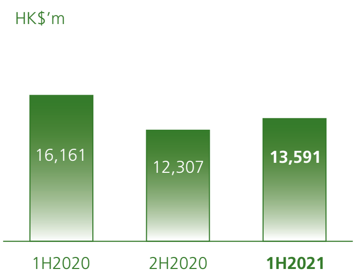
MANAGEMENT DISCUSSION AND ANALYSIS

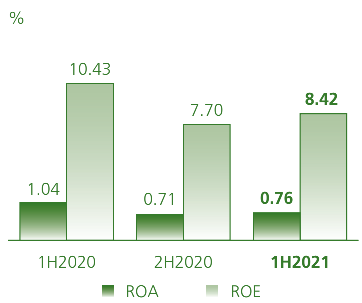
FINANCIAL PERFORMANCE AND CONDITIONS AT A GLANCE

The following table is a summary of the Group's key financial results for the first half of 2021 in comparison with the previous two half-year periods of 2020.

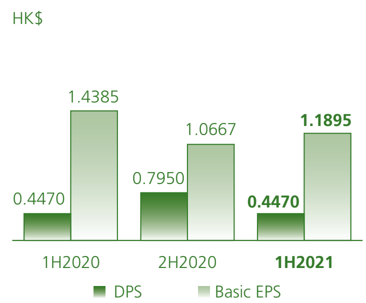
Profit for the period



Return on Average Shareholders' Equity[1] ("ROE") and Return on Average Total Assets[1] ("ROA")



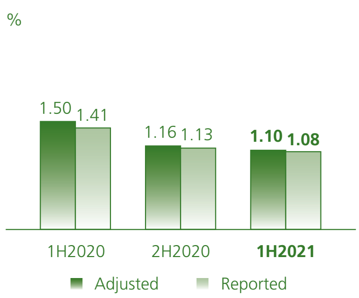
Basic Earnings Per Share ("Basic EPS") and Dividend Per Share ("DPS")



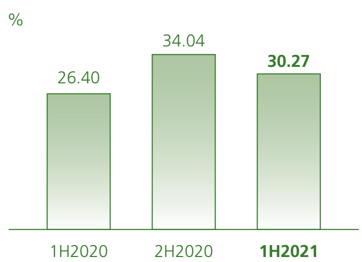
Profit for the period

- In the first half of 2021, profit for the period amounted to HK$13,591 million, representing an increase of 10.4% compared to the second half of 2020 and a decrease of 15.9% compared to the same period of the previous year.
- ROE and ROA was 8.42% and 0.76% respectively.
- Basic EPS was HK$1.1895. The interim dividend per share was HK$0.447.

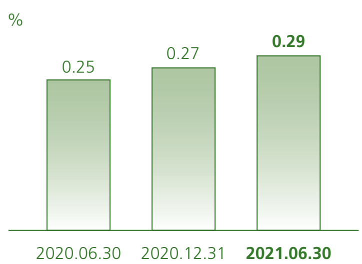
Net Interest Margin ("NIM")



Cost to Income Ratio



Classified or Impaired Loan Ratio[2]



Net interest margin ("NIM") narrowed amid falling market interest rates

- NIM was 1.08%. If the funding income or cost of foreign currency swap contracts[3] were included, NIM would have been 1.10%, down 40 basis points year-on-year, as a result of falling market interest rates. The Group proactively managed its assets and liabilities, resulting in solid growth in advances to customers and an improved mix of deposits from customers with shorter tenor of time deposits and a higher CASA ratio which led to an effective control of its costs of liabilities. All of which partially mitigated the aforementioned negative impact.

Maintained satisfactory cost efficiency by optimising resource allocation

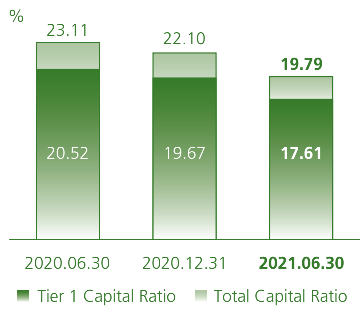
- Cost to income ratio was 30.27%. While continuing to invest in its strategic priorities, the Group strengthened its cost management in order to enhance efficiency in resource allocation, thus maintaining its cost to income ratio at a satisfactory level relative to industry peers.

Maintained benign asset quality through prudent risk management

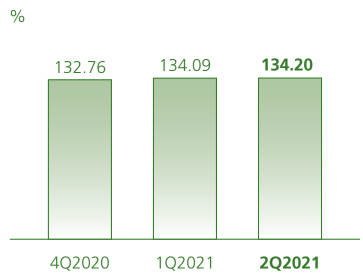
- The classified or impaired loan ratio was 0.29%. Adjusted for the impact of IPO financing, the ratio would have been 0.32%, continuing to outperform the market average.

MANAGEMENT DISCUSSION AND ANALYSIS

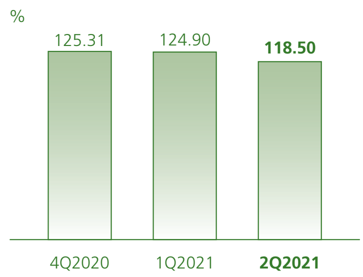
Capital Ratio



Average Value of Liquidity Coverage Ratio



Quarter-end Value of Net Stable Funding Ratio



Strong capital position to support solid business growth

- Tier 1 capital ratio was 17.61%, while total capital ratio was 19.79%. The IPO-related activities caused temporary drops in the capital ratios as at the end of June 2021.

Liquidity remained ample

- The average values of liquidity coverage ratio in the first and second quarter of 2021 were 134.09% and 134.20% respectively.
- Net stable funding ratio stood at 124.90% at the end of the first quarter of 2021 and 118.50% at the end of the second quarter of 2021 respectively. The IPO-related activities caused a temporary drop in the net stable funding ratio at the end of the second quarter of 2021.

1. Return on average shareholders' equity and return on average total assets as defined in "Financial Highlights".
2. Classified or impaired advances represent advances which are either classified as "substandard", "doubtful" or "loss" under the Group's classification of loan quality, or classified as Stage 3.
3. Foreign exchange swap contracts are normally used for the Group's liquidity management and funding activities. In foreign exchange swap contracts, the Group exchanges one currency (original currency) for another (swapped currency) at the spot exchange rate (spot transaction) and commits to reverse the spot transaction by exchanging the same currency pair at a future maturity date at a predetermined rate (forward transaction). In this way, surplus funds in the original currency are swapped into another currency for liquidity and funding purposes with minimal foreign exchange risk. The exchange difference (funding income or cost) between the spot and forward contracts is recognised as a foreign exchange gain or loss (as included in "net trading gain"), while the corresponding interest differential between the surplus funds in the original currency and swapped currency is reflected in net interest income.

ECONOMIC BACKGROUND AND OPERATING ENVIRONMENT

The COVID-19 pandemic situation remained volatile in the first half of 2021, with China-US tensions and persistent geopolitical risks. The accommodative monetary policies maintained by advanced economies in the US and Europe accelerated economic activity. At the same time, the Chinese mainland effectively contained the pandemic, with major economic indicators registering relatively rapid growth and the economy mounting a resilient recovery. A deterioration of the pandemic situation in the Southeast Asian region led to further restrictive measures that adversely affected the region's economic recovery.

The Hong Kong economy returned to positive growth. Domestic demand improved as the pandemic situation was gradually brought under control, and the performance of Hong Kong's merchandise trade substantially improved owing to a rebound in global demand. However, Hong Kong's economic recovery was constrained by the severe effects of the pandemic on the global economic environment, resulting in a sharp decline in visitor arrivals and a persistently high unemployment rate.

