions		3,459	(7,618)	4,698	(3,155)
– financial assets measured at fair value through income and expenditure account		(194,288)	7,902	(141,852)	50,076
– loan portfolio		(1,906)	323	–	–
– gold		(123)	7	(123)	7
– other assets		(26,693)	(44,669)	(25,275)	(43,695)
– Certificates of Indebtedness, government-issued currency notes and coins in circulation		30,745	29,366	30,745	29,366
– balance of the banking system		(10,896)	(101,206)	(10,896)	(101,206)
– placements by banks and other financial institutions		(21,346)	(2,991)	(21,346)	(2,991)
– placements by Fiscal Reserves		(35,994)	99,690	(35,994)	99,690
– placements by Hong Kong Special Administrative Region Government funds and statutory bodies		7,872	15,424	7,872	15,424
– placements by subsidiaries		–	–	4,887	7,710
– Exchange Fund Bills and Notes issued		22,717	84,362	22,717	83,862
– other liabilities		8,334	(4,821)	6,641	(7,896)
Net cash (used in)/from operating activities		(28,283)	15,326	(6,163)	43,734

Exchange Fund – Statement of Cash Flows (continued)

for the year ended 31 December 2019

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2019	2018	2019	2018
Cash flows from investing activities					
Investment in subsidiaries		–	–	(80)	(5,000)
Loans to subsidiaries		–	–	(14,828)	(27,215)
Increase in interests in associates and joint ventures		(726)	(5,343)	–	–
Proceeds from sale or redemption of financial assets measured at fair value through other comprehensive income		1,846	1,193	–	–
Purchase of financial assets measured at fair value through other comprehensive income		(1,680)	(1,307)	–	–
Proceeds from sale or redemption of debt securities measured at amortised cost		1,631	654	–	–
Purchase of debt securities measured at amortised cost		(2,176)	(1,855)	–	–
Proceeds from disposal of an associate		1,683	–	–	–
Proceeds from disposal of investment properties		3,886	–	–	–
Purchase of investment properties		(107)	(111)	–	–
Purchase of property, plant and equipment		(152)	(136)	(97)	(88)
Dividends received from subsidiaries		–	–	81	17
Net cash from/(used in) investing activities		4,205	(6,905)	(14,924)	(32,286)
Cash flows from financing activities					
Bank loans raised	31(c)	418	235	–	–
Repayment of bank loans	31(c)	(2,104)	–	–	–
Proceeds from issue of other debt securities	31(c)	31,844	34,006	–	–
Redemption of other debt securities issued	31(c)	(29,474)	(31,290)	–	–
Principal portion of lease payments	31(c)	(115)	–	(62)	–
Capital distribution to non-controlling interests		(326)	(123)	–	–
Dividends paid to non-controlling interests		(7)	(14)	–	–
Net cash from/(used in) financing activities		236	2,814	(62)	–
Net (decrease)/increase in cash and cash equivalents		(23,842)	11,235	(21,149)	11,448
Cash and cash equivalents at 1 January		382,717	377,555	367,089	361,711
Effect of foreign exchange rate changes		(2,455)	(6,073)	(2,458)	(6,070)
Cash and cash equivalents at 31 December	31(a)	356,420	382,717	343,482	367,089

The notes on pages 195 to 293 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 Government of the Hong Kong Special Administrative Region (HKSAR) 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 all applicable Hong Kong Financial Reporting Standards (HKFRSs), which is a collective term that includes all applicable individual Hong Kong Financial Reporting Standards, Hong Kong Accounting Standards (HKASs) 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 and 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 adoption 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 that the following assets and liabilities are measured at fair values as explained in the accounting policies set out below:

- 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 experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Judgements made by management in the application of HKFRSs that have significant effect on the financial statements and major sources of estimation uncertainty are disclosed in note 2.19.

2.3 Subsidiaries and non-controlling interests

A subsidiary is an entity controlled by the Group. The Group controls an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing whether the Group has power, only substantive rights (held by the Group and other parties) are considered.

An investment in a subsidiary is consolidated into the Group financial statements from the date that control commences until the date that control ceases.

Intra-group balances, transactions and cash flows and any unrealised profits and losses arising from intra-group transactions are eliminated in full in preparing the Group financial statements.

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 the Group 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).

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 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 for 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 and placements by the Deposit Protection Scheme Fund.

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, other placements by HKSAR Government funds and statutory bodies, placements by subsidiaries, 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 included 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 2.13.1.1).

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

2.13.1.1 From 1 January 2019

After the adoption of HKFRS 16 “Leases” (note 3.1), 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 variable lease payments and 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 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. 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.

2.13.1.2 Before 1 January 2019

Under HKAS 17 "Leases", leases where all the risks and rewards incidental to ownership of assets remained substantially with the lessors were accounted for as operating leases. Payments made under operating leases were charged to the income and expenditure account on a straight-line basis over the lease term.

2.13.2 As a lessor

The Group enters into contracts as a lessor with respect to some of its investment properties and premises. 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 greater 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) and non-listed enterprises, in return for a guarantee fee, insurance coverage on reverse mortgage loans and policy reverse mortgage loans provided to elderly people, and on lump-sum loans provided to owners of properties of subsidised housing schemes primarily for land premium settlement, 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 *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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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.

2.17.3 *Dividend income*

Dividend income from listed equity securities is recognised in the income and expenditure account when the share price is quoted ex-dividend. Dividend income from unlisted equity securities is recognised when the shareholder's right to receive payment is unconditionally established.

Dividends on equity securities measured at fair value through other comprehensive income that clearly represent a recovery of part of the cost of the investment are presented in other comprehensive income.

2.17.4 *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.

(a) Fair value of investment properties

The fair value of investment properties is revalued by independent professional valuers using property valuation techniques which involve certain assumptions of market conditions. Details of the fair value measurement of investment properties are set out in note 19.1.

(b) Fair value of financial instruments

The majority of valuation techniques employ only observable market data. However, certain financial instruments are valued on the basis of valuation techniques that feature one or more significant market inputs that are unobservable, where the measurement of fair value is more judgemental. Details of the fair value measurement of financial instruments are set out in note 38.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(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 monetary and financial systems of Hong Kong, 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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

3 CHANGES IN ACCOUNTING POLICIES

The HKICPA has issued certain new or revised HKFRSs that are effective for the current accounting period. None of them impact on the accounting policies of the Group except for the adoption of HKFRS 16 as set out below.

The Group has not applied any new standard or interpretation that is not yet effective for the current accounting period (note 39).

3.1 HKFRS 16 “Leases”

HKFRS 16 replaces HKAS 17. It introduces a single lessee accounting model and requires a lessee to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value.

The adoption of HKFRS 16 has primarily affected the Group’s accounting as a lessee. The Group elected to apply the modified retrospective approach where the comparative figures were not restated, with the cumulative effect of initial application recognised as an adjustment to equity as at 1 January 2019.

The right-of-use assets for leases that were accounted for as investment properties were measured at fair value at the date of initial application. Other right-of-use assets were measured at their carrying amounts as if HKFRS 16 had been applied since the commencement of the leases and discounted using the Group’s incremental borrowing rate as at 1 January 2019.

Lease liabilities were measured at the present value of the remaining lease payments, discounted using the Group’s incremental borrowing rate as at 1 January 2019.

Set out below are disclosures relating to the main impact of the adoption of HKFRS 16 on the Group.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

3.1.1 Impact of initial application of HKFRS 16

The effect of the adoption of HKFRS 16 on the balance sheet as at 1 January 2019 is as follows:

	Group		
	Balance at 1 January 2019	Adjustments on initial application of HKFRS 16	Balance at 1 January 2019, as adjusted
Other assets	99,945	(3)	99,942
Interests in associates and joint ventures	44,336	(10)	44,326
Investment properties	25,321	479	25,800
Property, plant and equipment	3,046	422	3,468
Total assets	4,242,029	888	4,242,917
Other liabilities ¹	187,255	818	188,073
Total liabilities	3,498,916	818	3,499,734
Accumulated surplus	742,852	72	742,924
Translation reserve	(2,531)	(4)	(2,535)
Non-controlling interests	2,142	2	2,144
Total equity	743,113	70	743,183

¹ The adjustment included the recognition of lease liabilities amounting to HK\$817 million.

	Fund		
	Balance at 1 January 2019	Adjustments on initial application of HKFRS 16	Balance at 1 January 2019, as adjusted
Property, plant and equipment	2,792	321	3,113
Total assets	4,054,899	321	4,055,220
Other liabilities ¹	176,247	338	176,585
Total liabilities	3,444,575	338	3,444,913
Accumulated surplus	609,673	(17)	609,656
Total equity	610,324	(17)	610,307

¹ The adjustment represented the recognition of lease liabilities amounting to HK\$338 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The table below shows the difference between operating lease commitments disclosed applying HKAS 17 as at 31 December 2018 (note 34(h)) and lease liabilities recognised under HKFRS 16 in the balance sheet as at 1 January 2019.

	Group	Fund
Operating lease commitments at 31 December 2018	230	124
Add: lease payments of extension options reasonably certain to be exercised	237	237
Add: adjustment for the inclusion of leasehold interests related to investment properties	2,022	–
Less: short-term leases not recognised as lease liabilities	(1)	(1)
Remaining lease payments under HKFRS 16 (without discounting)	2,488	360
Less: total future interest expenses	(1,671)	(22)
Lease liabilities recognised at 1 January 2019	817	338
Weighted average incremental borrowing rate applied to lease liabilities at 1 January 2019	2.4%	2.5%

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/(losses)

	Group		Fund	
	2019	2018	2019	2018
Interest income:				
– from derivative financial instruments	109	214	108	214
– from financial assets measured at fair value through income and expenditure account	63,146	60,460	62,956	59,995
– from financial assets measured at fair value through other comprehensive income	154	126	–	–
– from financial assets measured at amortised cost	6,170	4,624	4,747	3,496
	69,579	65,424	67,811	63,705
Dividend income:				
– from financial assets measured at fair value through income and expenditure account	16,445	16,299	13,758	14,203
– from financial assets measured at fair value through other comprehensive income	11	11	11	11
– from subsidiaries	–	–	81	17
	16,456	16,310	13,850	14,231
Income from investment properties:				
– rental income	1,328	1,510	–	–
– change in fair value on revaluation	46	408	–	–
	1,374	1,918	–	–
Net realised and unrealised gains/(losses):				
– on derivative financial instruments	(4,303)	(4,889)	(4,124)	(4,745)
– on financial assets and financial liabilities measured at fair value through income and expenditure account	195,623	(57,560)	162,237	(75,798)
– on gold	126	(8)	126	(8)
	191,446	(62,457)	158,239	(80,551)
Net exchange loss	(13,923)	(8,961)	(13,019)	(8,947)
TOTAL	264,932	12,234	226,881	(11,562)

Net realised and unrealised gains/(losses) included a loss of HK\$15 million (2018: HK\$324 million loss) on hedging instruments designated as fair value hedge and a gain of HK\$14 million (2018: HK\$325 million gain) 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	
	2019	2018
Interest expense on placements by Fiscal Reserves:		
– at a fixed rate determined annually ¹	29,393	43,815
– at market-based rates	1	1
– at a composite rate determined annually ²	24,354	16,386
Interest expense on placements by HKSAR Government funds and statutory bodies:		
– at a fixed rate determined annually ¹	9,013	13,769
– at market-based rates	32	48
TOTAL	62,793	74,019

¹ This rate was fixed at 2.9% per annum for 2019 (2018: 4.6%) – notes 24, 25 and 30.

² The composite rate was 8.7% per annum for 2019 (2018: 6.1%) – notes 24 and 30.

(c) Other interest expense

	Group		Fund	
	2019	2018	2019	2018
Interest expense on Exchange Fund Bills and Notes issued	19,109	12,745	19,109	12,745
Interest expense on placements by subsidiaries	–	–	466	184
Interest expense on derivative financial instruments	44	81	10	2
Interest expense on financial instruments measured at fair value through income and expenditure account	69	83	66	81
Interest expense on lease liabilities	19	–	8	–
Interest expense on other financial instruments	1,661	1,195	366	172
TOTAL	20,902	14,104	20,025	13,184

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(d) Operating expenses

	Group		Fund	
	2019	2018	2019	2018
Staff costs				
Salaries and other staff costs	1,747	1,593	1,347	1,243
Retirement benefit costs	142	132	118	111
Premises and equipment expenses				
Depreciation	360	228	247	178
Rental expenses under operating leases	–	122	–	66
Other premises expenses	87	79	71	66
General operating costs				
Maintenance of office and computer equipment	136	136	116	122
Financial information and communication services	76	67	63	57
External relations	33	33	31	31
Public education and publicity	50	39	17	18
Service fees for financial infrastructure	79	94	79	94
Professional and other services				
– Investment-related expenses	99	85	–	–
– Others	151	114	67	54
Training	11	11	9	9
Expenses relating to investment properties				
– Operating expenses	197	213	–	–
– Variable lease payment expenses	10	–	–	–
Others	69	60	23	25
Investment management and custodian fees				
Management and custodian fees	1,519	1,479	1,375	1,381
Transaction costs	182	189	180	185
Withholding tax	799	778	799	778
Others	141	101	131	95
TOTAL	5,888	5,553	4,673	4,513

The aggregate emoluments of senior staff members (Executive Directors and above) of the Group are as follows:

	Group	
	2019	2018
Fixed pay	83.0	83.2
Variable pay	25.5	23.1
Other benefits	11.8	10.5
	120.3	116.8

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 (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 (2018: 18). The higher figures in the table below reflected staff movements during the respective years.

HK\$	Group	
	2019	2018
500,001 to 1,000,000	–	1
1,000,001 to 1,500,000	1	–
1,500,001 to 2,000,000	–	1
3,000,001 to 3,500,000	–	1
3,500,001 to 4,000,000	1	–
4,000,001 to 4,500,000	1	1
4,500,001 to 5,000,000	2	3
5,000,001 to 5,500,000	2	3
5,500,001 to 6,000,000	3	2
6,000,001 to 6,500,000	2	1
6,500,001 to 7,000,000	–	3
7,000,001 to 7,500,000	2	–
7,500,001 to 8,000,000	1	1
8,500,001 to 9,000,000	1	–
9,500,001 to 10,000,000	1	2
10,000,001 to 10,500,000	1	–
10,500,001 to 11,000,000	1	1
	19	20

(e) Note and coin expenses

These represent reimbursements to the note-issuing banks in respect of note-issuing expenses and expenses incurred directly by the Fund in issuing government-issued currency notes and coins.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(f) Charge for/(Reversal of) impairment allowances

	Group		Fund	
	2019	2018	2019	2018
Charge for/(Reversal of) impairment allowances				
Placements with banks and other financial institutions (note 37.3.3(a))	(1)	1	(1)	1
Loan portfolio (note 37.3.3(c))	80	9	–	–
Provision on loan commitments (note 37.3.3(d))	13	5	–	–
TOTAL	92	15	(1)	1

5 REVENUE ACCOUNT FOR INSURANCE BUSINESS

	Group		
	2019		
	Non-life insurance	Life insurance	Total
Gross premiums written	542	1,631	2,173
Reinsurance premiums	(76)	–	(76)
Net premiums written	466	1,631	2,097
Movement in unearned premiums, net	(110)	–	(110)
Net commission and levy expenses	(138)	–	(138)
Net premiums earned	218	1,631	1,849
Net claims incurred, benefits paid and movement in policyholders' liabilities	(3)	(2,018)	(2,021)
Net premiums earned after provisions	215	(387)	(172)

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group		
	2018		
	Non-life insurance	Life insurance	Total
Gross premiums written	635	2,780	3,415
Reinsurance premiums	(69)	–	(69)
Net premiums written	566	2,780	3,346
Movement in unearned premiums, net	(188)	–	(188)
Net commission and levy expenses	(131)	(12)	(143)
Net premiums earned	247	2,768	3,015
Net claims incurred, benefits paid and movement in policyholders' liabilities	(3)	(3,318)	(3,321)
Net premiums earned after provisions	244	(550)	(306)

6 INCOME TAX

(a) Income tax charged in the income and expenditure account

	Group		Fund	
	2019	2018	2019	2018
Current tax				
Hong Kong profits tax:				
– current year	47	47	–	–
– under-provision in prior years	3	–	–	–
Taxation outside Hong Kong:				
– current year	158	79	–	–
– under-provision in prior years	83	8	–	–
Deferred tax				
Charge/(Credit) for current year	366	(50)	–	–
TOTAL	657	84	–	–

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 2019, it is calculated at 16.5% (2018: 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	
	2019	2018	2019	2018
Surplus/(Deficit) before taxation	178,303	(79,353)	139,053	(103,464)
Surplus subject to tax in Hong Kong and elsewhere	6,680	5,679	–	–
Tax calculated at domestic tax rates in the respective countries	1,151	1,022	–	–
Tax effect of:				
– non-deductible expenses	509	397	–	–
– non-taxable income	(1,478)	(1,375)	–	–
– tax losses not recognised	19	3	–	–
– utilisation of tax losses previously not recognised	(1)	(3)	–	–
– under-provision in prior years	86	8	–	–
– effect on deferred tax balances arising from change in tax rates	290	–	–	–
– others	81	32	–	–
Actual tax expense	657	84	–	–

(b) Tax payable

	Note	Group		Fund	
		2019	2018	2019	2018
Tax payable	30	561	231	–	–

(c) Deferred tax

	Note	Group		Fund	
		2019	2018	2019	2018
Deferred tax assets	16	(83)	(80)	–	–
Deferred tax liabilities	30	511	143	–	–
		428	63	–	–

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 tax depreciation	Tax losses	Others	Net deferred tax liabilities
At 1 January 2018	83	38	–	(3)	118
Charged/(Credited) to the income and expenditure account	33	(3)	(77)	(3)	(50)
Exchange differences	(5)	–	–	–	(5)
At 31 December 2018	111	35	(77)	(6)	63
At 1 January 2019	111	35	(77)	(6)	63
Charged/(Credited) to the income and expenditure account	371	1	(5)	(1)	366
Exchange differences	(1)	–	–	–	(1)
At 31 December 2019	481	36	(82)	(7)	428

There was no significant unprovided deferred tax as at 31 December 2019 and 2018.

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

	Note	Group – 2019					
		Total	Derivative financial instruments	Financial assets and 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	8	181,527	–	–	–	181,527	–
Placements with banks and other financial institutions	9	153,369	–	–	–	153,369	–
Financial assets measured at fair value through income and expenditure account	10	3,866,803	–	3,866,803	–	–	–
Financial assets measured at fair value through other comprehensive income	11	6,131	–	–	6,131	–	–
Derivative financial instruments	12(a)	1,289	1,289	–	–	–	–
Debt securities measured at amortised cost	13	12,034	–	–	–	12,034	–
Loan portfolio	14	9,310	–	–	–	9,310	–
Others		127,361	–	–	–	127,361	–
FINANCIAL ASSETS		4,357,824	1,289	3,866,803	6,131	483,601	–
Certificates of Indebtedness	21	516,062	–	–	–	–	516,062
Government-issued currency notes and coins in circulation	21	12,988	–	–	–	–	12,988
Balance of the banking system	22	67,688	–	–	–	–	67,688
Placements by banks and other financial institutions	23	35,000	–	–	–	–	35,000
Placements by Fiscal Reserves	24	1,137,490	–	–	–	–	1,137,490
Placements by HKSAR Government funds and statutory bodies	25	328,406	–	–	–	–	328,406
Exchange Fund Bills and Notes issued	27	1,152,327	–	1,152,327	–	–	–
Derivative financial instruments	12(a)	6,212	6,212	–	–	–	–
Bank loans	28	11,348	–	–	–	–	11,348
Other debt securities issued	29	40,370	–	147	–	–	40,223
Others		201,182	–	–	–	–	201,182
FINANCIAL LIABILITIES		3,509,073	6,212	1,152,474	–	–	2,350,387

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2018						
	Note	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	8	183,521	–	–	–	183,521	–
Placements with banks and other financial institutions	9	172,556	–	–	–	172,556	–
Financial assets measured at fair value through income and expenditure account	10	3,682,911	–	3,682,911	–	–	–
Financial assets measured at fair value through other comprehensive income	11	6,246	–	–	6,246	–	–
Derivative financial instruments	12(a)	4,432	4,432	–	–	–	–
Debt securities measured at amortised cost	13	11,547	–	–	–	11,547	–
Loan portfolio	14	7,498	–	–	–	7,498	–
Others		99,645	–	–	–	99,645	–
FINANCIAL ASSETS		4,168,356	4,432	3,682,911	6,246	474,767	–
Certificates of Indebtedness	21	485,666	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	21	12,639	–	–	–	–	12,639
Balance of the banking system	22	78,584	–	–	–	–	78,584
Placements by banks and other financial institutions	23	56,346	–	–	–	–	56,346
Placements by Fiscal Reserves	24	1,173,484	–	–	–	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	25	320,534	–	–	–	–	320,534
Exchange Fund Bills and Notes issued	27	1,129,610	–	1,129,610	–	–	–
Derivative financial instruments	12(a)	4,075	4,075	–	–	–	–
Bank loans	28	12,795	–	–	–	–	12,795
Other debt securities issued	29	37,928	–	144	–	–	37,784
Others		186,309	–	–	–	–	186,309
FINANCIAL LIABILITIES		3,497,970	4,075	1,129,754	–	–	2,364,141

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Note	Fund – 2019					
		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	8	180,741	–	–	–	180,741	–
Placements with banks and other financial institutions	9	125,201	–	–	–	125,201	–
Financial assets measured at fair value through income and expenditure account	10	3,586,245	–	3,586,245	–	–	–
Financial assets measured at fair value through other comprehensive income	11	1,210	–	–	1,210	–	–
Derivative financial instruments	12(a)	1,088	1,088	–	–	–	–
Others		123,787	–	–	–	123,787	–
FINANCIAL ASSETS		4,018,272	1,088	3,586,245	1,210	429,729	–
Certificates of Indebtedness	21	516,062	–	–	–	–	516,062
Government-issued currency notes and coins in circulation	21	12,988	–	–	–	–	12,988
Balance of the banking system	22	67,688	–	–	–	–	67,688
Placements by banks and other financial institutions	23	35,000	–	–	–	–	35,000
Placements by Fiscal Reserves	24	1,137,490	–	–	–	–	1,137,490
Placements by HKSAR Government funds and statutory bodies	25	328,406	–	–	–	–	328,406
Placements by subsidiaries	26	12,597	–	–	–	–	12,597
Exchange Fund Bills and Notes issued	27	1,152,327	–	1,152,327	–	–	–
Derivative financial instruments	12(a)	5,728	5,728	–	–	–	–
Others		188,900	–	–	–	–	188,900
FINANCIAL LIABILITIES		3,457,186	5,728	1,152,327	–	–	2,299,131

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Note	Total	Derivative financial instruments	Fund – 2018			
				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	8	182,573	–	–	–	182,573	–
Placements with banks and other financial institutions	9	143,097	–	–	–	143,097	–
Financial assets measured at fair value through income and expenditure account	10	3,452,969	–	3,452,969	–	–	–
Financial assets measured at fair value through other comprehensive income	11	1,144	–	–	1,144	–	–
Derivative financial instruments	12(a)	4,270	4,270	–	–	–	–
Others		97,604	–	–	–	97,604	–
FINANCIAL ASSETS		3,881,657	4,270	3,452,969	1,144	423,274	–
Certificates of Indebtedness	21	485,666	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	21	12,639	–	–	–	–	12,639
Balance of the banking system	22	78,584	–	–	–	–	78,584
Placements by banks and other financial institutions	23	56,346	–	–	–	–	56,346
Placements by Fiscal Reserves	24	1,173,484	–	–	–	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	25	320,534	–	–	–	–	320,534
Placements by subsidiaries	26	7,710	–	–	–	–	7,710
Exchange Fund Bills and Notes issued	27	1,129,610	–	1,129,610	–	–	–
Derivative financial instruments	12(a)	3,755	3,755	–	–	–	–
Others		176,138	–	–	–	–	176,138
FINANCIAL LIABILITIES		3,444,466	3,755	1,129,610	–	–	2,311,101

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	
	2019	2018	2019	2018
At amortised cost				
Balance with central banks	9,272	63,385	9,272	63,385
Balance with banks	172,255	120,136	171,469	119,188
TOTAL	181,527	183,521	180,741	182,573

9 PLACEMENTS WITH BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group		Fund	
	2019	2018	2019	2018
At amortised cost				
Placements in respect of reverse repurchase agreements:				
– with central banks	51,016	8,201	51,016	8,201
– with banks and other financial institutions	688	853	688	853
Other placements:				
– with central banks	–	14,876	–	14,876
– with banks	101,669	148,631	73,500	119,171
	153,373	172,561	125,204	143,101
Less: allowances for expected credit losses	(4)	(5)	(3)	(4)
TOTAL	153,369	172,556	125,201	143,097

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	
	2019	2018	2019	2018
At fair value				
Debt securities				
Treasury bills and commercial paper				
Listed outside Hong Kong	423	65,026	423	65,026
Unlisted	740,372	976,006	740,372	976,006
Certificates of deposit				
Unlisted	218,201	179,563	218,201	179,563
Other debt securities				
Listed in Hong Kong	7,098	9,422	7,088	9,422
Listed outside Hong Kong	1,767,909	1,411,885	1,767,909	1,411,885
Unlisted	122,562	198,379	122,562	183,285
Total debt securities	2,856,565	2,840,281	2,856,555	2,825,187
Equity securities				
Listed in Hong Kong	195,141	176,010	194,773	175,476
Listed outside Hong Kong	330,222	270,059	328,646	270,059
Unlisted	212,362	185,363	206,271	182,247
Total equity securities	737,725	631,432	729,690	627,782
Investment funds				
Unlisted	272,513	211,198	–	–
TOTAL	3,866,803	3,682,911	3,586,245	3,452,969

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	
	2019	2018	2019	2018
At fair value				
Debt securities				
Listed in Hong Kong	1,102	598	–	–
Listed outside Hong Kong	2,012	2,129	–	–
Unlisted	1,807	2,375	–	–
	4,921	5,102	–	–
Equity securities				
Unlisted	1,210	1,144	1,210	1,144
TOTAL	6,131	6,246	1,210	1,144

The Group's investment in unlisted equity securities as at 31 December 2019 represents a holding of 4,285 shares (2018: 4,285 shares) in the Bank for International Settlements. 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			
	2019		2018		2019		2018	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Derivatives categorised as held for trading								
Interest rate derivatives								
Interest rate swap contracts	446	65	358	183	441	41	347	129
Interest rate futures contracts	–	–	–	–	–	–	–	–
Swaption contracts	1	–	–	–	1	–	–	–
Equity derivatives								
Equity index futures contracts	65	141	255	145	65	141	255	145
Currency derivatives								
Forward foreign exchange contracts	529	5,554	3,575	3,260	529	5,390	3,573	3,258
Currency swap contracts	16	20	–	–	–	–	–	–
Bond derivatives								
Bond futures contracts	32	32	61	30	32	32	61	30
Commodity derivatives								
Commodity futures contracts	20	124	34	193	20	124	34	193
	1,109	5,936	4,283	3,811	1,088	5,728	4,270	3,755
Derivatives designated as hedging instruments in fair value hedges								
Interest rate derivatives								
Interest rate swap contracts	133	54	129	79	–	–	–	–
Currency derivatives								
Currency swap contracts	47	222	20	185	–	–	–	–
	180	276	149	264	–	–	–	–
TOTAL	1,289	6,212	4,432	4,075	1,088	5,728	4,270	3,755

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 securities due to movements in market interest rates.

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									
	2019					2018				
	1 year or less					1 year or less				
	3 months or less	but over 3 months	but over 1 year	Over 5 years		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	24,100	4	3,001	13,181	7,914	29,009	50	1,601	18,279	9,079
Interest rate futures contracts	585	–	585	–	–	–	–	–	–	–
Swaption contracts	1,044	896	148	–	–	–	–	–	–	–
Equity derivatives										
Equity index futures contracts	51,179	51,179	–	–	–	31,757	31,757	–	–	–
Currency derivatives										
Forward foreign exchange contracts	355,864	352,045	2,450	1,369	–	401,717	341,904	59,813	–	–
Currency swap contracts	1,842	–	139	1,529	174	–	–	–	–	–
Bond derivatives										
Bond futures contracts	33,786	33,786	–	–	–	37,747	37,747	–	–	–
Commodity derivatives										
Commodity futures contracts	20,643	13,673	6,970	–	–	18,445	12,227	6,218	–	–
	489,043	451,583	13,293	16,079	8,088	518,675	423,685	67,632	18,279	9,079
Derivatives designated as hedging instruments in fair value hedges										
Interest rate derivatives										
Interest rate swap contracts	18,041	2,444	7,770	5,898	1,929	14,247	2,180	3,811	6,916	1,340
Currency derivatives										
Currency swap contracts	14,174	985	6,920	5,212	1,057	8,455	1,769	3,915	1,330	1,441
	32,215	3,429	14,690	11,110	2,986	22,702	3,949	7,726	8,246	2,781
TOTAL	521,258	455,012	27,983	27,189	11,074	541,377	427,634	75,358	26,525	11,860

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									
	2019					2018				
	1 year or less		5 years or less		Over	1 year or less		5 years or less		Over
	3 months	but over	3 months	1 year		3 months	but over	3 months	1 year	5 years
	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	15,873	–	1,600	8,000	6,273	17,992	–	1,600	7,592	8,800
Interest rate futures contracts	585	–	585	–	–	–	–	–	–	–
Swaption contracts	1,044	896	148	–	–	–	–	–	–	–
Equity derivatives										
Equity index futures contracts	51,179	51,179	–	–	–	31,757	31,757	–	–	–
Currency derivatives										
Forward foreign exchange contracts	354,131	352,026	2,105	–	–	396,552	340,004	56,548	–	–
Bond derivatives										
Bond futures contracts	33,786	33,786	–	–	–	37,747	37,747	–	–	–
Commodity derivatives										
Commodity futures contracts	20,643	13,673	6,970	–	–	18,445	12,227	6,218	–	–
TOTAL	477,241	451,560	11,408	8,000	6,273	502,493	421,735	64,366	7,592	8,800

13 DEBT SECURITIES MEASURED AT AMORTISED COST

	Group		Fund	
	2019	2018	2019	2018
At amortised cost				
Debt securities				
Listed in Hong Kong	7,271	6,317	–	–
Listed outside Hong Kong	2,193	2,106	–	–
Unlisted	2,571	3,125	–	–
	12,035	11,548	–	–
Less: allowances for expected credit losses	(1)	(1)	–	–
TOTAL	12,034	11,547	–	–

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	
	2019	2018	2019	2018
At amortised cost				
Mortgage loans	4,910	6,179	–	–
Other loans	4,489	1,328	–	–
	9,399	7,507	–	–
Less: allowances for expected credit losses	(89)	(9)	–	–
TOTAL	9,310	7,498	–	–

15 GOLD

	Group and Fund	
	2019	2018
Gold, at fair value		
66,798 ounces (2018: 66,798 ounces)	793	670

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	
	2019	2018	2019	2018
Interest and dividends receivable	12,662	11,634	12,137	11,217
Unsettled sales and redemption of securities	103,350	80,944	102,348	80,456
Prepayments, receivables and other assets	10,886	6,584	8,872	5,434
Staff housing loans	237	217	237	217
Loan to the International Monetary Fund	239	314	239	314
Reinsurance assets	209	172	–	–
Deferred tax assets	83	80	–	–
TOTAL	127,666	99,945	123,833	97,638

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

17 INTERESTS IN SUBSIDIARIES

	Fund	
	2019	2018
Unlisted shares, at cost	7,392	7,312
Loans to subsidiaries	177,262	162,434
TOTAL	184,654	169,746

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 2019:

Name of company	Principal activities	Issued equity capital
The Hong Kong Mortgage Corporation Limited	Investment in mortgages and loans	HK\$7,000,000,000
HKMC Annuity Limited ²	Long term insurance	HK\$5,000,000,000
HKMC Insurance Limited ²	General insurance	HK\$3,000,000,000
HKMC Mortgage Management Limited ²	Loan purchase, origination and servicing	HK\$1,000,000
Hong Kong Note Printing Limited	Banknote printing	HK\$255,000,000
Hong Kong FMI Services Limited	Performance of financial market infrastructure related operations	HK\$167,000,000
Hong Kong Academy of Finance Limited	Financial leadership development	HK\$80,000,000
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
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 (2018: 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 the HKMC Annuity Limited for maintaining its margin of solvency above a certain level. Up to 31 December 2019, there had been no capital injection to The Hong Kong Mortgage Corporation Limited under this arrangement (2018: Nil).

The Fund has provided The Hong Kong Mortgage Corporation Limited with a revolving credit facility of HK\$30 billion (2018: HK\$30 billion) at prevailing market interest rates. As at 31 December 2019, there was no outstanding balance due from The Hong Kong Mortgage Corporation Limited under this facility (2018: Nil).

The Fund has committed to provide a funding support up to HK\$300 million (2018: Nil) to the Hong Kong Academy of Finance Limited for the purpose of financing the company's operations. The outstanding commitment as at 31 December 2019 was HK\$220 million (2018: Nil).

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 9% (2018: 8%) and 2% (2018: 2%) of the Group's total assets and total liabilities, respectively.

18 INTERESTS IN ASSOCIATES AND JOINT VENTURES

	Group	
	2019	2018
Associates¹		
Share of net assets	2,022	7,604
Joint ventures²		
Share of net assets	13,717	10,338
Due from joint ventures	30,789	26,394
	44,506	36,732
TOTAL	46,528	44,336

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 (2018: 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 two associates. One associate, incorporated in Hong Kong, provides interbank clearing services. Another associate, incorporated outside Hong Kong, holds investment funds. The Group holds equity interests in these associates ranging from 23% to 50%.