In the first half of the year, the exchange rate of the Hong Kong dollar against the US dollar weakened slightly, but remained close to the strong-side Convertibility Undertaking. The aggregate balance in the banking sector was largely stable with ample liquidity in the market. The average 1-month HIBOR and 1-month LIBOR dropped from 0.85% and 0.52% respectively in 2020 to 0.12% and 0.11% respectively in the first half of 2021.

Stock market sentiment improved in Hong Kong in the beginning of 2021 amid anticipation of a global economic recovery, although the investment sentiment subsequently weakened in the second quarter. As at the end of June 2021, the Hang Seng Index had climbed 5.9% compared to the end of 2020. With secondary listings of China concept stocks being undertaken in Hong Kong, the total funds raised and average daily turnover of the stock market rose 107.7% and 60.1% respectively compared to the same period last year.

Despite the highly uncertain development of the pandemic situation, the Hong Kong property market gradually recovered with residential property prices rising from the end of last year amid the easing of monetary policies by central banks around the world, the continued low interest rate environment for the Hong Kong dollar, and the recovery of the Hong Kong economy. The HKSAR Government continued to implement demand-side management measures and the HKMA maintained prudent supervisory measures on mortgage loans, which helped banks to maintain stable asset quality in their mortgage businesses.

Despite these challenges in the macroeconomic environment, the banking industry continues to enjoy enormous development opportunities. The budget announced by the HKSAR Government in February 2021 included a target to implement Southbound Trading under Bond Connect within this year. Together with the publication of the Public Consultation of the Guangdong-Hong Kong-Macao Greater Bay Area Cross-Boundary Wealth Management Connect Pilot Scheme Implementation Details by the People's Bank of China in May, these will further promote mutual financial market access between the Chinese mainland and Hong Kong and expand market horizons for the Hong Kong banking industry. The 14th Five-Year Plan recognises high-quality and technological innovation as key imperatives for the development of the Chinese mainland economy. Related demand for investment and financing arising from it will not only create tremendous business opportunities for the Hong Kong banking industry, but will also promote the development of green finance. In addition, the national carbon emission trading scheme officially launched in July this year in the Chinese mainland will not only push forward green and low-carbon development, but also inject further impetus to the financial sector.

MANAGEMENT DISCUSSION AND ANALYSIS

CONSOLIDATED FINANCIAL REVIEW

Financial Highlights

HK$'m	**Half-year ended 30 June 2021**	Half-year ended 31 December 2020	Half-year ended 30 June 2020
Net operating income before impairment allowances	**25,050**	25,731	28,743
Operating expenses	**(7,582)**	(8,758)	(7,589)
Operating profit before impairment allowances	**17,468**	16,973	21,154
Operating profit after impairment allowances	**16,286**	15,632	19,788
Profit before taxation	**16,153**	14,359	19,224
Profit for the period	**13,591**	12,307	16,161
Profit attributable to equity holders of the Company	**12,576**	11,278	15,209

In the first half of 2021, operating income in the banking sector remained under pressure as the operating environment remained complex and challenging, stemming from a volatile COVID-19 pandemic situation and a continued low interest rate environment. During the reporting period, the Group's net operating income before impairment allowances amounted to HK$25,050 million, a decrease of HK$3,693 million or 12.8% year-on-year. This was mainly due to a year-on-year decrease in net interest income resulting from falling market interest rates. Nevertheless, the Group actively responded to a challenging market environment, captured market opportunities amid satisfactory investor sentiment in the beginning of the year, and stepped up its efforts to enhance its integrated service capabilities. Net fee and commission income grew year-on-year as a result, partially offsetting the decrease in net interest income. Operating expenses decreased slightly as a result of the Group's effort to engage in green banking practices and optimise resource allocation. Meanwhile, the net charge of impairment allowances decreased and a lower net loss was recorded from fair-value adjustments on investment properties. Profit for the period amounted to HK$13,591 million, a year-on-year decrease of HK$2,570 million or 15.9%. Profit attributable to equity holders was HK$12,576 million, a decrease of HK$2,633 million or 17.3% year-on-year.

As compared with the second half of 2020, the Group's net operating income before impairment allowances decreased by HK$681 million or 2.6%. This was mainly due to a decrease in net interest income resulting from falling market interest rates. At the same time, net fee and commission income increased, operating expenses decreased and the Group recorded a lower net loss from fair value adjustments on investment properties. As a result, the Group's profit for the period rebounded by HK$1,284 million or 10.4% compared to the second half of last year.

INCOME STATEMENT ANALYSIS

Net Interest Income and Net Interest Margin

HK$'m, except percentages	**Half-year ended 30 June 2021**	Half-year ended 31 December 2020	Half-year ended 30 June 2020
Interest income	**19,848**	20,992	28,936
Interest expense	**(3,906)**	(4,890)	(10,300)
Net interest income	**15,942**	16,102	18,636
Average interest-earning assets	**2,977,664**	2,823,333	2,651,178
Net interest spread	**1.02%**	1.07%	1.25%
Net interest margin	**1.08%**	1.13%	1.41%
Net interest margin (adjusted)*	**1.10%**	1.16%	1.50%

* Including the funding income or cost of foreign currency swap contracts.

Net interest income amounted to HK$15,942 million in the first half of 2021. If the funding income or cost of foreign currency swap contracts# were included, net interest income would have decreased by 18.0% year-on-year to HK$16,254 million. This was mainly due to a narrowing of net interest margin, partially offset by growth in average interest-earning assets.

Average interest-earning assets expanded by HK$326,486 million or 12.3% year-on-year. Advances to customers and debt securities investments increased, driven by growth in deposits from customers.

If the funding income or cost of foreign currency swap contracts were included, net interest margin would have been 1.10%, down 40 basis points year-on-year. The decrease in net interest margin was mainly due to a narrowing of the Group's loan and deposit spread and a decline in the average yield of debt securities investments and other debt instruments, and interbank placements amid falling market interest rates. The Group proactively managed its assets and liabilities in response to the low interest rate environment, resulting in solid growth in advances to customers and an improved mix of deposits from customers with shorter tenor of time deposits and a higher CASA ratio which led to an effective control of its costs of liabilities, partially offsetting the negative impacts.

Compared with the second half of 2020, the Group's net interest income would have decreased by 1.8% if the funding income or cost of foreign currency swap contracts were included. This was mainly due to a narrowing of the loan and deposit spread and a decline in the average yield of debt securities investments and other debt instruments amid a further decline in market interest rates, both of which led to a narrowing of 6 basis points in net interest margin.

Foreign exchange swap contracts are normally used for the Group's liquidity management and funding activities. In foreign exchange swap contracts, the Group exchanges one currency (original currency) for another (swapped currency) at the spot exchange rate (spot transaction) and commits to reverse the spot transaction by exchanging the same currency pair at a future maturity date at a predetermined rate (forward transaction). In this way, surplus funds in the original currency are swapped into another currency for liquidity and funding purposes with minimal foreign exchange risk. The exchange difference (funding income or cost) between the spot and forward contracts is recognised as a foreign exchange gain or loss (as included in "net trading gain"), while the corresponding interest differential between the surplus funds in the original currency and swapped currency is reflected in net interest income.

The table below summarises the average balances and average interest rates of individual categories of assets and liabilities:

	Half-year ended 30 June 2021		Half-year ended 31 December 2020		Half-year ended 30 June 2020	
ASSETS	**Average balance HK$'m**	**Average yield %**	Average balance HK$'m	Average yield %	Average balance HK$'m	Average yield %
Balances and placements with banks and other financial institutions	**385,213**	**0.80**	396,933	0.72	305,597	1.09
Debt securities investments and other debt instruments	**970,458**	**1.27**	859,332	1.48	839,362	2.04
Advances to customers and other accounts	**1,604,278**	**1.52**	1,557,703	1.67	1,478,356	2.52
Other interest-earning assets	**17,715**	**0.70**	9,365	1.54	27,863	1.09
Total interest-earning assets	**2,977,664**	**1.34**	2,823,333	1.47	2,651,178	2.19
Non interest-earning assets	**606,975**	**–**	642,931	–	470,798	–
Total assets	**3,584,639**	**1.12**	3,466,264	1.20	3,121,976	1.86
LIABILITIES	**Average balance HK$'m**	**Average rate %**	Average balance HK$'m	Average rate %	Average balance HK$'m	Average rate %
Deposits and balances from banks and other financial institutions	**203,553**	**0.44**	200,291	0.36	197,300	0.77
Current, savings and time deposits	**2,263,622**	**0.30**	2,199,251	0.40	1,964,093	0.94
Subordinated liabilities	**–**	**–**	–	–	2,920	5.50
Other interest-bearing liabilities	**18,178**	**1.09**	21,452	1.03	36,464	1.40
Total interest-bearing liabilities	**2,485,353**	**0.32**	2,420,994	0.40	2,200,777	0.94
Shareholders' funds* and other non interest-bearing deposits and liabilities	**1,099,286**	**–**	1,045,270	–	921,199	–
Total liabilities	**3,584,639**	**0.22**	3,466,264	0.28	3,121,976	0.66

* Shareholders' funds represent capital and reserves attributable to the equity holders of the Company.

Net Fee and Commission Income

HK$'m	**Half-year ended 30 June 2021**	Half-year ended 31 December 2020	Half-year ended 30 June 2020
Securities brokerage	**2,189**	2,000	1,567
Loan commissions	**1,793**	921	1,389
Credit card business	**996**	935	924
Insurance	**734**	559	713
Funds distribution	**518**	455	442
Payment services	**374**	382	358
Trust and custody services	**374**	367	322
Bills commissions	**321**	313	278
Safe deposit box	**151**	153	153
Currency exchange	**58**	69	157
Others	**608**	563	495
Fee and commission income	**8,116**	6,717	6,798
Fee and commission expense	**(1,459)**	(1,310)	(1,363)
Net fee and commission income	**6,657**	5,407	5,435

In the first half of 2021, net fee and commission income amounted to HK$6,657 million, up HK$1,222 million or 22.5% year-on-year. This was mainly attributable to growth in commission income from securities brokerage, funds distribution and insurance of 39.7%, 17.2% and 2.9% respectively amid satisfactory market investor sentiment in early 2021. Commission income from credit card business and bills increased by 7.8% and 15.5% respectively and loan commissions was up 29.1%, as retail activity and import and export trade regained momentum following an improvement in the pandemic situation and the resumption of economic activity in Hong Kong. The Group recorded a 16.1% increase in income from trust and custody services by taking advantage of business opportunities arising from mutual market access schemes, further enriching its custodian products, optimising customer experience and strengthening cooperation with other onshore and offshore custodian banks. Commission income from payment services rose by 4.5% as a result of the Group's efforts to accelerate the development of its cash management business and satisfactory growth in its cash pooling business. However, commission income from currency exchange dropped 63.1% as global demand for banknotes remained at a relatively low level owing to the pandemic. Fee and commission expenses increased, mainly due to an increase in securities brokerage and credit card related expenses as a result of higher business volume.

Compared with the second half of 2020, net fee and commission income increased by HK$1,250 million or 23.1%, which was mainly attributable to growth in commission income from securities brokerage, insurance and funds distribution amid satisfactory market investor sentiment in the beginning of the year. Commission income from loans, credit card, bills and trust and custody services also increased as the economy gradually recovered. Meanwhile, fee and commission expenses increased mainly due to higher insurance and credit card related expenses.

Net Trading Gain

HK$'m	**Half-year ended 30 June 2021**	Half-year ended 31 December 2020	Half-year ended 30 June 2020
Foreign exchange and foreign exchange products	**2,164**	2,419	2,863
Interest rate instruments and items under fair value hedge	**(48)**	168	(787)
Equity and credit derivative instruments	**135**	146	4
Commodities	**103**	111	250
Total net trading gain	**2,354**	2,844	2,330

In the first half of 2021, the Group's net trading gain amounted to HK$2,354 million, an increase of HK$24 million or 1.0% year-on-year. If the funding income or cost of foreign currency swap contracts were excluded, net trading gain would have amounted to HK$2,042 million, an increase of 77.9% year-on-year, primarily due to a year-on-year decrease in net trading loss from interest rate instruments and items under fair value hedge. This decrease in net trading loss was a result of changes in the mark-to-market value of certain debt securities investments and interest rate instruments caused by market interest rate movements. Net trading gain from equity and credit derivative instruments increased by HK$131 million year-on-year, with higher income realised from equity-linked products amid satisfactory market investor sentiment earlier in the year. The decrease in net trading gain from commodities was primarily due to a lower gain from bullion transactions.

Compared with the second half of 2020, net trading gain decreased by HK$490 million or 17.2%. If the funding income or cost of foreign currency swap contracts were excluded, net trading gain would have decreased by 14.6% from the second half of last year. This was mainly attributable to changes in the mark-to-market value of certain debt securities investments and interest rate instruments caused by market interest rate movements.

Net Gain on Other Financial Instruments at Fair Value through Profit or Loss

HK$'m	**Half-year ended 30 June 2021**	Half-year ended 31 December 2020	Half-year ended 30 June 2020
Net gain on other financial instruments at fair value through profit or loss	**96**	1,757	202

Net gain on other financial instruments at fair value through profit or loss decreased by HK$106 million or 52.5% year-on-year. The change was mainly due to a drop in the mark-to-market gain of debt securities related investments of the Group's banking business, which more than offset the positive impact from the increase in the mark-to-market gain of BOC Life's debt securities related investments. The mark-to-market changes of BOC Life's abovementioned debt securities investments were offset by changes to its policy reserves, also attributable to market interest rate movements, which were reflected in changes in net insurance benefits and claims as well as movements in liabilities.

Compared with the second half of 2020, the change in net gain was mainly attributable to the mark-to-market changes of BOC Life's debt securities related investments caused by market interest rate movements.

Operating Expenses

HK$'m	**Half-year ended 30 June 2021**	Half-year ended 31 December 2020	Half-year ended 30 June 2020
Staff costs	**4,389**	5,077	4,384
Premises and equipment expenses (excluding depreciation and amortisation)	**579**	685	550
Depreciation and amortisation	**1,515**	1,511	1,529
Other operating expenses	**1,099**	1,485	1,126
Operating expenses	**7,582**	8,758	7,589

	At 30 June 2021	At 31 December 2020	At 30 June 2020
Staff headcount measured in full-time equivalents	**14,462**	14,915	14,867

Operating expenses amounted to HK$7,582 million, a decrease of HK$7 million or 0.1% year-on-year. The Group strengthened its cost management while continuing to invest in its strategic priorities. At the same time, the Group actively put its low-carbon and green operation initiatives into practice, optimised business flows and refined internal management, so as to enhance cost efficiency. The cost to income ratio was 30.27%, remaining at a satisfactory level relative to industry peers.

Staff costs increased by 0.1% year-on-year, remaining relatively stable.

Premises and equipment expenses increased by 5.3%, mainly due to increased investments in information technology.

Depreciation and amortisation decreased by 0.9%, mainly due to decreased depreciation charges on right-of-use assets and premises, which more than offset the increased depreciation charges on information technology.

Other operating expenses decreased by 2.4%, mainly due to a decrease in security, business travel, printing and cleaning expenses.

Compared with the second half of 2020, operating expenses decreased by HK$1,176 million or 13.4%. The decrease was mainly due to lower staff costs and a decrease in business promotion, security and maintenance expenses.