Aggregate information of the Group's associates, which are not individually material, is summarised below:

	Group	
	2019	2018
Share of profit for the year	118	454
Share of other comprehensive income/(loss)	56	(399)
Share of total comprehensive income	174	55
Aggregate carrying amount of interests in associates	2,022	7,604

The Group's share of outstanding investment commitments to associates is shown below:

	Group	
	2019	2018
Commitments to contribute funds	–	650

18.2 Interests in joint ventures

The Group holds investments in 22 joint ventures, which are all incorporated outside Hong Kong. The principal activities of these joint ventures are holding overseas investment properties. The Group holds equity interests in these joint ventures ranging from 35% to 99%. 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 2019, the aggregate interest in these joint ventures amounted to 1% of the Group's total assets.

Aggregate information of the Group's joint ventures, which are not individually material, is summarised below:

	Group	
	2019	2018
Share of profit for the year	2,970	1,759
Share of other comprehensive loss	(209)	(355)
Share of total comprehensive income	2,761	1,404
Aggregate carrying amount of interests in joint ventures	44,506	36,732

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	
	2019	2018
Commitments to contribute funds	3,705	3,561

19 INVESTMENT PROPERTIES

	Group		Fund	
	2019	2018	2019	2018
At fair value				
At 1 January	25,321	26,242	–	–
Adjustments on initial application of HKFRS 16 (note 3.1.1)	479	–	–	–
At 1 January, as adjusted	25,800	26,242	–	–
Additions	107	111	–	–
Disposals	(3,886)	–	–	–
Change in fair value on revaluation	46	408	–	–
Exchange differences	414	(1,440)	–	–
At 31 December	22,481	25,321	–	–

The carrying amount of the Group's investment properties is analysed as follows:

	Group		Fund	
	2019	2018	2019	2018
Held outside Hong Kong				
on freehold	8,872	12,742	–	–
on long-term lease (over 50 years)	13,609	12,579	–	–
TOTAL	22,481	25,321	–	–

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	
	2019	2018	2019	2018
Gross rental income	1,328	1,510	–	–
Direct expenses	(207)	(213)	–	–
Net rental income	1,121	1,297	–	–

The Group's total future minimum lease payments receivable under non-cancellable operating leases are as follows:

	Group		Fund	
	2019	2018	2019	2018
Within one year	1,117	1,178	–	–
After one year but not later than five years	2,883	3,779	–	–
After five years but not later than ten years	1,401	2,047	–	–
After ten years but not later than fifteen years	283	113	–	–
After fifteen years but not later than twenty years	1	3	–	–
TOTAL	5,685	7,120	–	–

As at 31 December 2019, investment properties with a fair value of HK\$21,976 million (2018: HK\$25,321 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 5.10% (2018: 4.25% to 5.30%), net initial yields which ranged from 3.97% to 8.03% (2018: 3.61% to 6.55%) and terminal capitalisation rates which ranged from 3.25% to 3.80% (2018: 3.25% to 4.40%). 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.

An analysis of the movement between opening and closing balances of Level 3 investment properties, measured at fair value using a valuation technique with significant unobservable inputs, is shown below:

	Group		Fund	
	2019	2018	2019	2018
At 1 January	25,321	26,242	–	–
Adjustments on initial application of HKFRS 16 (note 3.1.1)	479	–	–	–
At 1 January, as adjusted	25,800	26,242	–	–
Additions	107	111	–	–
Disposals	(3,886)	–	–	–
Change in fair value on revaluation recognised as "income from investment properties" in the income and expenditure account	46	408	–	–
Exchange differences recognised in other comprehensive income	414	(1,440)	–	–
At 31 December	22,481	25,321	–	–
Net (losses)/gains recognised in the income and expenditure account relating to investment properties held at the reporting date	(118)	408	–	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

20 PROPERTY, PLANT AND EQUIPMENT

	Group				
	Owned assets			Right-of-use assets	Total
	Premises	Plant and equipment	Computer software licences and system development costs	Premises	
Cost					
At 1 January 2018	3,852	1,393	421	–	5,666
Additions	–	98	38	–	136
Disposals	–	(13)	–	–	(13)
At 31 December 2018	3,852	1,478	459	–	5,789
At 1 January 2019	3,852	1,478	459	–	5,789
Adjustments on initial application of HKFRS 16 (note 3.1.1)	–	(9)	–	428	419
At 1 January 2019, as adjusted	3,852	1,469	459	428	6,208
Additions	2	104	46	2	154
Disposals	–	(9)	–	–	(9)
At 31 December 2019	3,854	1,564	505	430	6,353
Accumulated depreciation					
At 1 January 2018	1,249	934	345	–	2,528
Charge for the year	88	114	26	–	228
Written back on disposal	–	(13)	–	–	(13)
At 31 December 2018	1,337	1,035	371	–	2,743
At 1 January 2019	1,337	1,035	371	–	2,743
Adjustments on initial application of HKFRS 16 (note 3.1.1)	–	(3)	–	–	(3)
At 1 January 2019, as adjusted	1,337	1,032	371	–	2,740
Charge for the year	89	128	23	120	360
Written back on disposal	–	(8)	–	–	(8)
At 31 December 2019	1,426	1,152	394	120	3,092
Net book value					
At 31 December 2019	2,428	412	111	310	3,261
At 31 December 2018	2,515	443	88	–	3,046

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	Total
	Premises	Plant and equipment	Computer software licences and system development costs	Premises	
Cost					
At 1 January 2018	3,843	627	421	–	4,891
Additions	–	50	38	–	88
Disposals	–	(12)	–	–	(12)
At 31 December 2018	3,843	665	459	–	4,967
At 1 January 2019	3,843	665	459	–	4,967
Adjustments on initial application of HKFRS 16 (note 3.1.1)	–	–	–	321	321
At 1 January 2019, as adjusted	3,843	665	459	321	5,288
Additions	–	51	46	2	99
Disposals	–	(3)	–	–	(3)
At 31 December 2019	3,843	713	505	323	5,384
Accumulated depreciation					
At 1 January 2018	1,242	422	345	–	2,009
Charge for the year	88	64	26	–	178
Written back on disposal	–	(12)	–	–	(12)
At 31 December 2018	1,330	474	371	–	2,175
At 1 January 2019	1,330	474	371	–	2,175
Charge for the year	87	72	23	65	247
Written back on disposal	–	(3)	–	–	(3)
At 31 December 2019	1,417	543	394	65	2,419
Net book value					
At 31 December 2019	2,426	170	111	258	2,965
At 31 December 2018	2,513	191	88	–	2,792

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	
	2019	2018	2019	2018
In Hong Kong				
Leasehold land and the building situated thereon (leasehold between 10 and 50 years)	2,406	2,493	2,404	2,491
Outside Hong Kong				
Freehold land and the building situated thereon	22	22	22	22
TOTAL	2,428	2,515	2,426	2,513

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	
	2019	2018	2019	2018
Carrying amount	516,062	485,666	12,988	12,639
Reconciliation with face value:				
Hong Kong dollar face value	516,605	483,845	13,001	12,592
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\$66,231 million	US\$62,031 million	US\$1,667 million	US\$1,614 million
Market exchange rate for translation into Hong Kong dollars	US\$1=HK\$7.7918	US\$1=HK\$7.82935	US\$1=HK\$7.7918	US\$1=HK\$7.82935
Carrying amount	516,062	485,666	12,988	12,639

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	
	2019	2018
At amortised cost		
Placements by central banks	–	56,346
Placements by banks	35,000	–
TOTAL	35,000	56,346

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	
	2019	2018
Placements by Operating and Capital Reserves		
(i) with interest payable at a fixed rate determined annually		
General Revenue Account	566,451	635,424
Capital Works Reserve Fund	247,693	220,127
Civil Service Pension Reserve Fund	39,426	38,315
Disaster Relief Fund	38	23
Innovation and Technology Fund	25,265	26,383
Lotteries Fund	23,806	23,989
Capital Investment Fund	6,506	1,873
Loan Fund	3,771	2,815
	912,956	948,949
(ii) with interest payable at market-based rates		
General Revenue Account	4	5
	912,960	948,954
Placements by Future Fund with interest payable at a composite rate determined annually		
Land Fund	219,730	219,730
General Revenue Account	4,800	4,800
	224,530	224,530
TOTAL	1,137,490	1,173,484

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 2.9% per annum for 2019 (2018: 4.6%).

The Future Fund was established on 1 January 2016. Placements by Future Fund comprise an initial endowment from the balance of the Land Fund and periodic top-ups from the General Revenue Account 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 2019 was 8.7% (2018: 6.1%). 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 HONG KONG SPECIAL ADMINISTRATIVE REGION GOVERNMENT FUNDS AND STATUTORY BODIES

	Group and Fund	
	2019	2018
Placements with interest payable at a fixed rate¹ determined annually		
Bond Fund	138,613	150,419
Community Care Fund	15,301	17,821
Elite Athletes Development Fund	5,591	5,433
Employees Retraining Board	13,723	14,269
Environment and Conservation Fund	5,674	5,826
Hospital Authority	23,415	19,368
Housing Authority	33,806	32,853
Language Fund	6,200	6,025
Research Endowment Fund	49,092	29,250
Samaritan Fund	6,216	6,041
Trading Funds	8,201	7,969
West Kowloon Cultural District Authority	8,585	13,010
Other funds ²	12,980	8,220
	327,397	316,504
Placements with interest payable at market-based rates		
Deposit Protection Scheme Fund	1,009	4,030
TOTAL	328,406	320,534

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 2.9% per annum for 2019 (2018: 4.6%).

² This is a collective placement by 15 HKSAR Government funds (2018: 13 HKSAR Government funds).

26 PLACEMENTS BY SUBSIDIARIES

	Fund	
	2019	2018
Placements¹ by:		
HKMC Annuity Limited	9,539	7,710
HKMC Insurance Limited	3,058	–
TOTAL	12,597	7,710

¹ Placements by subsidiaries are unsecured, interest-bearing and have fixed repayment terms from 6 to 10 years.

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	
	2019	2018
At fair value		
Exchange Fund Bills and Notes issued		
Exchange Fund Bills	1,126,087	1,098,812
Exchange Fund Notes	26,838	32,394
	1,152,925	1,131,206
Exchange Fund Bills held	(598)	(1,596)
TOTAL	1,152,327	1,129,610

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 2-year, 3-year, 5-year, 7-year, 10-year and 15-year maturities.

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			
	2019		2018	
	Exchange Fund Bills	Exchange Fund Notes	Exchange Fund Bills	Exchange Fund Notes
Issued by Currency Board Operations segment				
Nominal value at 1 January	1,102,302	32,200	1,010,679	37,800
Issuance	3,317,384	4,800	3,299,942	4,800
Redemption	(3,289,592)	(10,400)	(3,208,319)	(10,400)
Nominal value at 31 December	1,130,094	26,600	1,102,302	32,200
Long positions held by Financial Stability and Other Activities segment				
Nominal value at 31 December	(600)	–	(1,600)	–
Total nominal value	1,129,494	26,600	1,100,702	32,200
Carrying amount, at fair value	1,125,489	26,838	1,097,216	32,394
Difference	4,005	(238)	3,486	(194)

The fair value changes of EFBN issued are attributable to changes in benchmark interest rates.

28 BANK LOANS

	Group		Fund	
	2019	2018	2019	2018
At amortised cost				
Bank loans repayable:				
After one year but not later than two years	3,747	4,360	–	–
After two years but not later than five years	–	5,717	–	–
After five years but not later than ten years	7,601	2,718	–	–
TOTAL	11,348	12,795	–	–

As at 31 December 2019, the banking facilities of the Group were secured by mortgage over the investment properties with a fair value of HK\$21,976 million (2018: HK\$25,321 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	
	2019	2018	2019	2018
Debt securities issued, carried at amortised cost	10,967	15,176	–	–
Debt securities issued, designated as hedged items under fair value hedge	29,256	22,608	–	–
Debt securities issued, measured at fair value	147	144	–	–
TOTAL	40,370	37,928	–	–

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	
	2019	2018	2019	2018
Total debt securities issued				
Nominal value at 1 January	38,146	35,398	–	–
Issuance	31,891	34,074	–	–
Redemption	(29,474)	(31,290)	–	–
Foreign currency translation differences	22	(36)	–	–
Nominal value at 31 December	40,585	38,146	–	–
Carrying amount	40,370	37,928	–	–
Difference	215	218	–	–
Debt securities issued, measured at fair value				
Nominal value	184	184	–	–
Carrying amount, at fair value	147	144	–	–
Difference	37	40	–	–

The fair value changes of debt securities issued measured at fair value are attributable to changes in benchmark interest rates.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

30 OTHER LIABILITIES

	Group		Fund	
	2019	2018	2019	2018
Unsettled purchases of securities	50,120	43,773	50,120	43,773
Housing Reserve ¹	63,572	82,376	63,572	82,376
Accrued interest on placements by Fiscal Reserves (Future Fund) ²	73,540	49,186	73,540	49,186
Accrued interest on placements by subsidiaries	–	–	285	23
Accrued charges and other liabilities	6,580	6,487	1,057	763
Other interest payable	599	447	166	126
Lease liabilities	717	–	278	–
Insurance liabilities	6,502	4,607	–	–
Provision for expected credit losses on loan commitments	18	5	–	–
Tax payable	561	231	–	–
Deferred tax liabilities	511	143	–	–
TOTAL	202,720	187,255	189,018	176,247

¹ 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 2019 was HK\$2,387 million (2018: HK\$3,623 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\$21,191 million was paid and brought back to the Fiscal Reserves (2018: Nil).

² 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.

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	
	2019	2018	2019	2018
Cash and money at call	181,527	183,521	180,741	182,573
Placements with banks and other financial institutions	137,355	153,083	125,204	138,403
Treasury bills and commercial paper	33,563	46,113	33,563	46,113
Certificates of deposit	3,975	–	3,974	–
TOTAL	356,420	382,717	343,482	367,089

(b) Reconciliation of cash and cash equivalents

	Note	Group		Fund	
		2019	2018	2019	2018
Amounts shown in the balance sheet					
Cash and money at call	8	181,527	183,521	180,741	182,573
Placements with banks and other financial institutions	9	153,373	172,561	125,204	143,101
Treasury bills and commercial paper	10	740,795	1,041,032	740,795	1,041,032
Certificates of deposit	10	218,201	179,563	218,201	179,563
		1,293,896	1,576,677	1,264,941	1,546,269
Less: Amounts with original maturity beyond 3 months		(937,476)	(1,193,960)	(921,459)	(1,179,180)
Cash and cash equivalents in the statement of cash flows		356,420	382,717	343,482	367,089

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(c) Reconciliation of liabilities arising from financing activities

The table below shows changes in the liabilities arising from financing activities, which are liabilities for which cash flows were, or future cash flows will be, classified in the statement of cash flows as cash flows from financing activities.