Net Charge of Impairment Allowances on Advances and Other Accounts

HK$'m	**Half-year ended 30 June 2021**	Half-year ended 31 December 2020	Half-year ended 30 June 2020
Stage 1	**40**	(67)	(831)
Stage 2	**(504)**	(682)	(72)
Stage 3	**(733)**	(429)	(408)
Net charge of impairment allowances on advances and other accounts	**(1,197)**	(1,178)	(1,311)

In the first half of 2021, the Group's net charge of impairment allowances on advances and other accounts amounted to HK$1,197 million, a decrease of HK$114 million or 8.7% year-on-year. Impairment allowances at Stage 1 recorded a net reversal of HK$40 million, as compared to a net charge of HK$831 million in the same period last year. The parameter values of the Group's expected credit loss model improved in the first half of 2021. The change was also attributable to there being a higher base for comparison as a result of impairment allowances made in the same period last year, when the Group prudently updated the parameter values of its expected credit loss model to take into consideration the outbreak of the COVID-19 pandemic, which led to increased uncertainty in the macroeconomic outlook. Impairment allowances at Stage 2 recorded a net charge of HK$504 million, an increase of HK$432 million, mainly to take into consideration the potential risks arising from clients under the pandemic relief measures. Impairment allowances at Stage 3 amounted to a net charge of HK$733 million, an increase of HK$325 million year-on-year, owing to new impairment allowances being made in response to the downgrading of certain corporate advances. The annualised credit cost of advances to customers was 0.15%, down 3 basis points from the same period of the previous year. As at 30 June 2021, the Group's total loan impairment allowances as a percentage of advances to customers was 0.58%, or 0.64% after adjusting for the impact of its IPO financing.

Compared with the second half of 2020, the Group's net charge of impairment allowances on advances and other accounts increased by HK$19 million, or 1.6%, mainly reflecting the downgrading of certain corporate advances.

ANALYSIS OF ASSETS AND LIABILITIES

The table below summarises the Group's asset composition. Please refer to Note 22 to the Interim Financial Information for the contract/notional amounts and fair values of the Group's derivative financial instruments. Please refer to Note 37 to the Interim Financial Information for the contractual amounts of each significant class of contingent liability and commitment and the aggregate credit risk-weighted amounts.

Asset Composition

	At 30 June 2021		At 31 December 2020	
HK$'m, except percentages	**Amount**	**% of total**	Amount	% of total
Cash and balances and placements with banks and other financial institutions	**546,237**	**14.2**	463,711	14.0
Hong Kong SAR Government certificates of indebtedness	**197,650**	**5.2**	189,550	5.7
Securities investments and other debt instruments[1]	**1,054,051**	**27.5**	940,699	28.3
Advances and other accounts	**1,747,852**	**45.6**	1,500,416	45.2
Fixed assets and investment properties	**64,675**	**1.7**	65,296	2.0
Other assets[2]	**224,405**	**5.8**	161,309	4.8
Total assets	**3,834,870**	**100.0**	3,320,981	100.0

1. Securities investments and other debt instruments comprise investment in securities and financial assets at fair value through profit or loss.
2. Other assets comprise derivative financial instruments, interests in associates and joint ventures, current tax assets and deferred tax assets.

As at 30 June 2021, significant IPO funds had been received by the Group as an IPO main receiving bank, causing temporary distortion to the balance of its assets and liabilities. Adjustments have been made to affected items in this Analysis of Assets and Liabilities to enable analysis on a comparable basis.

As at 30 June 2021, the total assets of the Group amounted to HK$3,834,870 million, an increase of HK$513,889 million or 15.5% from the end of last year. Cash and balances and placements with banks and other financial institutions increased by HK$82,526 million or 17.8%, mainly due to an increase in balances with banks. Securities investments and other debt instruments increased by HK$113,352 million or 12.0%, as the Group increased investments in government-related bonds and bills. Advances and other accounts rose by HK$247,436 million or 16.5%, with advances to customers growing by HK$247,089 million or 16.5% and trade bills increasing by HK$1,920 million or 19.5%. Other assets increased by HK$63,096 million or 39.1%, as the result of an increase in accounts receivable of clearing items due to IPO-related activities. Adjusted for the impact of IPO-related activities, the Group's total assets would have been HK$3,447,481 million, an increase of 3.8% compared with the prior year-end.

Advances to Customers

HK$'m, except percentages	At 30 June 2021 Amount	At 30 June 2021 % of total	At 31 December 2020 Amount	At 31 December 2020 % of total
Loans for use in Hong Kong	**1,212,638**	**69.5**	991,457	66.2
Industrial, commercial and financial	**743,681**	**42.6**	539,633	36.0
Individuals	**468,957**	**26.9**	451,824	30.2
Trade financing	**83,850**	**4.8**	66,497	4.4
Loans for use outside Hong Kong	**448,465**	**25.7**	439,910	29.4
Total advances to customers	**1,744,953**	**100.0**	1,497,864	100.0

In the first half of 2021, the Group captured opportunities from its three major markets of Hong Kong, the Greater Bay Area and Southeast Asia. It closely focused on customer needs to provide them with tailor-made services and credit facilities. The Group enhanced its services to local corporate and personal clients in order to meet loan demand of key customers. It made concerted efforts to develop its mortgage business by strengthening cooperation with real estate intermediaries in order to enhance and promote the property search and mortgage services available on its Home Expert mobile application, which enabled it to successfully capture mortgage volume. At the same time, the Group enhanced collaboration with BOC and reinforced marketing efforts to new clients and new industries. It also pushed forward integrated regional development, with its Southeast Asian entities achieving steady business growth. During the period, the Group remained the top mandated arranger in the Hong Kong and Macao syndicated loan market and held the top market position in terms of the total number of new mortgage loans in Hong Kong. In the first half of 2021, advances to customers grew by HK$247,089 million, or 16.5%, to HK$1,744,953 million, partly driven by IPO financing. Adjusted for IPO-related impact, advances to customers would have increased by HK$91,902 million, or 6.1%.

Loans for use in Hong Kong grew by HK$221,181 million or 22.3%. Adjusted for the impact of IPO financing, loans for use in Hong Kong would have increased by 6.7%.

- Lending to the industrial, commercial and financial sectors increased by HK$204,048 million or 37.8%, reflecting loan growth in property development, property investment, information technology, financial concerns, wholesale and retail trade, and IPO financing. Adjusted for the impact of IPO financing, lending to the industrial, commercial and financial sectors would have increased by 9.1%.

- Lending to individuals increased by HK$17,133 million, or 3.8%, mainly driven by growth in residential mortgage loans.

Trade financing increased by HK$17,353 million or 26.1%. Loans for use outside Hong Kong grew by HK$8,555 million or 1.9%, mainly driven by growth in loans for use in the Chinese mainland.

Loan Quality

HK$'m, except percentages	**At 30 June 2021**	At 31 December 2020
Advances to customers	**1,744,953**	1,497,864
Classified or impaired loan ratio	**0.29%**	0.27%
Total impairment allowances	**10,200**	9,172
Total impairment allowances as a percentage of advances to customers	**0.58%**	0.61%
Residential mortgage loans[1] – delinquency and rescheduled loan ratio[2]	**0.02%**	0.01%
Card advances – delinquency ratio[2]	**0.27%**	0.23%

	Half-year ended 30 June 2021	Half-year ended 30 June 2020
Card advances – charge-off ratio[3]	**1.58%**	1.88%

1. Residential mortgage loans exclude those under the Home Ownership Scheme and other government-sponsored home purchasing schemes.
2. The delinquency ratio is the ratio of the total amount of overdue advances (more than three months) to total outstanding advances.
3. The charge-off ratio is the ratio of total write-offs made during the period to average card receivables during the period.

During the reporting period, certain industries continued to face challenges in light of the volatile COVID-19 pandemic situation and heightened uncertainty regarding the global economic recovery. The Group proactively strengthened its risk management systems for all types of risks and continuously enhanced its risk management so as to maintain solid asset quality. As at 30 June 2021, classified or impaired loans amounted to HK$5,077 million, an increase of HK$1,083 million from the end of last year. The classified or impaired loan ratio was 0.29%, up 0.02 percentage points from the end of last year. Adjusted for the impact of IPO financing, the classified or impaired loan ratio would have been 0.32%. The Group's total loan impairment allowances as a percentage of advances to customers was 0.58%, or 0.64% if adjusted for the impact of IPO financing. The combined delinquency and rescheduled loan ratio of residential mortgage loans was 0.02%. The charge-off ratio of card advances for the first half of 2021 was 1.58%, down 0.30 percentage points year-on-year.

Deposits from Customers

HK$'m, except percentages	At 30 June 2021 Amount	% of total	At 31 December 2020 Amount	% of total
Demand deposits and current accounts	**776,366**	**28.9**	310,226	14.2
Savings deposits	**1,190,778**	**44.4**	1,149,035	52.6
Time, call and notice deposits	**715,296**	**26.7**	724,448	33.2
Total deposits from customers	**2,682,440**	**100.0**	2,183,709	100.0

In the first half of 2021, the Group actively expanded its mid- to high-end customer base and strengthened cooperation with government authorities, large corporates and central banks by sustaining its e-payment, payroll, cash management and IPO receiving businesses, with a view to growing the scale of its current accounts and savings deposits. At the same time, the Group improved its deposit structure by capitalising on the consumer's preferences for wealth management, insurance, equities securities and structured products in the low interest rate environment, leading to solid growth in current accounts and savings deposits from both personal and corporate clients. As of 30 June 2021, total deposits from customers amounted to HK$2,682,440 million, an increase of HK$498,731 million or 22.8% from the end of last year, partly driven by IPO-related funds. Adjusted for IPO-related impact, total deposits from customers would have increased by 5.2%, with demand deposits and current accounts increasing by 25.8%, savings deposits increasing by 3.6%, and time, call and notice deposits decreasing by 1.3%. Adjusted for the impact of IPO-related funds, the CASA ratio was 68.8%, an increase of 2.0 percentage points from the end of last year.

Capital and Reserves Attributable to Equity Holders of the Company

HK$'m	At 30 June 2021	At 31 December 2020
Share capital	**52,864**	52,864
Premises revaluation reserve	**38,401**	38,048
Reserve for fair value changes	**202**	1,726
Regulatory reserve	**6,665**	4,780
Translation reserve	**(867)**	(503)
Retained earnings	**195,702**	193,387
Reserves	**240,103**	237,438
Capital and reserves attributable to equity holders of the Company	**292,967**	290,302

Capital and reserves attributable to equity holders of the Company amounted to HK$292,967 million as at 30 June 2021, an increase of HK$2,665 million or 0.9% from the end of last year. The premises revaluation reserve increased by 0.9%. Reserve for fair value changes decreased, mainly due to the impact of market interest rate movements on debt instruments at fair value through other comprehensive income. The regulatory reserve increased by 39.4%, mainly driven by growth in advances to customers. Retained earnings rose by 1.2% from the end of last year.

Capital Ratio

HK$'m, except percentages	**At 30 June 2021**	At 31 December 2020
Consolidated capital after deductions		
Common Equity Tier 1 capital	**225,551**	216,542
Additional Tier 1 capital	**23,476**	23,476
Tier 1 capital	**249,027**	240,018
Tier 2 capital	**30,786**	29,558
Total capital	**279,813**	269,576
Total risk-weighted assets	**1,413,929**	1,220,000
Common Equity Tier 1 capital ratio	**15.95%**	17.75%
Tier 1 capital ratio	**17.61%**	19.67%
Total capital ratio	**19.79%**	22.10%

As at 30 June 2021, Common Equity Tier 1 ("CET1") capital and Tier 1 capital had increased by 4.2% and 3.8% respectively from the end of last year, which was primarily attributable to profits recorded for the first half of 2021. Total capital increased by 3.8%, while total risk-weighted assets ("RWAs") increased by 15.9%, mainly driven by growth in advances to customers, partially attributable to the temporary impact from IPO financing. The CET1 capital ratio was 15.95% and Tier 1 capital ratio was 17.61%, while total capital ratio stood at 19.79%. The Group properly managed its capital plan on a continuous basis so as to maintain an appropriate capital level to support its sustainable business development while balancing returns to equity holders.

Liquidity Coverage Ratio and Net Stable Funding Ratio

	2021	2020
Average value of liquidity coverage ratio		
First quarter	**134.09%**	150.45%
Second quarter	**134.20%**	131.38%
Third quarter	**N/A**	130.98%
Fourth quarter	**N/A**	132.76%

	2021	2020
Quarter-end value of net stable funding ratio		
First quarter	**124.90%**	116.60%
Second quarter	**118.50%**	117.49%
Third quarter	**N/A**	115.30%
Fourth quarter	**N/A**	125.31%

The Group's liquidity position remained sound, with the average value of its liquidity coverage ratio and the quarter-end value of its net stable funding ratio exceeding the regulatory requirement for the first two quarters of 2021. Due to IPO-related activities, its net stable funding ratio experienced a temporary drop at the end of the second quarter of 2021.

BUSINESS REVIEW

In the first half of 2021, the Group remained committed to its strategic goal of building a first-class regional banking group. It actively responded to arduous market challenges and strengthened the execution of its strategic plans. By steadily pushing forward its business priorities, the Group achieved satisfactory performance in its core businesses, with major financial indicators remaining at solid levels. It fostered environmental, social and governance ("ESG") concepts and actively promoted green finance so as to advance sustainable and high-quality development. The Group captured market opportunities and continued to develop its core market in Hong Kong. It also deepened cross-border collaboration and proactively supported the construction of the Guangdong-Hong Kong-Macao Greater Bay Area. It accelerated the development of its regional footprint in Southeast Asia and leveraged its regional synergies. At the same time, the Group pushed forward digital transformation while remaining customer-centric, and cautiously responded to the impacts of the pandemic so as to mitigate various risks.

Business Segment Performance

Profit before Taxation by Business Segment

	Half-year ended 30 June 2021		Half-year ended 30 June 2020	
HK$'m, except percentages	**Amount**	**% of total**	Amount	% of total
Personal Banking	**3,652**	**22.6**	4,352	22.6
Corporate Banking	**6,713**	**41.6**	7,158	37.2
Treasury	**5,141**	**31.8**	7,217	37.6
Insurance	**513**	**3.2**	392	2.0
Others	**134**	**0.8**	105	0.6
Total profit before taxation	**16,153**	**100.0**	19,224	100.0

Note: For additional segmental information, see Note 40 to the Interim Financial Information.

PERSONAL BANKING

Financial Results

Personal Banking achieved a profit before tax of HK$3,652 million in the first half of 2021, a decrease of HK$700 million or 16.1% year-on-year, mainly due to a decrease in net interest income, which was partially offset by an increase in net fee and commission income and a decrease in net charge of impairment allowances.

Net interest income decreased by 40.6%, mainly due to a narrowing of the deposit spread as a result of falling market interest rates, although this was partially offset by an improvement in the loan spread as well as growth in the average balance of deposits and loans. Net fee and commission income increased by 24.3%, mainly owing to a satisfactory increase in commission income from securities brokerage amid solid market investor sentiment in early 2021, which resulted in higher transaction volumes in the stock market, combined with a rise in commission income from insurance, loans and funds distribution. Net charge of impairment allowances amounted to HK$67 million, down HK$563 million year-on-year, due to a decrease in impairment allowances caused by an improvement in the parameter values of the Group's expected credit loss model.