	Group			Fund
	Bank loans	Other debt securities issued	Lease liabilities	Lease liabilities
	(note 28)	(note 29)	(note 30)	(note 30)
At 1 January 2018	13,250	35,517	–	–
Changes from financing cash flows				
Bank loans raised	235	–	–	–
Proceeds from issue of other debt securities	–	34,006	–	–
Redemption of other debt securities issued	–	(31,290)	–	–
Non-cash changes				
Amortisation	16	62	–	–
Exchange differences	(706)	(36)	–	–
Fair value changes	–	(331)	–	–
At 31 December 2018	12,795	37,928	–	–
At 1 January 2019	12,795	37,928	–	–
Adjustments on initial application of HKFRS 16 (note 3.1.1)	–	–	817	338
At 1 January 2019, as adjusted	12,795	37,928	817	338
Changes from financing cash flows				
Bank loans raised	418	–	–	–
Repayment of bank loans	(2,104)	–	–	–
Proceeds from issue of other debt securities	–	31,844	–	–
Redemption of other debt securities issued	–	(29,474)	–	–
Principal portion of lease payments	–	–	(115)	(62)
Non-cash changes				
Increase in lease liabilities relating to new leases	–	–	2	2
Amortisation	31	67	18	8
Exchange differences	208	22	13	–
Fair value changes	–	(17)	–	–
Other changes				
Interest portion of lease payments	–	–	(18)	(8)
At 31 December 2019	11,348	40,370	717	278

The total cash outflows for leases of the Group and the Fund in 2019 were HK\$143 million and HK\$70 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	
	2019	2018	2019	2018	2019	2018	2019	2018
Income								
Interest and dividend income	41,203	38,467	42,446	41,245	2,386	2,022	86,035	81,734
Investment gains/(losses)	5,705	(2,444)	174,133	(64,341)	(941)	(2,715)	178,897	(69,500)
Other income	–	–	54	44	2,426	3,547	2,480	3,591
	46,908	36,023	216,633	(23,052)	3,871	2,854	267,412	15,825
Expenditure								
Interest expense	19,120	12,746	63,581	74,816	994	561	83,695	88,123
Other expenses	1,387	1,313	2,175	1,904	4,987	6,051	8,549	9,268
	20,507	14,059	65,756	76,720	5,981	6,612	92,244	97,391
Surplus/(Deficit) before share of profit of associates and joint ventures	26,401	21,964	150,877	(99,772)	(2,110)	(3,758)	175,168	(81,566)
Share of profit of associates and joint ventures, net of tax	–	–	3,055	2,174	33	39	3,088	2,213
Gain on disposal of an associate	–	–	47	–	–	–	47	–
Surplus/(Deficit) before taxation	26,401	21,964	153,979	(97,598)	(2,077)	(3,719)	178,303	(79,353)

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		Re-allocation		Total	
	Operations		Management		and		(notes (b) & (c))			
	(note (a))				Other Activities					
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Assets										
Backing Assets										
Investment in designated										
US dollar assets	1,844,330	1,796,208	–	–	–	–	–	–	1,844,330	1,796,208
Interest receivable on designated										
US dollar assets	4,329	3,489	–	–	–	–	–	–	4,329	3,489
Net accounts (payable)/receivable	–	(6,184)	–	–	–	–	–	6,184	–	–
Other investments	–	–	2,327,804	2,125,196	114,040	212,612	12,802	590	2,454,646	2,338,398
Other assets	–	–	46,911	26,662	6,356	5,546	74,620	71,726	127,887	103,934
TOTAL ASSETS	1,848,659	1,793,513	2,374,715	2,151,858	120,396	218,158	87,422	78,500	4,431,192	4,242,029
Liabilities										
Monetary Base										
Certificates of Indebtedness	516,062	485,666	–	–	–	–	–	–	516,062	485,666
Government-issued currency notes										
and coins in circulation	12,988	12,639	–	–	–	–	–	–	12,988	12,639
Balance of the banking system	67,688	78,584	–	–	–	–	–	–	67,688	78,584
Exchange Fund Bills and										
Notes issued	1,152,925	1,131,206	–	–	–	–	(598)	(1,596)	1,152,327	1,129,610
Interest payable on										
Exchange Fund Notes	122	125	–	–	–	–	–	–	122	125
Net accounts (receivable)/payable	(87,991)	(73,788)	–	–	–	–	88,020	73,912	29	124
Other debt securities issued	–	–	659	635	39,711	37,293	–	–	40,370	37,928
Placements by banks and										
other financial institutions	–	–	35,000	–	–	56,346	–	–	35,000	56,346
Bank loans	–	–	11,348	12,795	–	–	–	–	11,348	12,795
Placements by Fiscal Reserves	–	–	1,137,490	1,173,484	–	–	–	–	1,137,490	1,173,484
Placements by HKSAR Government										
funds and statutory bodies	–	–	327,397	316,504	1,009	4,030	–	–	328,406	320,534
Other liabilities	–	–	195,597	173,626	13,184	11,271	–	6,184	208,781	191,081
TOTAL LIABILITIES	1,661,794	1,634,432	1,707,491	1,677,044	53,904	108,940	87,422	78,500	3,510,611	3,498,916

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. The Backing Ratio stood at 111.21% as at 31 December 2019 (2018: 109.86%).

(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. This re-allocation adjustment adds back these items in order to reconcile the segmental information to the Group balance sheet.

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 2019, there were no "other liabilities" (2018: HK\$6,184 million) deducted from the Backing Assets.

The Monetary Base is also presented on a net basis. As at 31 December 2019, deductions from the Monetary Base comprising "other assets" of HK\$88,020 million (2018: HK\$73,912 million) consisted of three components:

- 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\$5 million (2018: HK\$10 million) and unrealised gains of HK\$431 million (2018: HK\$337 million) on these interest rate swaps are included in "net accounts (receivable)/payable" to reduce the Monetary Base.
- When Hong Kong dollar overnight advances secured on EFBN have been made to banks under the Discount Window Operations, the advances of HK\$13,400 million (2018: HK\$2,186 million) are included in "net accounts (receivable)/payable" to reduce the Monetary Base.
- EFBN issued on tender date but not yet settled of HK\$74,184 million (2018: HK\$71,379 million) are included in "net accounts (receivable)/payable" to reduce the Monetary Base.

(c) Exchange Fund Bills and Notes held

EFBN held by the Financial Stability and Other Activities segment are treated as redemption of EFBN issued in the Currency Board Operations segment.

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 and securities lending agreements and as collateral for securing general banking facilities. Securities lent do not include EFBN in issue. There are no financial assets pledged against contingent liabilities.

		Group		Fund	
	Note	2019	2018	2019	2018
Assets pledged					
Cash and money at call		92	132	92	132
Financial assets measured at fair value through income and expenditure account		4,842	4,281	4,842	4,281
Equity interests in associates		1,669	1,623	–	–
Investment properties	19	21,976	25,321	–	–
Secured liabilities					
Commodity futures contracts, at fair value		104	159	104	159
Equity index futures contracts, at fair value		76	–	76	–
Interest rate swap contracts, at fair value		–	6	–	6
Bank loans	28	11,348	12,795	–	–
Other debt securities issued		659	635	–	–

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	
	2019	2018	2019	2018
Contracted for	19	38	16	35
Authorised but not yet contracted for	784	259	732	208
TOTAL	803	297	748	243

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 2019, the Fund had an undertaking under the NAB to lend foreign currencies to the IMF up to HK\$3,672 million equivalent (2018: HK\$3,702 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\$239 million equivalent with a repayment term of five years (2018: HK\$314 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 (2018: 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 2019, there was no outstanding balance due from the HKDPB under this facility (2018: 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\$44,803 million equivalent (2018: HK\$45,019 million equivalent). The arrangement allows each organisation to enhance the liquidity of its foreign reserve portfolio with minimal additional risk. As at 31 December 2019, there was no outstanding transaction with any central bank under this arrangement (2018: 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 (2018: US\$240 billion). Hong Kong, through the HKMA, participates in the CMIM and has undertaken to commit up to US\$8.4 billion (2018: US\$8.4 billion) out of the Fund. Hong Kong has the right to request liquidity support up to US\$6.3 billion (2018: US\$6.3 billion) from the CMIM in case of emergency. Up to 31 December 2019, there had been no request to activate the CMIM (2018: Nil).

(f) Bilateral swap agreement

The People's Bank of China and the HKMA renewed a bilateral currency swap agreement in November 2017 for another three years, with a maximum size of RMB400 billion/HK\$470 billion. The arrangement helps facilitate the development of offshore renminbi business in Hong Kong. As at 31 December 2019, there was no currency swap activated under this arrangement (2018: RMB50 billion activated for standby purpose).

(g) Investment commitments

The Group's subsidiaries with principal activities of holding investments, including properties, had outstanding investment commitment of HK\$232,366 million equivalent as at 31 December 2019 (2018: HK\$209,159 million equivalent).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(h) Lease commitments

The total future minimum lease payments payable under non-cancellable operating leases of premises are as follows:

	Group		Fund	
	2019	2018	2019	2018
Within one year	–	124	–	69
After one year but not later than five years	–	106	–	55
TOTAL	–	230	–	124

From 1 January 2019 onwards, future lease payments are recognised as lease liabilities in the balance sheet in accordance with the accounting policies as set out in note 2.13.1.1 and the details regarding the Group's future lease payments are disclosed in note 37.5.2.

(i) Financial Dispute Resolution Centre Limited

The HKMA signed a Memorandum of Understanding together with the Financial Services and the Treasury Bureau and the Securities and Futures Commission on 21 December 2011 regarding the funding arrangement on the set-up and operating costs of the Financial Dispute Resolution Centre Limited (FDRCL). There was no contribution to FDRCL in 2019 (2018: Nil). The outstanding commitment of the Fund to contribute to FDRCL as at 31 December 2019 was HK\$10.5 million (2018: HK\$10.5 million).

35 CONTINGENT LIABILITIES

(a) Uncalled portion of investment in the Bank for International Settlements

As at 31 December 2019, the Fund had a contingent liability of up to 16.1 million SDRs or HK\$174 million equivalent (2018: 16.1 million SDRs or HK\$175 million equivalent), in respect of the uncalled portion of its 4,285 shares (2018: 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 2019, SDR 1 was valued at US\$1.38610 (2018: US\$1.39053).

(b) Financial guarantees

The Group has provided guarantees in respect of bank loans granted to joint ventures. The maximum liability as at 31 December 2019 was HK\$1,606 million equivalent (2018: HK\$1,583 million equivalent).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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.

In addition to the transactions and balances disclosed elsewhere in these financial statements, the Group, through The Hong Kong Mortgage Corporation Limited, purchased HK\$281 million of mortgage loans from the HKSAR Government in 2018. There were no such transactions during the year.

The Exchange Fund Advisory Committee (EFAC) through its Sub-Committees advises the Financial Secretary in his control of the Fund. Members of the EFAC and its Sub-Committees are appointed in a personal capacity by the Financial Secretary for the expertise and experience that they can bring to the Committees. Transactions with companies related to members of the EFAC and its Sub-Committees, if any, have been conducted as a normal part of the operation of the Group and on terms consistent with its ongoing operations.

37 FINANCIAL RISK MANAGEMENT

This note presents information about the nature and extent of risks to which the Group is exposed, in particular those arising from financial instruments, and the risk management framework of the Group. The principal financial risks the Group is exposed to are credit risk, market risk and liquidity risk.

37.1 Governance

The Financial Secretary is advised by the EFAC in his control of the Fund. The EFAC is established under section 3(1) of the Exchange Fund Ordinance, which requires the Financial Secretary to consult the Committee in his exercise of control of the Fund. Members of the EFAC are appointed in a personal capacity by the Financial Secretary under the delegated authority of the Chief Executive of the HKSAR for the expertise and experience that they can bring to the Committee. Such expertise and experience include knowledge of monetary, financial, investment management and economic affairs, as well as of accounting, management, business and legal matters.

The EFAC is assisted in its work by five Sub-Committees, which monitor specific areas of the HKMA's work and report and make recommendations to the Financial Secretary through the EFAC.

Among these Sub-Committees, the Investment Sub-Committee (ISC) monitors the HKMA's investment management activities 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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

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.

The Fund's target asset and currency mix are as follows:

	2019	2018
Asset type		
Bonds	73%	72%
Equities and related investments	27%	28%
	100%	100%
Currency		
US dollar and Hong Kong dollar	89%	89%
Others ¹	11%	11%
	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 HKMA down to the Executive Director level.

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	
		2019	2018	2019	2018
Risk in force – mortgage insurance	37.6	27,885	23,737	–	–
Risk in force – other guarantees and insurance	37.6	12,510	9,645	–	–
Loan commitments, guarantees and other credit related commitments		238,655	237,151	263,837	264,173
TOTAL		279,050	270,533	263,837	264,173

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 and financial guarantee contracts are subject to the impairment requirements, their expected credit losses were immaterial. 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	
	2019	2018	2019	2018
Credit rating¹				
AA– to AA+	81,530	40,114	78,325	33,533
A– to A+	66,493	102,364	44,549	81,330
Lower than A– or un-rated ²	5,350	30,083	2,330	28,238
Gross carrying amount	153,373	172,561	125,204	143,101
Less: allowances for expected credit losses	(4)	(5)	(3)	(4)
Carrying amount	153,369	172,556	125,201	143,097

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 2018	4	3
Increase in loss allowances recognised in the income and expenditure account	1	1
At 31 December 2018	5	4
At 1 January 2019	5	4
Decrease in loss allowances recognised in the income and expenditure account	(1)	(1)
At 31 December 2019	4	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 2019, approximately 70% (2018: 71%) 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	
	2019	2018	2019	2018
Credit rating¹				
Debt securities measured at fair value through income and expenditure account				
AAA	477,042	493,297	477,042	493,297
AA– to AA+	1,518,751	1,514,814	1,518,751	1,514,814
A– to A+	416,496	434,648	416,496	434,648
Lower than A– or un-rated ²	444,276	397,522	444,266	382,428
TOTAL	2,856,565	2,840,281	2,856,555	2,825,187
Debt securities measured at fair value through other comprehensive income				
AAA	–	30	–	–
AA– to AA+	2,798	3,069	–	–
A– to A+	2,123	1,993	–	–
Lower than A– or un-rated	–	10	–	–
TOTAL	4,921	5,102	–	–

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	
	2019	2018
Credit rating¹		
AAA	527	712
AA– to AA+	2,376	2,827
A– to A+	8,898	8,009
Lower than A– or un-rated	234	–
Gross carrying amount	12,035	11,548
Less: allowances for expected credit losses	(1)	(1)
Carrying amount	12,034	11,547

¹ This is the lowest of ratings designated by Moody's, Standard & Poor's and Fitch.

There were no movements in loss allowances for debt securities measured at amortised cost or fair value through other comprehensive income in 2019 and 2018.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(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.

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 as follows:

	Group – 2019			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating¹				
BBB– to BBB+	139	–	–	139
BB– to BB+	1,346	–	–	1,346
Lower than BB–	701	–	284	985
Gross carrying amount	2,186	–	284	2,470
Less: allowances for expected credit losses	(13)	–	(75)	(88)
	2,173	–	209	2,382
Loan portfolio with internal credit rating				
Gross carrying amount	6,917	8	4	6,929
Less: allowances for expected credit losses	–	–	(1)	(1)
	6,917	8	3	6,928
TOTAL	9,090	8	212	9,310

	Group – 2018			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating¹				
BB– to BB+	402	–	–	402
Lower than BB–	662	–	–	662
Gross carrying amount	1,064	–	–	1,064
Less: allowances for expected credit losses	(8)	–	–	(8)
	1,056	–	–	1,056
Loan portfolio with internal credit rating				
Gross carrying amount	6,436	1	6	6,443
Less: allowances for expected credit losses	–	–	(1)	(1)
	6,436	1	5	6,442
TOTAL	7,492	1	5	7,498

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 2018	–	–	–	–
Increase in loss allowances for net new lending	8	–	–	8
Increase in loss allowances for change in credit risk	–	–	1	1
At 31 December 2018	8	–	1	9
At 1 January 2019	8	–	1	9
Increase in loss allowances for net new lending	6	–	29	35
Increase in loss allowances for change in credit risk	–	–	45	45
Transfers into Stage 3	(1)	–	1	–
At 31 December 2019	13	–	76	89

As at 31 December 2019, there was no repossessed asset obtained (2018: Nil).

(d) Loan commitments

The Group's loan commitments are considered to have a low credit risk. The provision for expected credit losses are measured at amounts equal to 12-month expected credit losses. The movements in provision for expected credit losses during the year are as follows:

	Group
At 1 January 2018	–
Increase in provision for expected credit losses from new irrevocable commitments recognised in the income and expenditure account	5
At 31 December 2018	5
At 1 January 2019	5
Increase in provision for expected credit losses from new irrevocable commitments recognised in the income and expenditure account	13
At 31 December 2019	18

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	
	2019	2018	2019	2018
Governments and government agencies ¹	2,133,229	2,159,110	2,131,731	2,158,083
Supra-nationals	188,750	193,653	188,698	193,618
States, provinces and public-sector entities ²	179,150	205,539	208,942	234,968
Financial institutions	516,392	499,679	477,828	459,618
Others ³	607,999	537,149	721,275	633,055
TOTAL	3,625,520	3,595,130	3,728,474	3,679,342

¹ These included debt securities guaranteed by governments.

² These included debt securities guaranteed by states.