Business Operations

Giving full play to online and offline competitive advantages and optimising the segmented customer service model

The Group continued to promote its premium Private Wealth service to high-end customers, offering diversified services including investment, wealth management, legacy planning, cross-border property purchase and luxury lifestyle benefits. Through an exclusive team of wealth management experts, the Group launched the RM Chat service for Private Wealth customers. This enabled customers to communicate with the service team instantly and carry out their banking transactions via mobile banking in a safe and convenient manner. The Group further expanded its customer base, with the number of Private Wealth customers as at the end of June 2021 recording double-digit percentage growth from the end of last year. In support of the 100% Personal Loan Guarantee Scheme introduced by HKMC Insurance Limited, the Group provided customers with a simple and convenient online personal loan application channel, with the aim of alleviating the cash-flow pressures of customers who were unemployed during the pandemic and assisting customers to tide over their economic difficulties. The Group used innovative technologies to build home purchase ecology scenarios and introduced a pioneering end-to-end seamless home purchasing service for its customers. By cooperating with large real estate agencies and mortgage intermediaries, it was able to provide property market indices as well as first and second-hand property information through its Home Expert mobile application, providing a solution to customer pain points in property search, property valuation, mortgage assessment and application using different home purchase platforms. In the first half of 2021, the monthly average number of online mortgage applications was more than 2.6 times last year's monthly average. The Group remained committed to developing the local customer segment so as to strengthen its core product advantages, thus achieving steady growth in deposits from customers and maintaining its top market position in terms of total number of new residential mortgage loans. During the period, BOCHK was awarded Excellent Brand of Property Purchase Planning – Banking Solutions and Excellent Brand of Securities Services – Banking in the Hong Kong Leaders' Choice 2021 organised by Metro Finance.

The Group's private banking business maintained steady growth. By enhancing its collaboration with other business units within the Group, it was able to strengthen its value chain for serving high-net-worth clients and family offices with professional private banking services. In line with the development of green finance and ESG standards, the Group enriched its exclusive private banking products and services in investment and wealth management. In addition, it continued to promote digitalisation, strengthen its talent pool and foster team-building so as to enhance its service capabilities for clients in Hong Kong, the Greater Bay Area and Southeast Asia. As at the end of June 2021, private banking's assets under management had increased 12.3% from the end of last year.

Accelerating transformation into a digital bank by promoting scenario-based product applications

The Group closely monitored changes in the market during the pandemic and accelerated its development into a digital bank. It actively responded to the HKSAR Government's efforts to build a smart city and pioneered the pilot adoption of "iAM Smart" mobile application, which enables mobile account opening using digital identity authentication. By allowing mobile account opening forms to be filled out automatically, the application spares customers the time and hassle involved in facial recognition and manual input of personal data, providing a new digitalised experience. The Group fully supported the HKSAR Government's issuance of iBonds by facilitating subscription via mobile banking, internet banking, investment hotlines and all of its branches so as to better meet the needs of different customers, over 80% of which subscribed through its electronic channels. To meet rapid growth in customer demand for online transactions, the Group launched "PlanAhead", a one-stop wealth planning service, on its mobile banking platform. This provided customers with professional asset allocation information and a variety of product solutions to assist them in planning for their financial goals at all stages of life, thus promoting the digital development of the Group's wealth management products. The Group remained committed to enhancing customer experience in e-payment services by further integrating mobile payments into customers' lifestyle scenario ecosystems. It strengthened cooperation with large property management companies in order to incorporate in-app payment options for property management fees in their estate management mobile applications, providing customers a brand new, safe payment method. In the first half of 2021, the total number of transactions conducted through mobile banking increased by over 60% year-on-year, while online transaction volumes of key investment products such as equity securities, IPO subscription and bonds also recorded notable year-on-year growth. During the period, BOCHK won the Bancassurer of the Year – Excellence Award in the Financial Institution Awards 2021 organised by *Bloomberg Businessweek (Chinese Edition)* and was recognised as Hong Kong's Best Digital Bank 2021 by *Asiamoney*.

Accelerating the development of digital branches and enhancing service channel capabilities

The Group strived to strengthen the core advantages arising from having Hong Kong's largest retail branch network and optimised its district service coverage strategy. By digitalising its branch services, the Group actively migrated high-frequency counter transactions to intelligent devices and was able to enhance branch productivity. The Group accelerated the construction and enhancement of its intelligent customer service capabilities through the "Bonnie" chatbot and online chat services, in order to facilitate the transition of customer services from manual to online. In the first half of 2021, the usage rate of the Group's intelligent chatbot increased by over 50% as compared to the same period last year, further enhancing service efficiency and accelerating customer service channel migration. In addition, it enhanced the service capabilities of its contact centre through artificial intelligence solutions such as speech analysis and word analysis, so as to further expand the application of its next-generation customer service platform.

Promoting integrated development and collaboration in the Greater Bay Area and strengthening the foundation for future regional business growth

The Group strengthened regional collaboration and optimised customer referral services among Hong Kong, the Greater Bay Area and Southeast Asia by enhancing process efficiency and improving customer experience, with the aim of providing integrated cross-border financial services. It actively responded to financial policies for the Guangdong-Hong Kong-Macao Greater Bay Area and continuously optimised its cross-border service experience in order to meet the spending, lifestyle and investment needs of Hong Kong residents in the Greater Bay Area. During the period, the Group constantly enhanced the customer experience of its Greater Bay Area Account Opening Service with the aim of fulfiling the day-to-day personal finance requirements of Hong Kong residents who travel, work or live in the Greater Bay Area. As at the end of June 2021, the accumulated number of related accounts opened stood at over 140,000, representing double-digit percentage growth from the end of last year. To support Hong Kong customers' demand for property purchase in the Greater Bay Area, the Group continuously improved its Greater Bay Area Personal Loan mortgage service, enhancing the customer experience across the full process of its payment and mortgage services. It actively made full preparations for the implementation of the cross-border "Wealth Management Connect" service so as to capture market opportunities in the Greater Bay Area. It enriched its regional wealth management services, with BOC Malaysia offering a number of new funds and bonds, and BOC Thailand and the Brunei Branch both introducing RMB cross-border salary direct remittance services. The Phnom Penh Branch launched the Wealth Management service, enabling preliminary service solutions for mutual brand recognition and common promotional offers sharing for Wealth Management across Hong Kong, Malaysia and Cambodia. The Group deepened its "mobile first" strategy by pushing forward mobile banking projects in the Brunei Branch and Jakarta Branch.

CORPORATE BANKING

Financial Results

Corporate Banking achieved a profit before tax of HK$6,713 million, a decrease of HK$445 million or 6.2% year-on-year, mainly due to a decrease in net interest income, which was partially offset by an increase in net fee and commission income and a decrease in net charge of impairment allowances.

Net interest income decreased by 17.3%, mainly due to a narrowing of the deposit spread as a result of falling market interest rates, although this was partially offset by growth in the average balance of deposits and loans. Net fee and commission income increased by 24.3%, mainly due to an increase in commission income from loans, trust and custody services, bills and payment services. Net charge of impairment allowances amounted to HK$346 million, down HK$215 million year-on-year, owing to a decrease in impairment allowances caused by an improvement in the parameter values of the Group's expected credit loss model.

Business Operations

Enhancing integrated service capabilities and steadily advancing corporate banking business development

The Group continued to push forward the deepening of its business transformation in response to changes in industry and customer needs, and strengthened its support to a number of key projects in Hong Kong, the Greater Bay Area and Southeast Asia with the aim of providing integrated and professional financial solutions. During the period, the Group developed key customers and projects by meeting customer needs and enhancing marketing efforts in new clients and new industries. It remained the top mandated arranger in the Hong Kong and Macao syndicated loan market and successfully underwrote a number of bond issues with significant market influence. It also maintained its market leadership as an IPO main receiving bank in terms of the number of listings and total subscription funds on the Main Board of the Stock Exchange of Hong Kong. Business relationships with central banks, international financial organisations and sovereign agencies in various countries have been further consolidated. In addition, it further advanced its digital transformation and scenario construction by enhancing its technological innovation and application capabilities with a view to increasing business penetration and providing more convenient payment channels for customers through strengthened payment collection participation with government entities, transport, education, and the retail and catering sectors. Adhering to its sustainable development philosophy, the Group met clients' financial demands for low-carbon business transformation by constantly refining its range of sustainable development banking products. It issued "sustainable and smart living" themed green bonds, so as to support projects related to renewable energy, green building and clean transportation. The Group acted as a green finance advisor and helped clients to formulate green finance frameworks, with the aim of encouraging corporates to establish business models for sustainable development. BOCHK once again received the Excellent Brand of Green and Sustainable Corporate Banking Services in the Hong Kong Leaders' Choice 2021 organised by Metro Finance.

Proactively fulfiling corporate social responsibilities and advancing the development of inclusive finance

The Group continuously strengthened its support to local commercial and SME customers in Hong Kong by providing integrated and digitalised financial services with the aim of meeting customers' needs. It actively promoted different financial relief measures, including the implementation of guarantee products under the SME Financing Guarantee Scheme and enhancement measures to the Special 100% Loan Guarantee, both of which were launched by HKMC Insurance Limited. The Group also fully supported the Pre-approved Principal Payment Holiday Scheme launched by the HKMA, in order to help SMEs address business challenges arising from the adverse economic environment and navigate difficult times alongside them. In addition, the Group joined hands with the Hong Kong Quality Assurance Agency ("HKQAA") to promote the development of green finance, becoming the first bank to cooperate with the HKQAA's Green Loan e-Assessment platform and launching the SME Green Financing Incentive Scheme to encourage clients' business transformation towards sustainable development. The Group received the Best SME's Partner Award from the Hong Kong General Chamber of Small and Medium Business for the 14th consecutive year, demonstrating the esteem attributed to its high-quality SME services by the market.

Giving full play to synergistic advantages and expediting the development of regional business

The Group stepped up its efforts to develop its regional business and worked with its Southeast Asian entities to maintain stable business growth. In order to enhance the regional synergies of its Southeast Asian entities, the Group reinforced its integrated marketing efforts to actively expand large corporate customers in the region. To bolster cooperation in the Asia-Pacific region, BOCHK capitalised on its position as BOC's Asia-Pacific syndicated loan centre and arranged syndicated loans for large businesses in the Southeast Asian region, thus continuously strengthening its market influence. The Group continued to launch integrated marketing efforts for its corporate banking business, successfully expanding its key customer base and generating more business opportunities in large-scale customer deposits and loans, letters of credit and letters of guarantee. During the period, over 40 different products were successfully launched in the Southeast Asian region and the intelligent Global Transaction Banking ("iGTB") platform continued to be promoted among its Southeast Asian entities, paving the way for the enhancement of corporate banking's customer service capabilities in the region. Meanwhile, BOC Malaysia successfully conducted the first electronic letter of credit presentation for its clients in Malaysia via a blockchain electronic platform, while the Brunei Branch successfully launched a USD payroll service for its clients. In support of further business expansion in the Guangdong-Hong Kong-Macao Greater Bay Area, the Group actively responded to financial policies related to the Greater Bay Area and captured emerging market opportunities by continuing to deepen its cooperation with BOC's entities in the region under BOC's Greater Bay Area collaboration mechanism, thus giving full play to its synergistic advantages and meeting the cross-border financial needs of corporate clients by offering diversified products and services. In this way, it supported the development of key customers in the Chinese mainland, including those in the new infrastructure and biomedicine sectors, and contributed to financial interconnectivity within the Greater Bay Area. In addition, it supported the development of technological innovation industry by providing special marketing campaign and bespoke financial services to the Hong Kong Science Park, as well as strengthening cooperation with universities and scientific research institutions.

Constantly optimising products and services and consolidating its strong franchise in RMB business

The Group continued to improve the range of its corporate banking products and services in Hong Kong, the Greater Bay Area and Southeast Asia. It seized opportunities from RMB internationalisation, further strengthened RMB business cooperation with key customers, and maintained its traditional franchise in RMB cross-border business. The Group promoted the expansion of its key businesses, including cash management and trade financing, and shored up its market-leading position in cash pooling business and promoted Hong Kong as an ideal hub for corporate treasury activities. In recognition of its excellent and highly professional services, BOCHK was awarded Hong Kong Domestic Cash Management Bank of the Year for the eighth consecutive year, Hong Kong Domestic Trade Finance Bank of the Year for the third consecutive year and Hong Kong Domestic RMB Internationalisation Initiative of the Year for the first time by *Asian Banking & Finance*. BOCHK also received two awards from *The Asian Banker*, namely Best Transaction Bank in Hong Kong for the fourth time and Best Cash Management Bank in Hong Kong for the seventh time.

Continuously and steadily developing custody and trustee businesses

The Group captured opportunities from the Chinese government's orderly two-way opening of capital accounts and financial markets, as well as the continuous optimisation and refinement of mutual market access measures, and leveraged its strong franchise in cross-border businesses in order to constantly deepen customer relationships with institutional and corporate clients. It extended business support to innovative cross-border exchange traded funds ("ETF") in the Chinese mainland as well as new "Yulan bond" debt products. Meanwhile, it further enriched its corporate trust and agency product suite, made use of technology to improve the client journey and operations, and strengthened its collaboration in overseas markets with master custodians from the Chinese mainland. During the reporting period, the Group reached new heights in total assets under custody from institutional and corporate clients, monthly securities settlement volumes and Bond Connect custody assets, while its total number of Bond Connect clients continued to rank among the global top tier. As at the end of June 2021, total assets under custody of the Group amounted to HK$1,456.2 billion, an increase of 6.2% compared to the previous year-end.

BOCI-Prudential Trustee Limited ("BOCI-Prudential Trustee") continued in developing well-diversified income streams by successfully being appointed for several ORSO schemes by a number of large-scale institutional clients. It continued to invest in and enhance its electronic retirement scheme administration and asset servicing platforms and leveraged major social media platforms to facilitate its digital transformation. During the period, BOCI-Prudential Trustee launched five unit trust funds and was successfully appointed by a regional asset management company as the trustee, fund administrator, custodian, and registrar of its new Hang Seng Index ETF. At the end of June 2021, MPF assets under its trusteeship recorded a growth of 5.9% from the end of last year, continuing its top-five ranking in the MPF market. In addition, BOCI-Prudential Trustee received a number of fund awards at the 2021 MPF Awards organised by independent rating agency MPF Ratings, as well as at the Lipper Fund Awards Hong Kong 2021 organised by *Refinitiv*. My Choice MPF Scheme was also recognised as the Best MPF Scheme at the 2021 Morningstar Fund Awards Hong Kong, organised by Morningstar Investment Management Asia Limited.

TREASURY

Financial Results

Treasury recorded a profit before tax of HK$5,141 million, a decrease of HK$2,076 million or 28.8% year-on-year. This was primarily attributable to a lower net gain on other financial assets and a decrease in net trading gain of 22.4%, which were partially offset by an increase of 8.7% in net interest income owing to a drop in funding costs. The decrease in net trading gain was mainly due to a decrease in net gain from foreign currency swap contracts which was partially offset by changes in the mark-to-market value of certain debt securities investments and interest rate instruments caused by market interest rate movements.