³ 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 cap for the market value of the Long-Term Growth Portfolio is set at the sum of one-third of the accumulated surplus of the Fund and the portion of the Future Fund and placements by subsidiaries of the Fund linked to 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 – 2019							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	181,185	–	–	–	–	–	181,185	342
Placements with banks and other financial institutions	131,945	20,103	1,302	–	–	–	153,350	19
Financial assets measured at fair value through income and expenditure account	435,687	508,518	542,917	912,318	268,084	178,848	2,846,372	1,020,431
Financial assets measured at fair value through other comprehensive income	–	2,786	1,126	706	303	–	4,921	1,210
Debt securities measured at amortised cost	–	1,575	1,224	4,122	5,113	–	12,034	–
Loan portfolio	6,729	1,228	1,310	11	32	–	9,310	–
Interest-bearing assets	755,546	534,210	547,879	917,157	273,532	178,848	3,207,172	
Liabilities								
Placements by banks and other financial institutions	30,000	5,000	–	–	–	–	35,000	–
Placements by Fiscal Reserves with interest payable at market-based rates ¹	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	1,009	–	–	–	–	–	1,009	–
Exchange Fund Bills and Notes issued	359,947	468,255	303,695	14,274	6,156	–	1,152,327	–
Bank loans	5,385	–	–	–	5,963	–	11,348	–
Other debt securities issued	3,069	12,156	12,028	7,589	2,796	2,732	40,370	–
Interest-bearing liabilities	399,414	485,411	315,723	21,863	14,915	2,732	1,240,058	
Net interest-bearing assets	356,132	48,799	232,156	895,294	258,617	176,116	1,967,114	
Interest rate derivatives (net position, notional amounts)	4,877	(20,312)	5,829	4,551	4,696	–	(359)	
Interest rate sensitivity gap	361,009	28,487	237,985	899,845	263,313	176,116	1,966,755	

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 2019, such placements amounted to HK\$1,464,883 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2018							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	126,105	–	–	–	–	–	126,105	57,416
Placements with banks and other financial institutions	148,368	22,724	1,445	–	–	–	172,537	19
Financial assets measured at fair value through income and expenditure account	552,484	376,868	756,510	757,946	226,620	145,599	2,816,027	866,884
Financial assets measured at fair value through other comprehensive income	852	3,240	497	503	–	–	5,092	1,154
Debt securities measured at amortised cost	–	1,310	1,336	4,318	4,583	–	11,547	–
Loan portfolio	6,575	380	530	11	1	1	7,498	–
Interest-bearing assets	834,384	404,522	760,318	762,778	231,204	145,600	3,138,806	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	56,346
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	4,030	–	–	–	–	–	4,030	–
Exchange Fund Bills and Notes issued	346,277	459,041	302,277	13,078	7,690	1,247	1,129,610	–
Bank loans	7,975	–	–	2,102	2,718	–	12,795	–
Other debt securities issued	5,631	11,495	8,082	8,469	2,739	1,512	37,928	–
Interest-bearing liabilities	363,918	470,536	310,359	23,649	13,147	2,759	1,184,368	
Net interest-bearing assets/(liabilities)	470,466	(66,014)	449,959	739,129	218,057	142,841	1,954,438	
Interest rate derivatives (net position, notional amounts)	7,427	(22,443)	5,411	(692)	8,840	1,200	(257)	
Interest rate sensitivity gap	477,893	(88,457)	455,370	738,437	226,897	144,041	1,954,181	

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 2018, such placements amounted to HK\$1,489,983 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2019							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments							
		3 months or less	1 year or less	5 years or less	10 years or less			
	1 month or less	but over 1 month	but over 3 months	but over 1 year	but over 5 years	Over 10 years	Total	
Assets								
Cash and money at call	180,600	–	–	–	–	–	180,600	141
Placements with banks and other financial institutions	124,422	779	–	–	–	–	125,201	–
Financial assets measured at fair value through income and expenditure account	435,687	508,518	542,917	912,318	268,084	178,848	2,846,372	739,873
Interest-bearing assets	740,709	509,297	542,917	912,318	268,084	178,848	3,152,173	
Liabilities								
Placements by banks and other financial institutions	30,000	5,000	–	–	–	–	35,000	–
Placements by Fiscal Reserves with interest payable at market-based rates ¹	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	1,009	–	–	–	–	–	1,009	–
Exchange Fund Bills and Notes issued	359,947	468,255	303,695	14,274	6,156	–	1,152,327	–
Interest-bearing liabilities	390,960	473,255	303,695	14,274	6,156	–	1,188,340	
Net interest-bearing assets	349,749	36,042	239,222	898,044	261,928	178,848	1,963,833	
Interest rate derivatives (net position, notional amounts)	19	(15,441)	1,600	8,000	5,822	–	–	
Interest rate sensitivity gap	349,768	20,601	240,822	906,044	267,750	178,848	1,963,833	

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 2019, such placements amounted to HK\$1,477,480 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2018							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	125,464	–	–	–	–	–	125,464	57,109
Placements with banks and other financial institutions	139,182	3,915	–	–	–	–	143,097	–
Financial assets measured at fair value through income and expenditure account	552,484	376,868	756,510	757,946	226,620	145,599	2,816,027	636,942
Interest-bearing assets	817,130	380,783	756,510	757,946	226,620	145,599	3,084,588	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	56,346
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	4,030	–	–	–	–	–	4,030	–
Exchange Fund Bills and Notes issued	346,277	459,041	302,277	13,078	7,690	1,247	1,129,610	–
Interest-bearing liabilities	350,312	459,041	302,277	13,078	7,690	1,247	1,133,645	
Net interest-bearing assets/(liabilities)	466,818	(78,258)	454,233	744,868	218,930	144,352	1,950,943	
Interest rate derivatives (net position, notional amounts)	–	(16,409)	1,600	6,009	7,600	1,200	–	
Interest rate sensitivity gap	466,818	(94,667)	455,833	750,877	226,530	145,552	1,950,943	

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 2018, such placements amounted to HK\$1,497,693 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			
	2019		2018	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	334.9	2,899.8	396.4	2,928.9
US dollar	3,615.4	585.9	3,404.6	548.5
	3,950.3	3,485.7	3,801.0	3,477.4
Others ¹	480.9	24.9	441.0	21.5
TOTAL	4,431.2	3,510.6	4,242.0	3,498.9

	Fund			
	2019		2018	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	303.7	2,872.2	361.5	2,898.6
US dollar	3,482.4	579.6	3,298.8	542.3
	3,786.1	3,451.8	3,660.3	3,440.9
Others ¹	420.6	5.5	394.6	3.7
TOTAL	4,206.7	3,457.3	4,054.9	3,444.6

¹ Other currencies included mainly euro, renminbi, pound sterling and Japanese yen.

(c) Equity price risk

As at 31 December 2019 and 2018, 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	
	2019	2018
Value-at-Risk		
At 31 December ¹	30,779	42,108
During the year		
Average	34,400	38,401
Maximum	44,918	45,188
Minimum	28,954	23,628

¹ The amount represented 0.8% of the Fund's investments which were subject to VaR measurement as at 31 December 2019 (2018: 1.1%).

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 – 2019						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	516,062	–	–	–	–	–	516,062
Government-issued currency notes and coins in circulation	12,988	–	–	–	–	–	12,988
Balance of the banking system	67,688	–	–	–	–	–	67,688
Placements by banks and other financial institutions	30,000	5,000	–	–	–	–	35,000
Placements by Fiscal Reserves	912,960	–	–	–	224,530	–	1,137,490
Placements by HKSAR Government funds and statutory bodies	167,994	17,500	9,640	92,052	41,220	–	328,406
Exchange Fund Bills and Notes issued	360,203	469,906	306,271	15,254	6,340	–	1,157,974
Bank loans	55	7	209	4,559	7,966	–	12,796
Other debt securities issued	(388)	4,630	17,015	14,522	3,375	3,997	43,151
Lease liabilities	10	23	91	259	45	1,993	2,421
Other liabilities (excluding lease liabilities)	108,193	17,865	278	41	73,540	–	199,917
Loan commitments, guarantees and other credit related commitments	238,655	–	–	–	–	–	238,655
TOTAL	2,414,420	514,931	333,504	126,687	357,016	5,990	3,752,548
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	311	11	(21)	132	31	2	466
– on gross basis							
Total outflows	176,683	122,903	8,322	7,112	1,303	–	316,323
Total inflows	(173,310)	(121,188)	(8,287)	(7,090)	(1,271)	–	(311,146)
TOTAL	3,684	1,726	14	154	63	2	5,643

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2018						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	485,666	–	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	12,639	–	–	–	–	–	12,639
Balance of the banking system	78,584	–	–	–	–	–	78,584
Placements by banks and other financial institutions	–	–	56,346	–	–	–	56,346
Placements by Fiscal Reserves	948,954	–	–	–	224,530	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	182,842	–	18,500	98,192	21,000	–	320,534
Exchange Fund Bills and Notes issued	346,500	460,468	304,674	14,233	8,093	1,221	1,135,189
Bank loans	64	21	236	10,808	2,974	–	14,103
Other debt securities issued	2,179	6,288	11,794	14,684	3,171	2,124	40,240
Other liabilities	112,429	23,902	49	268	49,214	–	185,862
Loan commitments, guarantees and other credit related commitments	235,786	44	1,164	157	–	–	237,151
TOTAL	2,405,643	490,723	392,763	138,342	308,982	3,345	3,739,798
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	374	(20)	3	79	69	10	515
– on gross basis							
Total outflows	117,858	46,141	63,752	1,512	1,503	–	230,766
Total inflows	(116,196)	(45,438)	(63,123)	(1,571)	(1,329)	–	(227,657)
TOTAL	2,036	683	632	20	243	10	3,624

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2019						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	516,062	–	–	–	–	–	516,062
Government-issued currency notes and coins in circulation	12,988	–	–	–	–	–	12,988
Balance of the banking system	67,688	–	–	–	–	–	67,688
Placements by banks and other financial institutions	30,000	5,000	–	–	–	–	35,000
Placements by Fiscal Reserves	912,960	–	–	–	224,530	–	1,137,490
Placements by HKSAR Government funds and statutory bodies	167,994	17,500	9,640	92,052	41,220	–	328,406
Placements by subsidiaries	365	–	–	4,900	7,332	–	12,597
Exchange Fund Bills and Notes issued	360,203	469,906	306,271	15,254	6,340	–	1,157,974
Lease liabilities	5	12	53	222	–	–	292
Other liabilities (excluding lease liabilities)	96,833	17,850	50	226	73,540	–	188,499
Loan commitments and other credit related commitments	263,837	–	–	–	–	–	263,837
TOTAL	2,428,935	510,268	316,014	112,654	352,962	–	3,720,833
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	297	6	(2)	25	14	–	340
– on gross basis							
Total outflows	175,665	121,820	1,006	–	–	–	298,491
Total inflows	(172,292)	(120,127)	(1,007)	–	–	–	(293,426)
TOTAL	3,670	1,699	(3)	25	14	–	5,405

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2018						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	485,666	–	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	12,639	–	–	–	–	–	12,639
Balance of the banking system	78,584	–	–	–	–	–	78,584
Placements by banks and other financial institutions	–	–	56,346	–	–	–	56,346
Placements by Fiscal Reserves	948,954	–	–	–	224,530	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	182,842	–	18,500	98,192	21,000	–	320,534
Placements by subsidiaries	–	–	160	–	7,550	–	7,710
Exchange Fund Bills and Notes issued	346,500	460,468	304,674	14,233	8,093	1,221	1,135,189
Other liabilities	102,884	23,885	42	15	49,186	–	176,012
Loan commitments and other credit related commitments	264,173	–	–	–	–	–	264,173
TOTAL	2,422,242	484,353	379,722	112,440	310,359	1,221	3,710,337
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	368	(2)	1	94	49	–	510
– on gross basis							
Total outflows	117,073	44,332	57,223	–	–	–	218,628
Total inflows	(115,414)	(43,636)	(56,549)	–	–	–	(215,599)
TOTAL	2,027	694	675	94	49	–	3,539

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 Government of the Hong Kong Special Administrative Region providing financial guarantee on loans advanced by participating authorized institutions to eligible SMEs and non-listed enterprises. 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 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 2019, the total risk-in-force was HK\$27.9 billion (2018: HK\$23.7 billion), of which HK\$23.1 billion (2018: HK\$19.7 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 and non-listed enterprises 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 2019, the total risk-in-force was HK\$12.5 billion (2018: HK\$9.6 billion), of which HK\$11.2 billion (2018: HK\$9.6 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 reinsurers are selected according to prudent criteria and their credit ratings are reviewed regularly. For financial guarantee cover provided to authorized institutions, 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 and the Senior Executive Director (Development) 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 Internal Audit 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. Internal Audit 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 – 2019			Total
	Level 1	Level 2	Level 3	
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	15,946	724,849	–	740,795
Certificates of deposit	–	218,201	–	218,201
Other debt securities	1,789,529	108,040	–	1,897,569
Equity securities	523,787	148,903	65,035	737,725
Investment funds	–	–	272,513	272,513
	2,329,262	1,199,993	337,548	3,866,803
Financial assets measured at fair value through other comprehensive income				
Debt securities	4,921	–	–	4,921
Equity securities	–	–	1,210	1,210
	4,921	–	1,210	6,131
Derivative financial instruments	117	1,172	–	1,289
TOTAL	2,334,300	1,201,165	338,758	3,874,223
Liabilities				
Exchange Fund Bills and Notes issued	–	1,152,327	–	1,152,327
Derivative financial instruments	297	5,915	–	6,212
Other debt securities issued, measured at fair value	–	147	–	147
TOTAL	297	1,158,389	–	1,158,686

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	260,241	780,791	–	1,041,032
Certificates of deposit	–	179,563	–	179,563
Other debt securities	1,516,298	88,294	15,094	1,619,686
Equity securities	446,069	137,168	48,195	631,432
Investment funds	–	–	211,198	211,198
	2,222,608	1,185,816	274,487	3,682,911
Financial assets measured at fair value through other comprehensive income				
Debt securities	5,102	–	–	5,102
Equity securities	–	–	1,144	1,144
	5,102	–	1,144	6,246
Derivative financial instruments	350	4,082	–	4,432
TOTAL	2,228,060	1,189,898	275,631	3,693,589
Liabilities				
Exchange Fund Bills and Notes issued	–	1,129,610	–	1,129,610
Derivative financial instruments	368	3,707	–	4,075
Other debt securities issued, measured at fair value	–	144	–	144
TOTAL	368	1,133,461	–	1,133,829

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2019			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	15,946	724,849	–	740,795
Certificates of deposit	–	218,201	–	218,201
Other debt securities	1,789,519	108,040	–	1,897,559
Equity securities	523,419	148,903	57,368	729,690
	2,328,884	1,199,993	57,368	3,586,245
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,210	1,210
Derivative financial instruments	117	971	–	1,088
TOTAL	2,329,001	1,200,964	58,578	3,588,543
Liabilities				
Exchange Fund Bills and Notes issued	–	1,152,327	–	1,152,327
Derivative financial instruments	297	5,431	–	5,728
TOTAL	297	1,157,758	–	1,158,055

	Fund – 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	260,241	780,791	–	1,041,032
Certificates of deposit	–	179,563	–	179,563
Other debt securities	1,516,298	88,294	–	1,604,592
Equity securities	445,535	137,168	45,079	627,782
	2,222,074	1,185,816	45,079	3,452,969
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,144	1,144
Derivative financial instruments	350	3,920	–	4,270
TOTAL	2,222,424	1,189,736	46,223	3,458,383
Liabilities				
Exchange Fund Bills and Notes issued	–	1,129,610	–	1,129,610
Derivative financial instruments	368	3,387	–	3,755
TOTAL	368	1,132,997	–	1,133,365

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 assets, measured at fair value using a valuation technique with significant unobservable inputs, is shown below:

	2019			
	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 2019	274,487	1,144	45,079	1,144
Net gains recognised in the income and expenditure account	17,996	–	4,241	–
Net gains recognised in other comprehensive income	–	66	–	66
Purchases	80,249	–	21,396	–
Sales	(34,155)	–	(12,377)	–
Exchange differences	(58)	–	–	–
Transfers into Level 3	1,299	–	1,299	–
Transfers out of Level 3	(2,270)	–	(2,270)	–
At 31 December 2019	337,548	1,210	57,368	1,210
Net gains recognised in the income and expenditure account relating to those assets held at the reporting date	18,132	–	3,857	–

	2018			
	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 2018	226,881	1,148	39,181	1,148
Net gains/(losses) recognised in the income and expenditure account	3,003	–	(245)	–
Net losses recognised in other comprehensive income	–	(4)	–	(4)
Purchases	77,325	–	21,949	–
Sales	(30,485)	–	(13,614)	–
Exchange differences	(45)	–	–	–
Transfers into Level 3	98	–	98	–
Transfers out of Level 3	(2,290)	–	(2,290)	–
At 31 December 2018	274,487	1,144	45,079	1,144
Net gains/(losses) recognised in the income and expenditure account relating to those assets held at the reporting date	3,121	–	(365)	–

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, using 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 swaps and foreign exchange contracts; and
- (c) commercial paper and debt securities are priced using discounted cash flow techniques with observable yield curves.

For investments in unlisted investment funds, certain unlisted equity securities and certain unlisted debt securities which are classified under Level 3, their fair values are estimated by making reference to valuation reports provided by 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	
	2019	2018
Earning multiples of similar companies	5.8 – 18.1	5.3 – 12.2
Liquidity discount	20%	20%

If the prices 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\$33,755 million (2018: decrease/increase in the Group's deficit for the year of HK\$27,449 million) and in other comprehensive income of HK\$121 million (2018: decrease/increase in other comprehensive loss of HK\$114 million).

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.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

38.2 Fair value of debt securities not measured at fair value on a recurring basis

The fair values of debt securities measured at amortised cost and other debt securities issued that were not measured at fair value are shown below:

Group – 2019					
		Carrying value	Fair value		
	Note		Level 1	Level 2	Total
Financial assets					
Debt securities measured at amortised cost	13	12,034	12,517	–	12,517
Financial liabilities					
Other debt securities issued	29	40,223	–	40,703	40,703

Group – 2018					
		Carrying value	Fair value		
	Note		Level 1	Level 2	Total
Financial assets					
Debt securities measured at amortised cost	13	11,547	11,530	–	11,530
Financial liabilities					
Other debt securities issued	29	37,784	–	37,224	37,224

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 2019 and 2018.

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 2019

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 2019 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 2021

The Group is in the process of assessing the possible impact on its financial statements in the period of initial adoption 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 2021 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. The International Accounting Standards Board decided in March 2020 that the effective date of the standard would be deferred to accounting periods beginning on or after 1 January 2023. It is expected that the HKICPA will follow the Board’s decision.

40 NON-ADJUSTING EVENT AFTER THE REPORTING PERIOD

The number of confirmed cases of novel coronavirus (Covid-19) infection increased rapidly in a growing number of countries in early 2020 and the status of its outbreak was declared as a pandemic by the World Health Organization on 11 March 2020. These developments have caused disruptions to businesses and economic activities and plunges in global stock markets. The Group considers the outbreak to be a non-adjusting event after the reporting period. As the situation is fluid and rapidly evolving, the Group does not consider it practicable to provide a quantitative estimate of the potential impact of this outbreak on its financial position but has stepped up monitoring and review of its portfolio in light of evolving developments.

41 APPROVAL OF FINANCIAL STATEMENTS

The financial statements were approved by the Financial Secretary on the advice of the Exchange Fund Advisory Committee on 3 April 2020.

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Annex Authorized Institutions and Local Representative Offices

at 31 December 2019

LICENSED BANKS

Incorporated in Hong Kong

Airstar Bank Limited [#] (formerly known as Insight Fintech HK Limited)	DAH SING BANK, LIMITED	Ping An OneConnect Bank (Hong Kong) Limited [#] (formerly known as Ping An OneConnect Company Limited)
Ant Bank (Hong Kong) Limited [#] (formerly known as Ant SME Services (Hong Kong) Limited)	DBS BANK (HONG KONG) LIMITED	PUBLIC BANK (HONG KONG) LIMITED
Bank of China (Hong Kong) Limited	FUBON BANK (HONG KONG) LIMITED	SC Digital Solutions Limited [#]
BANK OF COMMUNICATIONS (HONG KONG) LIMITED	Fusion Bank Limited [#] (formerly known as Infinium Limited)	Shanghai Commercial Bank Limited
Bank of East Asia, Limited (The)	Hang Seng Bank, Limited	Standard Chartered Bank (Hong Kong) Limited
China CITIC Bank International Limited	Hongkong and Shanghai Banking Corporation Limited (The)	Tai Sang Bank Limited
China Construction Bank (Asia) Corporation Limited	Industrial and Commercial Bank of China (Asia) Limited	Tai Yau Bank, Limited
Chiyu Banking Corporation Limited	Livi VB Limited [#]	Welab Bank Limited [#] (formerly known as Welab Digital Limited)
Chong Hing Bank Limited	Morgan Stanley Bank Asia Limited [#] (formerly known as Morgan Stanley Asia International Limited)	ZA Bank Limited [#] (formerly known as ZhongAn Virtual Finance Limited)
CITIBANK (HONG KONG) LIMITED	Nanyang Commercial Bank, Limited	
CMB WING LUNG BANK LIMITED	OCBC Wing Hang Bank Limited	

Incorporated outside Hong Kong

ABN AMRO Bank N.V.	Bank of Communications Co., Ltd.	CATHAY UNITED BANK COMPANY, LIMITED
AGRICULTURAL BANK OF CHINA LIMITED	Bank of India	Chang Hwa Commercial Bank, Ltd.
Allahabad Bank	Bank of Montreal	Chiba Bank, Ltd. (The)
Australia and New Zealand Banking Group Limited	BANK OF NEW YORK MELLON (THE)	China Construction Bank Corporation
Axis Bank Limited	Bank of Nova Scotia (The)	China Development Bank
Banca Monte dei Paschi di Siena S.p.A.	BANK OF SINGAPORE LIMITED	China Everbright Bank Co., Ltd.
Banco Bilbao Vizcaya Argentaria S.A.	BANK OF TAIWAN	China Merchants Bank Co., Ltd.
Banco Santander, S.A.	BANK SINOPAC	CHINA MINSHENG BANKING CORP., LTD.
Bangkok Bank Public Company Limited	Barclays Bank PLC	China Zheshang Bank Co., Ltd.
Bank J. Safra Sarasin AG	BDO UNIBANK, INC.	Chugoku Bank, Ltd. (The)
also known as:	also known as:	CIMB Bank Berhad
Banque J. Safra Sarasin SA	BDO	Citibank, N.A.
Banca J. Safra Sarasin SA	BDO Unibank	Commerzbank AG
Bank J. Safra Sarasin Ltd	Banco De Oro	Commonwealth Bank of Australia
Bank Julius Baer & Co. Ltd.	Banco De Oro Unibank	Coöperatieve Rabobank U.A.
Bank of America, National Association	BDO Banco De Oro	Coutts & Co AG
Bank of Baroda	BNP PARIBAS	also known as:
Bank of China Limited	BNP PARIBAS SECURITIES SERVICES	Coutts & Co SA
	CA Indosuez (Switzerland) SA	Coutts & Co Ltd
	Canadian Imperial Bank of Commerce	CREDIT AGRICOLE CORPORATE AND INVESTMENT BANK
	CANARA BANK	
	CATHAY BANK	

[#] Addition in 2019

Annex Authorized Institutions and Local Representative Offices at 31 December 2019 (continued)

CREDIT INDUSTRIEL ET COMMERCIAL	JPMorgan Chase Bank, National Association	Royal Bank of Canada
Credit Suisse AG	KBC Bank N.V.	Shanghai Commercial & Savings Bank, Ltd. (The)
CTBC Bank Co., Ltd	KEB Hana Bank	Shanghai Pudong Development Bank Co., Ltd.
DBS BANK LTD.	Kookmin Bank	Shiga Bank, Ltd. (The)
Deutsche Bank Aktiengesellschaft	Land Bank of Taiwan Co., Ltd.	Shinhan Bank
DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main	LGT Bank AG	Shizuoka Bank, Ltd. (The)
E.Sun Commercial Bank, Ltd.	also known as:	Skandinaviska Enskilda Banken AB
EAST WEST BANK	LGT Bank Ltd.	Societe Generale
EFG Bank AG	LGT Bank SA	Standard Chartered Bank
also known as:	MACQUARIE BANK LIMITED	State Bank of India
EFG Bank SA	Malayan Banking Berhad	State Street Bank and Trust Company
EFG Bank Ltd	Mashreq Bank — Public Shareholding Company	Sumitomo Mitsui Banking Corporation
ERSTE GROUP BANK AG	also known as Mashreqbank psc	Sumitomo Mitsui Trust Bank, Limited
FAR EASTERN INTERNATIONAL BANK	MEGA INTERNATIONAL COMMERCIAL BANK CO., LTD.	Svenska Handelsbanken AB (publ)
First Abu Dhabi Bank PJSC	MELLI BANK PLC	TAIPEI FUBON COMMERCIAL BANK CO., LTD.
First Commercial Bank, Ltd.	Mitsubishi UFJ Trust and Banking Corporation	TAISHIN INTERNATIONAL BANK CO., LTD
Hachijuni Bank, Ltd. (The)	Mizuho Bank, Ltd.	Taiwan Business Bank, Ltd.
HDFC BANK LIMITED	MUFG Bank, Ltd.	Taiwan Cooperative Bank, Ltd.
HONG LEONG BANK BERHAD	National Australia Bank Limited	Taiwan Shin Kong Commercial Bank Co., Ltd.
HSBC Bank plc	National Bank of Pakistan	Toronto-Dominion Bank
HSBC Bank USA, National Association	NATIXIS	UBS AG
HSBC Private Bank (Suisse) SA	NatWest Markets N.V.	UCO Bank
Hua Nan Commercial Bank, Ltd.	NATWEST MARKETS PLC	UniCredit Bank AG
HUA XIA BANK CO., Limited [#]	O-Bank Co., Ltd.	UNION BANCAIRE PRIVÉE, UBP SA
ICBC STANDARD BANK PLC	Oversea-Chinese Banking Corporation Limited	Union Bank of India
ICICI BANK LIMITED	Philippine National Bank	United Overseas Bank Ltd.
Indian Overseas Bank	Pictet & Cie (Europe) S.A.	Wells Fargo Bank, National Association
Industrial and Commercial Bank of China Limited	Ping An Bank Co., Ltd. [#]	Westpac Banking Corporation
Industrial Bank Co., Ltd.	PT. Bank Negara Indonesia (Persero) Tbk.	Woori Bank
Industrial Bank of Korea	Punjab National Bank	Yuanta Commercial Bank Co., Ltd
ING Bank N.V.	Qatar National Bank (Q.P.S.C.) [#]	
INTESA SANPAOLO SPA		

[#] Addition in 2019

Annex Authorized Institutions and Local Representative Offices at 31 December 2019 (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

Nippon Wealth Limited

ORIX ASIA LIMITED

SCOTIABANK (HONG KONG) LIMITED

Upgraded to a Licensed Bank

Morgan Stanley Asia International
Limited

Incorporated outside Hong Kong

EUROCLEAR BANK

PT. BANK MANDIRI (PERSERO) Tbk

RBC Investor Services Bank S.A.

Siam Commercial Bank Public
Company Limited (The)

Thanakharn Kasikorn Thai Chamkat
(Mahachon)
also known as KASIKORNBANK PUBLIC
COMPANY LIMITED

Annex Authorized Institutions and Local Representative Offices at 31 December 2019 (continued)

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

Gunma Finance (Hong Kong) Limited

KEB Hana Global Finance Limited

KEXIM ASIA LIMITED

PUBLIC FINANCE LIMITED

Vietnam Finance Company Limited

WOORI GLOBAL MARKETS ASIA LIMITED

Deletion in 2019

Habib Finance International Limited

HENDERSON INTERNATIONAL FINANCE
LIMITED

SHINHAN ASIA LIMITED

Incorporated outside Hong Kong

NIL

Annex Authorized Institutions and Local Representative Offices at 31 December 2019 (continued)

LOCAL REPRESENTATIVE OFFICES

ABC BANKING CORPORATION LTD	Iyo Bank, Ltd. (The)	VP Bank Ltd
Ashikaga Bank, Ltd. (The)	JIH SUN INTERNATIONAL Bank, Ltd.	also known as:
BANCO BPM SOCIETA' PER AZIONI	Korea Development Bank (The)	VP Bank AG
Banco Bradesco S.A. [#]	Manulife Bank of Canada	VP Bank SA
Banco Security	Metropolitan Bank and Trust Company	Yamaguchi Bank, Ltd. (The)
BANK OF BEIJING CO., LTD.	Nanto Bank, Ltd. (The)	Yamanashi Chuo Bank, Ltd.
BANK OF DONGGUAN CO., LTD.	National Bank of Canada	
Bank of Fukuoka, Ltd. (The)	Nishi-Nippon City Bank, Ltd. (The)	
Bank of Kyoto, Ltd. (The)	Norinchukin Bank (The)	
Bank of Yokohama, Ltd. (The)	Oita Bank, Ltd. (The)	
Banque Cantonale de Genève	P.T. Bank Central Asia	Deletion in 2019
Banque Transatlantique S.A.	P.T. Bank Rakyat Indonesia (Persero)	Hamburg Commercial Bank AG
BENDURA BANK AG	Resona Bank, Limited	(formerly known as HSH Nordbank AG)
CAIXABANK S.A.	Shinkin Central Bank	HUA XIA BANK CO., Limited
CHINA BOHAI BANK CO., LTD.	Shoko Chukin Bank, Ltd. (The)	Ping An Bank Co., Ltd.
CHINA GUANGFA BANK CO., LTD.	Silicon Valley Bank	Rothschild & Co Bank AG
CLEARSTREAM BANKING S.A.	Swissquote Bank SA	Schroder & Co Bank AG
Doha Bank Q.P.S.C.	also known as:	also known as:
(formerly known as Doha Bank Q.S.C.)	Swissquote Bank AG	Schroder & Co Banque SA
Dukascopy Bank SA	Swissquote Bank Inc.	Schroder & Co Banca SA
Export-Import Bank of China (The)	Swissquote Bank Ltd	Schroder & Co Bank Ltd
Habib Bank A.G. Zurich	Union Bank of Taiwan	Schroder & Co Banco SA
	Unione di Banche Italiane S.p.A.	Standard Bank of South Africa Limited (The)

[#] Addition in 2019

Table A Major Economic Indicators

	2015	2016	2017	2018	2019
I. Gross Domestic Product					
Real GDP growth (%)	2.4	2.2	3.8	2.9	(1.2)^(a)
Nominal GDP growth (%)	6.1	3.8	6.8	6.6	1.2^(a)
Real growth of major expenditure components of GDP (%)					
– Private consumption expenditure	4.8	2.0	5.5	5.3	(1.1)^(a)
– Government consumption expenditure	3.4	3.4	2.8	4.3	5.1^(a)
– Gross domestic fixed capital formation of which	(3.2)	(0.1)	3.1	1.7	(12.3)^(a)
– Building and construction	2.2	5.9	(0.5)	(0.5)	(6.1)^(a)
– Machinery, equipment and intellectual property products	(7.7)	(6.4)	3.8	8.8	(20.0)^(a)
– Exports ^(b)	(1.4)	0.7	5.8	3.7	(5.6)^(a)
– Imports ^(b)	(1.8)	0.9	6.6	4.5	(6.8)^(a)
GDP at current market prices (US\$ billion)	309.4	320.8	341.2	361.7	366.0^(a)
Per capita GDP at current market prices (US\$)	42,432	43,732	46,162	48,543	48,757^(a)
II. External Trade (HK\$ billion) ^(b)					
Trade in goods ^(c)					
– Exports of goods	3,889.2	3,892.9	4,212.8	4,453.4	4,291.3^(a)
– Imports of goods	4,066.5	4,022.6	4,391.3	4,706.3	4,415.3^(a)
– Balance of trade in goods	(177.3)	(129.7)	(178.5)	(253.0)	(124.0)^(a)
Trade in services					
– Exports of services	808.9	764.7	811.3	886.9	793.9^(a)
– Imports of services	574.3	578.1	605.9	639.9	619.1^(a)
– Balance of trade in services	234.6	186.6	205.4	246.9	174.8^(a)
III. Fiscal Expenditure and Revenue (HK\$ million, fiscal year)					
Total government expenditure ^(d)	435,633	462,052	470,863	531,825	612,946^(a)
Total government revenue ^(e)	450,007	573,125	619,836	599,774	575,128^(a)
Consolidated surplus/(deficit)	14,374	111,073	148,973	67,949	(37,818)^(a)
Reserve balance as at end of fiscal year ^(f)	842,888	953,960	1,102,934	1,170,882	1,133,065^(a)
IV. Prices (annual change, %)					
Consumer Price Index (A)	4.0	2.8	1.5	2.7	3.3
Composite Consumer Price Index	3.0	2.4	1.5	2.4	2.9
Trade Unit Value Indices					
– Domestic exports	(3.0)	(1.4)	2.0	1.8	1.1
– Re-exports	0.1	(1.7)	1.8	2.4	1.1
– Imports	(0.4)	(1.7)	1.9	2.6	1.3
Property Price Indices					
– Residential flats	15.5	(3.6)	16.7	13.0	1.5^(a)
– Office premises	6.1	(4.9)	14.1	13.9	(2.1)^(a)
– Retail premises	7.3	(5.8)	6.0	5.9	(7.1)^(a)
– Flatted factory premises	8.4	(4.3)	12.3	14.1	(0.2)^(a)

Table A Major Economic Indicators (continued)

	2015	2016	2017	2018	2019
V. Labour					
Labour force (annual change, %)	0.8	0.4	0.7	0.8	(0.3)
Employment (annual change, %)	0.8	0.4	1.0	1.1	(0.4)
Unemployment rate (annual average, %)	3.3	3.4	3.1	2.8	2.9
Underemployment rate (annual average, %)	1.4	1.4	1.2	1.1	1.1
Employment ('000)	3,774	3,787	3,823	3,867	3,850
VI. Money Supply (HK\$ billion)					
HK\$ money supply					
– M1	1,253.4	1,428.8	1,598.0	1,555.7	1,533.1
– M2 ^(g)	5,765.5	6,280.2	7,010.3	7,262.5	7,438.8
– M3 ^(g)	5,778.8	6,292.7	7,024.5	7,284.3	7,454.7
Total money supply					
– M1	1,971.1	2,214.0	2,431.5	2,421.6	2,484.7
– M2	11,618.4	12,508.1	13,755.3	14,348.1	14,745.9
– M3	11,655.0	12,551.3	13,803.8	14,403.7	14,786.4
VII. Interest Rates (end of period, %)					
Three-month interbank rate ^(h)	0.39	1.02	1.31	2.33	2.43
Savings deposit	0.01	0.01	0.01	0.13	0.00
One-month time deposit	0.01	0.01	0.01	0.14	0.12
Banks' 'Best lending rate'	5.00	5.00	5.00	5.13	5.00
Banks' 'Composite rate' ⁽ⁱ⁾	0.26	0.31	0.38	0.89	1.09
VIII. Exchange Rates (end of period)					
USD/HKD	7.751	7.754	7.814	7.834	7.787
Trade-weighted Effective Exchange Rate Index (Jan 2010=100)	104.9	108.8	100.9	104.8	105.9
IX. Foreign Currency Reserve Assets (US\$ billion) ^(j)	358.8	386.3	431.4	424.6	441.4
X. Stock Market (end of period figures)					
Hang Seng Index	21,914	22,001	29,919	25,846	28,190
Average price/earnings ratio	9.9	10.5	16.3	10.5	13.3
Market capitalisation (HK\$ billion)	24,425.6	24,450.4	33,718.0	29,723.2	38,058.3

(a) The estimates are preliminary.

(b) Compiled based on the change of ownership principle in recording goods sent abroad for processing and merchandising.

(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 figure in 2019 is not strictly comparable with those of previous years.

(j) Excludes unsettled forward transactions but includes gold.

Table B Performance Ratios of the Banking Sector^(a)

	All Authorized Institutions					Retail Banks				
	2015 %	2016 %	2017 %	2018 %	2019 %	2015 %	2016 %	2017 %	2018 %	2019 %
Asset Quality^(b)										
As % of total credit exposures ^(c)										
Total outstanding provisions/impairment allowances	0.44	0.49	0.48	0.49	0.49	0.28	0.29	0.26	0.34	0.36
Classified ^(d) exposures:										
– Gross	0.49	0.58	0.48	0.39	0.39	0.43	0.45	0.37	0.34	0.29
– Net of specific provisions/individual impairment allowances	0.31	0.35	0.26	0.19	0.19	0.30	0.31	0.25	0.20	0.15
– Net of all provisions/impairment allowances	0.05	0.09	0.00	(0.10)	(0.10)	0.15	0.17	0.11	(0.00)	(0.07)
As % of total loans ^(e)										
Total outstanding provisions/impairment allowances	0.66	0.76	0.71	0.70	0.70	0.46	0.51	0.45	0.52	0.56
Classified ^(d) loans:										
– Gross	0.73	0.85	0.68	0.55	0.57	0.69	0.72	0.56	0.51	0.48
– Net of specific provisions/individual impairment allowances	0.46	0.51	0.36	0.26	0.28	0.49	0.48	0.36	0.30	0.25
– Net of all provisions/impairment allowances	0.07	0.10	(0.04)	(0.15)	(0.13)	0.23	0.21	0.11	(0.02)	(0.08)
Overdue > 3 months and rescheduled loans	0.47	0.67	0.52	0.36	0.35	0.45	0.53	0.40	0.32	0.32
Profitability										
Return on assets (operating profit)	0.88	0.81	0.91	0.97	0.95	1.05	1.09	1.16	1.27	1.20
Return on assets (post-tax profit)	0.83	1.00	0.83	0.84	0.83	1.04	1.44	1.07	1.10	1.05
Net interest margin	1.07	1.04	1.12	1.20	1.23	1.32	1.32	1.45	1.62	1.63
Cost-to-income ratio	50.3	50.4	47.0	45.0	45.6	45.3	43.2	41.9	38.7	39.5
Loan impairment charges to total assets	0.09	0.10	0.10	0.06	0.08	0.09	0.07	0.06	0.05	0.08
Liquidity										
Loan to deposit ratio (all currencies)	70.1	68.4	73.0	72.6	75.3	56.5	57.0	59.5	60.1	62.3
Loan to deposit ^(f) ratio (Hong Kong dollar)	78.2	77.1	82.7	86.9	90.3	71.5	71.2	73.1	77.5	81.1
						Surveyed Institutions				
						2015 %	2016 %	2017 %	2018 %	2019 %
Asset Quality										
Delinquency ratio of residential mortgage loans						0.03	0.03	0.03	0.02	0.03
Credit card receivables										
– Delinquency ratio						0.25	0.24	0.22	0.21	0.25
– Charge-off ratio						1.82	1.92	1.75	1.51	1.57
						Locally Incorporated Licensed Banks				
						2015 %	2016 %	2017 %	2018 %	2019 %
Profitability										
Operating profit to shareholders' funds						11.4	10.9	11.7	12.9	11.6
Post-tax profit to shareholders' funds						11.4	14.6	10.9	11.2	10.2
Capital Adequacy										
Equity to assets ratio ^(b)						9.3	9.6	9.6	9.3	9.7
						All Locally Incorporated Authorized Institutions				
						2015 %	2016 %	2017 %	2018 %	2019 %
Capital Adequacy^(g)										
Common Equity Tier 1 capital ratio						14.6	15.4	15.3	16.0	16.5
Tier 1 capital ratio						15.3	16.4	16.5	17.9	18.5
Total capital ratio						18.3	19.2	19.1	20.3	20.7

(a) Figures are related to Hong Kong offices only unless otherwise stated.

(b) Figures are related to Hong Kong offices. For locally incorporated AIs, figures include their overseas branches.

(c) Credit exposures include loans and advances, acceptances and bills of exchange held, investment debt securities issued by others, accrued interest, and commitments and contingent liabilities to or on behalf of non-banks.

(d) Denotes loans or exposures graded as "substandard", "doubtful" or "loss" in the HKMA's Loan Classification System.

(e) Figures are related to Hong Kong offices. For locally incorporated AIs, figures include their overseas branches and major overseas subsidiaries.

(f) Includes swap deposits.

(g) The ratios are on a consolidated basis.

Table C Authorized Institutions: Domicile and Parentage

	2015	2016	2017	2018	2019
Licensed Banks					
(i) Incorporated in Hong Kong	22	22	22	22	31
(ii) Incorporated outside Hong Kong	135	134	133	130	133
Total	157	156	155	152	164
Restricted Licence Banks					
(i) Subsidiaries of licensed banks:					
(a) incorporated in Hong Kong	1	1	1	1	1
(b) incorporated outside Hong Kong	6	5	5	4	4
(ii) Subsidiaries or branches of foreign banks which are not licensed banks in Hong Kong	11	10	7	7	7
(iii) Bank related	3	3	3	3	3
(iv) Others	3	3	3	3	2
Total	24	22	19	18	17
Deposit-taking Companies					
(i) Subsidiaries of licensed banks:					
(a) incorporated in Hong Kong	4	4	4	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	6	6	4
(iii) Bank related	–	–	–	–	–
(iv) Others	5	4	4	4	3
Total	18	17	17	16	13
All Authorized Institutions	199	195	191	186	194
Local Representative Offices	64	54	49	48	43

Table D Authorized Institutions: Region/Economy of Beneficial Ownership

Region/Economy	Licensed Banks					Restricted Licence Banks					Deposit-taking Companies				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Asia & Pacific															
Hong Kong	7	7	7	7	9	–	–	–	–	–	3	2	2	2	1
Australia	5	5	5	5	5	–	–	–	–	–	–	–	–	–	–
Mainland China	21	21	22	22	30	2	2	2	2	2	3	3	3	2	2
India	12	12	12	12	12	–	–	–	–	–	1	1	1	1	1
Indonesia	1	1	1	1	1	1	1	1	1	1	–	–	–	–	–
Japan	11	11	11	10	10	2	2	2	2	2	1	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	1	1	–
Philippines	2	2	2	2	2	1	1	1	1	1	2	2	2	2	2
Singapore	6	6	6	6	6	–	–	–	–	–	–	–	–	–	–
South Korea	4	5	5	5	5	2	2	1	1	1	4	4	4	4	3
Taiwan	19	20	20	20	20	–	–	–	–	–	1	1	1	1	1
Thailand	1	1	1	1	1	3	3	2	2	2	–	–	–	–	–
Vietnam	–	–	–	–	–	–	–	–	–	–	1	1	1	1	1
Sub-Total	94	96	97	96	106	12	12	10	10	10	18	17	17	16	13
Europe															
Austria	2	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Belgium	1	1	1	1	1	1	1	1	1	1	–	–	–	–	–
France	8	7	7	7	7	2	2	1	–	–	–	–	–	–	–
Germany	4	4	3	3	3	–	–	–	–	–	–	–	–	–	–
Italy	3	3	3	3	3	–	–	–	–	–	–	–	–	–	–
Liechtenstein	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Netherlands	3	3	3	3	3	–	–	–	–	–	–	–	–	–	–
Spain	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Sweden	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Switzerland	6	8	7	6	6	–	–	–	–	–	–	–	–	–	–
United Kingdom	10	10	10	9	9	–	–	–	–	–	–	–	–	–	–
Sub-Total	42	42	40	38	38	3	3	2	1	1	0	0	0	0	0
Middle East															
Iran	1	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Qatar	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
United Arab Emirates	3	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Sub-Total	4	3	3	3	4	0	0	0	0	0	0	0	0	0	0
North America															
Canada	5	5	5	5	5	3	2	2	2	2	–	–	–	–	–
United States	10	9	9	9	10	6	5	5	5	4	–	–	–	–	–
Sub-Total	15	14	14	14	15	9	7	7	7	6	0	0	0	0	0
Brazil	2	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Grand Total	157	156	155	152	164	24	22	19	18	17	18	17	17	16	13

Table E Presence of World’s Largest 500 Banks in Hong Kong

Positions at 31.12.2019	Number of Overseas Banks ^(b)					Licensed Banks ^(c)					Restricted Licence Banks ^(c)					Deposit-Taking Companies ^(c)					Local Representative Offices				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
World Ranking ^(a)																									
1–20	20	20	20	20	20	39	36	34	33	33	5	6	5	4	4	–	–	1	1	1	–	–	–	–	–
21–50	26	27	27	27	27	25	27	28	28	30	5	4	4	4	3	1	2	1	–	–	3	2	2	2	2
51–100	28	28	28	30	31	23	21	22	24	27	2	3	2	2	1	3	3	3	3	2	7	8	8	8	6
101–200	34	32	34	36	37	22	22	24	24	25	2	–	1	2	3	1	1	1	1	1	15	10	10	10	10
201–500	57	56	47	42	39	30	32	29	27	26	3	3	2	1	1	4	4	5	4	4	22	19	13	12	10
Sub-total	165	163	156	155	154	139	138	137	136	141	17	16	14	13	12	9	10	11	9	8	47	39	33	32	28
Others	41	31	31	31	27	18	18	18	16	23	7	6	5	5	5	9	7	6	7	5	17	15	16	16	15
Total	206	194	187	186	181	157	156	155	152	164	24	22	19	18	17	18	17	17	16	13	64	54	49	48	43

(a) Top 500 banks/banking groups in the world ranked by total assets. Figures are extracted from The Banker, July 2019 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 F Balance Sheet: All Authorized Institutions and Retail Banks

All Authorized Institutions

(HK\$ billion)	2015			2016			2017			2018 ^(d)			2019		
	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets															
Loans to customers	4,153	3,382	7,535	4,479	3,544	8,023	5,360	3,954	9,314	5,836	3,886	9,723	6,219	4,157	10,377
– Inside Hong Kong ^(a)	3,650	1,604	5,254	3,988	1,651	5,639	4,653	1,860	6,513	4,988	1,788	6,776	5,324	1,935	7,259
– Outside Hong Kong ^(b)	503	1,778	2,281	491	1,893	2,384	707	2,093	2,801	849	2,099	2,947	895	2,223	3,118
Interbank lending	561	4,577	5,138	720	4,513	5,233	652	5,343	5,995	692	5,906	6,598	648	5,128	5,776
– Inside Hong Kong	362	672	1,034	401	673	1,074	327	690	1,017	338	764	1,102	311	604	915
– Outside Hong Kong	199	3,905	4,104	318	3,841	4,159	326	4,653	4,978	354	5,142	5,496	337	4,524	4,861
Negotiable certificates of deposit (NCDs)	152	269	422	209	355	564	172	429	601	168	394	562	146	373	519
Negotiable debt instruments, other than NCDs	962	2,722	3,684	1,160	2,906	4,067	1,274	3,092	4,365	1,358	3,441	4,799	1,395	3,690	5,086
Other assets	1,053	1,349	2,403	1,049	1,716	2,766	924	1,497	2,421	875	1,487	2,361	1,034	1,672	2,705
Total assets	6,881	12,300	19,181	7,617	13,036	20,652	8,382	14,315	22,697	8,929	15,114	24,043	9,442	15,020	24,462
Liabilities															
Deposits from customers ^(c)	5,312	5,437	10,750	5,809	5,918	11,727	6,485	6,268	12,752	6,715	6,671	13,386	6,884	6,887	13,772
Interbank borrowing	805	4,011	4,816	888	3,842	4,730	829	4,653	5,482	945	4,849	5,794	959	4,514	5,473
– Inside Hong Kong	455	743	1,198	533	740	1,273	458	756	1,214	517	776	1,293	499	606	1,105
– Outside Hong Kong	351	3,267	3,618	355	3,101	3,457	371	3,897	4,268	428	4,073	4,501	461	3,908	4,368
Negotiable certificates of deposit	240	592	832	265	525	790	235	720	955	220	595	815	181	623	803
Other liabilities	1,322	1,461	2,783	1,563	1,843	3,405	1,618	1,889	3,507	1,853	2,195	4,048	2,200	2,214	4,414
Total liabilities	7,680	11,501	19,181	8,525	12,128	20,652	9,167	13,530	22,697	9,733	14,310	24,043	10,224	14,238	24,462

Retail Banks

(HK\$ billion)	2015			2016			2017			2018 ^(d)			2019		
	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets															
Loans to customers	3,376	1,432	4,808	3,611	1,601	5,212	4,171	1,819	5,991	4,600	1,831	6,431	4,988	1,939	6,927
– Inside Hong Kong ^(a)	3,091	817	3,908	3,340	907	4,247	3,818	995	4,813	4,157	993	5,150	4,468	1,075	5,543
– Outside Hong Kong ^(b)	285	616	900	271	694	965	353	825	1,178	443	838	1,281	520	864	1,384
Interbank lending	303	1,643	1,946	372	1,683	2,054	383	1,993	2,376	445	2,364	2,809	407	2,039	2,445
– Inside Hong Kong	227	260	488	264	357	621	246	384	630	272	453	725	255	381	636
– Outside Hong Kong	75	1,383	1,458	108	1,325	1,433	137	1,609	1,746	173	1,911	2,084	152	1,657	1,809
Negotiable certificates of deposit (NCDs)	113	127	240	153	124	277	119	123	242	136	123	259	105	117	223
Negotiable debt instruments, other than NCDs	772	1,985	2,757	931	2,047	2,978	995	2,036	3,031	1,048	2,243	3,292	1,106	2,502	3,608
Other assets	781	935	1,716	771	1,217	1,989	733	1,118	1,851	722	1,116	1,838	871	1,272	2,143
Total assets	5,344	6,123	11,467	5,838	6,672	12,510	6,400	7,090	13,490	6,952	7,677	14,630	7,477	7,870	15,346
Liabilities															
Deposits from customers ^(c)	4,719	3,787	8,506	5,073	4,072	9,145	5,704	4,356	10,061	5,939	4,754	10,693	6,149	4,972	11,122
Interbank borrowing	329	586	915	365	535	900	304	587	891	354	714	1,068	373	635	1,008
– Inside Hong Kong	200	281	481	250	242	492	193	248	440	234	263	497	244	160	404
– Outside Hong Kong	130	304	434	115	293	408	111	340	451	120	451	572	129	475	604
Negotiable certificates of deposit	62	123	185	50	85	136	46	125	171	42	79	121	57	87	144
Other liabilities	1,058	803	1,861	1,235	1,094	2,329	1,316	1,051	2,367	1,528	1,220	2,748	1,815	1,257	3,072
Total liabilities	6,169	5,298	11,467	6,723	5,787	12,510	7,370	6,120	13,490	7,862	6,767	14,630	8,395	6,951	15,346

(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 G Major Balance Sheet Items by Region/Economy of Beneficial Ownership of Authorized Institutions

(HK\$ billion)		Mainland China	Japan	US	Europe	Others	Total
Total Assets	2018	8,844	1,500	1,156	3,281	9,262	24,043
	2019	8,816	1,430	1,285	3,438	9,493	24,462
Deposits from Customers	2018	4,805	372	619	1,683	5,906	13,386
	2019	5,107	358	686	1,662	5,958	13,772
Loans to Customers	2018	3,682	577	299	1,296	3,869	9,723
	2019	3,940	578	353	1,413	4,093	10,377
Loans to Customers Inside Hong Kong ^(a)	2018 ^(c)	2,441	313	254	749	3,019	6,776
	2019	2,633	307	287	820	3,213	7,259
Loans to Customers Outside Hong Kong ^(b)	2018 ^(c)	1,242	264	44	547	850	2,947
	2019	1,307	271	66	593	880	3,118

(a) Defined as loans for use in Hong Kong plus trade finance.

(b) Includes "others" (i.e. unallocated).

(c) 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 Flow of Funds for All Authorized Institutions and Retail Banks

All Authorized Institutions

Increase/(Decrease) in (HK\$ billion)	2018 ^(d)			2019		
	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets						
Loans to customers	476	(67)	409	383	271	654
– Inside Hong Kong ^(a)	335	(72)	263	336	147	483
– Outside Hong Kong ^(b)	141	5	146	47	124	171
Interbank lending	40	563	603	(44)	(778)	(822)
– Inside Hong Kong	12	74	85	(27)	(160)	(187)
– Outside Hong Kong	28	490	518	(17)	(618)	(635)
All other assets	30	303	334	174	413	588
Total assets	547	799	1,346	513	(93)	420
Liabilities						
Deposits from customers ^(c)	231	403	634	169	216	385
Interbank borrowing	116	196	312	15	(335)	(320)
– Inside Hong Kong	59	20	79	(18)	(170)	(188)
– Outside Hong Kong	57	176	233	33	(165)	(133)
All other liabilities	220	181	400	308	47	355
Total liabilities	566	780	1,346	491	(71)	420
Net Interbank Borrowing/(Lending)	76	(367)	(291)	59	443	502
Net Customer Lending/(Borrowing)	246	(471)	(225)	214	55	269

Retail Banks

Increase/(Decrease) in (HK\$ billion)	2018 ^(d)			2019		
	HK\$	F/CY	Total	HK\$	F/CY	Total
Assets						
Loans to customers	429	12	441	388	108	495
– Inside Hong Kong ^(a)	339	(2)	337	311	81	392
– Outside Hong Kong ^(b)	90	13	104	77	26	103
Interbank lending	63	371	434	(39)	(326)	(364)
– Inside Hong Kong	26	69	95	(17)	(72)	(89)
– Outside Hong Kong	36	302	338	(21)	(254)	(275)
All other assets	61	205	265	176	410	586
Total assets	552	587	1,140	525	192	717
Liabilities						
Deposits from customers ^(c)	235	397	632	210	219	429
Interbank borrowing	50	127	177	19	(79)	(60)
– Inside Hong Kong	41	15	56	10	(103)	(92)
– Outside Hong Kong	10	111	121	9	24	33
All other liabilities	207	123	331	304	44	348
Total liabilities	492	647	1,140	533	184	717
Net Interbank Borrowing/(Lending)	(12)	(244)	(256)	58	247	305
Net Customer Lending/(Borrowing)	194	(386)	(191)	177	(111)	66

(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 I 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	%
2015								
Licensed banks	4,118	3,342	7,460	99	5,299	5,420	10,720	100
Restricted licence banks	23	34	57	1	8	17	25	–
Deposit-taking companies	12	6	18	–	5	1	6	–
Total	4,153	3,382	7,535	100	5,312	5,437	10,750	100
2016								
Licensed banks	4,447	3,507	7,954	99	5,797	5,893	11,689	100
Restricted licence banks	20	33	52	1	7	25	32	–
Deposit-taking companies	12	5	17	–	5	1	6	–
Total	4,479	3,544	8,023	100	5,809	5,918	11,727	100
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

(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 J Loans to Customers inside Hong Kong by Economic Sector**All Authorized Institutions**

Sector (HK\$ billion)	2015		2016		2017		2018 ^(b)		2019	
	HK\$	%	HK\$	%	HK\$	%	HK\$	%	HK\$	%
Hong Kong's visible trade	454	9	455	8	494	8	456	7	453	6
Manufacturing	244	5	247	4	293	4	300	4	303	4
Transport and transport equipment	275	5	295	5	342	5	332	5	326	4
Building, construction and property development, and investment	1,138	22	1,260	22	1,471	23	1,527	23	1,632	22
Wholesale and retail trade	444	8	413	7	409	6	390	6	378	5
Financial concerns (other than authorized institutions)	453	9	546	10	821	13	858	13	908	13
Individuals:										
– to purchase flats in the Home Ownership Scheme, the Private Sector Participation Scheme and the Tenants Purchase Scheme	41	1	43	1	51	1	58	1	78	1
– to purchase other residential properties	1,078	21	1,122	20	1,208	19	1,314	19	1,435	20
– other purposes	490	9	519	9	618	9	681	10	801	11
Others	637	12	740	13	805	12	860	13	945	13
Total ^(a)	5,254	100	5,639	100	6,513	100	6,776	100	7,259	100

Retail Banks

Sector (HK\$ billion)	2015		2016		2017		2018 ^(b)		2019	
	HK\$	%	HK\$	%	HK\$	%	HK\$	%	HK\$	%
Hong Kong's visible trade	294	8	312	7	327	7	315	6	316	6
Manufacturing	160	4	171	4	201	4	213	4	213	4
Transport and transport equipment	185	5	192	5	213	4	217	4	211	4
Building, construction and property development, and investment	856	22	949	22	1,086	23	1,155	22	1,217	22
Wholesale and retail trade	262	7	255	6	245	5	260	5	258	5
Financial concerns (other than authorized institutions)	224	6	284	7	425	9	464	9	512	9
Individuals:										
– to purchase flats in the Home Ownership Scheme, the Private Sector Participation Scheme and the Tenants Purchase Scheme	41	1	43	1	51	1	58	1	78	1
– to purchase other residential properties	1,070	27	1,115	26	1,202	25	1,307	25	1,433	26
– other purposes	398	10	430	10	495	10	550	11	649	12
Others	417	11	498	12	569	12	611	12	657	12
Total ^(a)	3,908	100	4,247	100	4,813	100	5,150	100	5,543	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 K Deposits from Customers

(HK\$ billion)	All Authorized Institutions				Retail banks			
	Demand	Savings	Time	Total	Demand	Savings	Time	Total
Hong Kong Dollar ^(a)								
2015	904	2,490	1,918	5,312	803	2,436	1,480	4,719
2016	1,038	2,715	2,055	5,809	925	2,669	1,479	5,073
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
Foreign Currency								
2015	718	2,005	2,715	5,437	396	1,706	1,685	3,787
2016	785	2,224	2,909	5,918	448	1,939	1,684	4,072
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
Total								
2015	1,622	4,495	4,633	10,750	1,199	4,142	3,165	8,506
2016	1,824	4,939	4,964	11,727	1,373	4,608	3,164	9,145
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

(a) Hong Kong dollar customer deposits include swap deposits.

Figures may not add up to total because of rounding.

Table L Geographical Breakdown of Net External Claims/(Liabilities) of All Authorized Institutions

Region/Economy ^(a) (HK\$ billion)	2018			2019		
	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)
Developed Countries	434	1,029	1,464	353	1,509	1,861
United States of America	118	571	689	141	595	736
Japan	4	338	342	31	497	529
Australia	270	104	374	283	122	405
Canada	95	70	165	107	62	169
Luxembourg	54	20	74	60	20	80
Ireland	0	44	44	(0)	61	61
New Zealand	20	22	41	20	25	45
France	(47)	59	12	(44)	67	23
Liechtenstein	8	(0)	8	15	(0)	15
United Kingdom	94	(305)	(211)	50	(37)	13
Sweden	3	14	18	1	12	13
Norway	5	6	11	7	5	12
Finland	2	(1)	2	5	2	7
Denmark	1	1	2	1	1	2
Malta	(1)	1	(0)	(0)	1	1
Greece	(0)	(1)	(1)	(0)	(1)	(1)
Belgium	7	3	10	(4)	1	(2)
Cyprus	0	0	0	0	(3)	(3)
Germany	(18)	52	34	(39)	36	(3)
Austria	4	0	5	(11)	1	(11)
Switzerland	(11)	(6)	(17)	(16)	(3)	(18)
Italy	(35)	(2)	(37)	(44)	(1)	(45)
Spain	(33)	(2)	(35)	(69)	(5)	(74)
Netherlands	(107)	40	(67)	(141)	49	(92)
Others	(0)	1	1	0	(1)	(0)
Offshore centres	(23)	120	97	3	164	167
West Indies UK	0	130	130	0	174	175
Cayman Islands	(5)	68	62	(10)	84	74
Singapore	86	(86)	(0)	84	(62)	23
Mauritius	5	2	7	4	7	12
Bahrain	4	4	9	4	3	7
Panama	1	7	9	1	4	5
Jersey	(0)	5	4	(0)	5	5
Bermuda	(0)	(1)	(1)	(0)	2	2
Guernsey	(0)	3	2	(0)	1	1
Vanuatu	(0)	(1)	(1)	(0)	(1)	(1)
Barbados	0	(2)	(2)	0	(1)	(1)
Bahamas	(12)	3	(9)	(8)	(8)	(16)
Samoa	(0)	(27)	(27)	(0)	(26)	(26)
Macao SAR	(101)	16	(85)	(72)	(18)	(90)
Others	0	(1)	(1)	(0)	(0)	(0)
Developing Europe	(11)	(64)	(75)	(5)	(80)	(85)
Turkey	4	(1)	3	4	(2)	2
Poland	(0)	0	0	0	1	1
Czech Republic	(1)	0	(0)	(0)	1	1
Hungary	1	1	2	1	(2)	(1)
Russia	(8)	(64)	(72)	(1)	(77)	(78)
Others	(7)	(0)	(8)	(8)	(1)	(8)

Table L Geographical Breakdown of Net External Claims/(Liabilities) of All Authorized Institutions (continued)

Region/Economy ^(a) (HK\$ billion)	2018			2019		
	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)
Developing Latin America and Caribbean	22	8	30	14	8	22
Venezuela	14	0	14	12	(0)	12
Peru	0	5	5	0	7	7
Mexico	0	6	7	0	7	7
Brazil	7	2	9	2	2	4
Chile	1	(2)	(1)	1	(0)	1
Others	(0)	(3)	(4)	(2)	(7)	(9)
Developing Africa and Middle East	19	(2)	17	59	24	84
United Arab Emirates	27	27	54	58	31	89
Qatar	12	23	35	19	20	40
Saudi Arabia	(17)	(2)	(18)	(4)	14	10
South Africa	6	2	8	6	2	8
Oman	(1)	3	2	(0)	2	2
Kenya	0	1	1	1	1	2
Egypt	(2)	2	(0)	(1)	1	1
Israel	1	(1)	(0)	1	(1)	(0)
Ghana	(1)	(0)	(1)	(1)	0	(1)
Kuwait	(0)	(1)	(2)	(1)	(0)	(2)
Liberia	0	(3)	(3)	0	(3)	(3)
Nigeria	(2)	(19)	(22)	(13)	(12)	(26)
Others	(4)	(32)	(36)	(5)	(31)	(36)
Developing Asia and Pacific	1,427	(443)	984	844	(179)	664
Mainland China	865	(152)	713	338	32	370
Republic of Korea	230	46	277	281	71	352
India	(5)	75	70	(32)	95	63
Malaysia	46	7	53	40	1	41
Indonesia	16	16	32	15	24	40
Bangladesh	19	(1)	18	18	(0)	18
Sri Lanka	7	4	11	5	3	8
Papua New Guinea	(0)	2	2	(1)	3	2
Laos	0	0	0	1	0	1
Mongolia	(0)	2	2	(1)	2	1
Myanmar	(1)	1	0	(1)	1	1
Pakistan	1	(2)	(1)	(0)	(0)	(1)
Brunei Darussalam	(1)	(1)	(2)	(0)	(1)	(1)
Maldives	(0)	0	(0)	(1)	(1)	(2)
Vietnam	(18)	13	(5)	(18)	16	(2)
Thailand	57	(68)	(10)	67	(72)	(5)
Kazakhstan	(2)	(3)	(4)	(1)	(4)	(6)
Cambodia	(5)	(1)	(6)	(6)	(3)	(9)
Nepal	(6)	(2)	(8)	(8)	(2)	(10)
Philippines	(15)	(23)	(37)	(1)	(17)	(18)
Taiwan	240	(363)	(123)	153	(339)	(186)
Others	(2)	5	3	(4)	11	7
International organisations	0	76	76	0	92	92
Overall Total	1,868	726	2,593	1,267	1,539	2,807

(a) Regions and 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 used in this Report

AI	– Artificial intelligence (<i>International Financial Centre chapter</i>)	GDP	– Gross Domestic Product
Als	– Authorized institutions	GSC	– Governance Sub-Committee
AML/CFT	– Anti-money laundering and counter-financing of terrorism	G-SIBs	– Global systemically important banks
AMBs	– Approved money brokers	HIBORs	– Hong Kong Interbank Offered Rates
AoF	– Hong Kong Academy of Finance	HKAB	– Hong Kong Association of Banks
ASEAN	– Association of Southeast Asian Nations	HKMA	– Hong Kong Monetary Authority
ATMs	– Automated teller machines	HKTR	– Hong Kong Trade Repository
Basel Committee	– Basel Committee on Banking Supervision	IA	– Insurance Authority
BCR	– Banking (Capital) Rules	IFC	– International Finance Corporation
BELR	– Banking (Exposure Limits) Rules	IFFO	– Infrastructure Financing Facilitation Office
BIS	– Bank for International Settlements	IFRS 9	– International Financial Reporting Standard 9
BO	– Banking Ordinance	IMF	– International Monetary Fund
BP	– Backing Portfolio	IO	– Insurance Ordinance
CBC	– Currency Board Sub-Committee	IOSCO	– International Organization of Securities Commissions
CBCM	– Cross-border Crisis Management	IP	– Investment Portfolio
CBDC	– Central Bank Digital Currency	IPO	– Initial public offering
CCP standard	– Capital requirements for bank exposures to central counterparties	IRB	– Internal ratings-based
CDD	– Customer due diligence	LAC	– Loss-absorbing capacity
CFI	– Cybersecurity Fortification Initiative	LCR	– Liquidity Coverage Ratio
CGF	– Centre for Green Finance	LEERS	– Linked Exchange Rate System
CHATS	– Clearing House Automated Transfer System	LIBOR	– London Interbank Offered Rate
CLS	– Continuous Linked Settlement	LMR	– Liquidity Maintenance Ratio
CMGs	– Crisis management groups	LTGP	– Long-Term Growth Portfolio
CMU	– Central Moneymarkets Unit	LTV	– Loan-to-value
CPMI	– Committee on Payments and Market Infrastructures	ME	– Mutual Evaluation
CoP	– Code of Practice	ML/TF	– Money laundering and terrorist financing
CSDs	– Central securities depositories	MoU	– Memorandum of Understanding
CTCs	– Corporate treasury centres	MPF	– Mandatory Provident Fund
CU	– Convertibility Undertaking	MSP	– Mystery shopping programme
DPS	– Deposit Protection Scheme	NGFS	– Network for Greening the Financial System
DSR	– Debt servicing ratio	NSFR	– Net Stable Funding Ratio
D-SIBs	– Domestic systemically important banks	Open API	– Open Application Programming Interface
ECF	– Enhanced Competency Framework	OTC	– Over-the-counter
ECL	– Expected credit loss	PBoC	– People's Bank of China
EFAC	– Exchange Fund Advisory Committee	PFMI	– Principles for Financial Market Infrastructures
EFBNs	– Exchange Fund Bills and Notes	PSSVFO	– Payment Systems and Stored Value Facilities Ordinance
EIF standard	– Capital Requirements for Banks' Equity Investments in Funds	QIS	– Quantitative impact study
EMEAP	– Executives' Meeting of East Asia-Pacific Central Banks	Regtech	– Regulatory technology
ESG	– Environmental, social and governance	ReSG	– Resolution Steering Group
FATF	– Financial Action Task Force	RI	– Responsible investment
FFO	– Fintech Facilitation Office	RIs	– Registered institutions (<i>Banking Stability chapter</i>)
FIRO	– Financial Institutions (Resolution) Ordinance	RMB	– Renminbi
FMs	– Financial market infrastructures	RPSs	– Retail payment systems
FMR	– Focused Meeting on Resolution	RTGS	– Real Time Gross Settlement
FPS	– Faster Payment System	SA-CCR	– Standardised approach for measuring counterparty credit risk exposures
FS	– Financial Secretary	SFC	– Securities and Futures Commission
FSAP	– Financial Sector Assessment Program	SIG	– Supervision and Implementation Group
FSB	– Financial Stability Board	SMEs	– Small and medium-sized enterprises
FSS	– Fintech Supervisory Sandbox	SPM	– Supervisory Policy Manual
FX	– Foreign exchange	SRC	– Supervisory and Regulatory Cooperation
GBA	– Greater Bay Area	SVFs	– Stored value facilities
		TLAC	– Total loss-absorbing capacity
		WGFM	– Working Group on Financial Markets

Reference Resources

The *HKMA Annual Report* is usually published in April each year. A number of other HKMA publications provide explanatory and background information on the HKMA's policies and functions. These include:

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