Business Operations

Continuously enhancing service capabilities and steadily promoting regional development

The Group responded to market developments and continuously enhanced its service capabilities and the business efficiency of its online trading transactions, thus achieving satisfactory growth in client business. By actively capturing business opportunities, it promoted RMB product innovation and expanded RMB business scale. Committed to embracing technological innovation as a growth driver, the Group promoted the electronic, automatic and digital upgrade and transformation of its trading businesses, with income from corporate and institutional customers conducting online transactions in the first half of 2021 rising 14% year-on-year. In its Southeast Asian entities, the Group continuously deepened management by business units, refined the building blocks and optimised its management systems in order to uplift the service capabilities and market competitiveness of its Southeast Asian business and steadily push forward its regional development. During the period, the Group actively participated in the market quotation business of the Shanghai Gold Exchange, receiving the exchange's Outstanding International Member Award 2020.

Leveraging its strong franchise in RMB clearing services to expand the depth and breadth of its cross-border business

The Manila Branch officially launched its RMB clearing bank service on 16 January 2021 to provide local participating banks with services such as RMB remittance and RMB banknotes, thus facilitating the use of RMB in the Philippines. In addition, the Manila Branch successfully introduced a two-way RMB remittance service for its clients, becoming the Group's first Southeast Asian entity to provide such a service. BOC Malaysia was granted direct participant qualification by the Cross-border Interbank Payment System ("CIPS") and successfully conducted its first RMB cross-currency swap business. The FXall Digital Transaction Platform was successfully rolled out in BOC Thailand and BOC Malaysia, with the Group completing the first RMB/local currency quotation transaction with major peers in the region. The Jakarta Branch's business volume of RMB salary direct remittance recorded year-on-year growth of 82%, maintaining its leading position among offshore entities. The Brunei Branch successfully conducted its first RMB bond investment business for clients. In addition, BOCHK received the Extraordinary Participant in Cross-border Payment and Clearing award in the CIPS Participants General Meeting organised by CIPS Co., Ltd. in recognition of its contribution towards the development of cross-border RMB business.

Adhering to a proactive but risk-aware investment strategy and optimising the portfolio mix of banking book investments

The Group closely monitored worldwide interest rate adjustments and continued to take a cautious approach to managing its banking book investments. It planned ahead and actively sought fixed income investment opportunities to enhance returns while remaining alert to risk. In the first half of 2021, the Group actively responded to interest rate changes with a view to achieving balanced growth in assets and liabilities while continuously enhancing the portfolio mix of its banking book investments.

Steady development in asset management business with client value creation

Despite the uncertain COVID-19 pandemic situation and volatile capital markets in the first half of the year, BOCHK Asset Management Limited ("BOCHK AM") adhered to its prudent development strategy and leveraged its professional investment service capabilities in order to achieve continuous client value creation and steady growth in assets under management. During the reporting period, BOCHK AM launched the BOCHK All Weather ESG Multi-Asset Fund, its first ESG fund authorised by Hong Kong's Securities and Futures Commission, which allows investors to capture ESG-related investment opportunities. At the same time, it actively developed its cross-border business, with the BOCHK All Weather Asian Bond Fund being approved by the China Securities Regulatory Commission for distribution in the Chinese mainland, making it BOCHK AM's third fund to participate in the Mainland-Hong Kong Mutual Recognition of Funds scheme. In recognition of its professional expertise, BOCHK AM was awarded Best RMB Manager and Best CNY Bonds, Offshore (5 Years) in the 2021 Best of the Best Awards by *Asia Asset Management*.

INSURANCE

Financial Results

In the first half of 2021, the Group's insurance segment proactively optimised its business and product structure, and recorded standard new premiums of HK$6,286 million, up 15.5% year-on-year. Profit before tax was up 30.9% year-on-year to HK$513 million, which was mainly attributable to an increase in investment income.

Business Operations

Giving full play to its competitive edges in online and offline services to meet diversified customer needs

In view of the COVID-19 pandemic's ongoing impact on insurance product sales, BOC Life constantly strengthened its business development via online channels. The standard new premium conducted via electronic channels increased by over 25% year-on-year. Implementing its strategy of diversifying distribution channels, BOC Life maintained its leading market position in bancassurance sales and proactively expanded its tied agency and broker channels. To push forward the transformation of its product mix, BOC Life launched the Forever Fortune Whole Life Insurance Plan to promote the development of products with high value and coverage. It reinforced its reputation as an expert in retirement wealth management and maintained its leading position in the Qualifying Deferred Annuity Policy market. Meanwhile, with both online and offline product sales, RMB standard new premium increased by over 65% year-on-year and accounting for over 40% of overall standard new premiums. During the period, BOC Life partnered with a top smartwatch brand to launch the Biological Age Model reward application, which aims to enhance client interactions by providing preventive healthcare management services and exclusive healthcare-related offers to policyholders.

Committed to promoting ESG initiatives for sustainable development

BOC Life is committed to supporting ESG initiatives and has invested in the 30-year green bonds issued by the HKSAR Government earlier this year. To promote social responsibility, BOC Life partnered with St. James' Settlement to launch the "Brave the Storm Together, Guard Our Green Future" CSR programme, through which it would donate HK$1,000 for every policy successfully issued under its Forever Wellbeing Whole Life Plan to support "Green Ladies & Green Little", a social enterprise of St. James' Settlement. BOC Life partnered with EC Healthcare to offer 10,000 free COVID-19 pre-vaccination health assessments to Hong Kong residents to help them prepare before receiving vaccines, with the aim of boosting Hong Kong's overall vaccination rates and fulfiling its social responsibility at the same time.

Maintaining market leadership in life insurance and winning recognition for high-quality services

BOC Life maintained its leading position in Hong Kong's life insurance business and remained the market leader in RMB insurance and sales conducted via electronic channels. In recognition of its service quality and professional image, BOC Life received a number of local and regional awards including Outstanding Insurance Company at the High Flyers Awards 2020 organised by *Hong Kong Business*, and Outstanding Life Insurance Mobile Application Platform in the Fintech Awards 2020 organised by *etnet*.

SOUTHEAST ASIAN BUSINESS

The Group continued to pursue integrated regional development with the aim of building its Southeast Asian entities into mainstream foreign banks in their local markets. Over the past 30 years, China and the ASEAN have established a very close economic and trading relationship, becoming each other's largest trading partner. The implementation of the Regional Comprehensive Economic Partnership ("RCEP") will bring new momentum to economic and trade relations and investment cooperation between Southeast Asia and its regional partners. The ongoing development of the Belt and Road project, new economic areas and the expansion of the middle-class population in Southeast Asia have also enabled China and Southeast Asian countries to capture new opportunities brought about by technological revolution and industrial transformation, with cooperation emerging in the areas of smart cities, 5G, artificial intelligence, e-commerce, big data and blockchain. The Group's overall development prospect in the Southeast Asian region remains solid, while the attractiveness of RMB assets to overseas investors continues to open up new growth opportunities for the Group's regional business.

Enhancing regional business network layout and constantly optimising management of Southeast Asian entities

Following the successful operational launch of the Yangon Branch, the Group's Hanoi Representative Office also commenced business in Vietnam on 8 June. The new office has further enhanced the Group's network coverage in Vietnam, strengthened services to customers in the northern part of the country, and worked with Ho Chi Minh City Branch to achieve integrated business development from the south to the north of Vietnam. The Group deepened the implementation of its regional management model and continued to optimise management of its Southeast Asian entities. It continued to implement a "One Bank, One Strategy" differentiated operating model to promote the proactive development of each entity. With the aim of further enhancing regional operations, BOCHK made earnest efforts to centralise regional management and expedited the partial transfer of its regional operations to the Regional Operation Centre in Nanning.

The Group's Southeast Asian entities* recorded steady business growth. As at the end of June 2021, deposits from customers and advances to customers amounted to HK$62,647 million and HK$55,494 million respectively, up 9.4% and 2.6% from the end of last year. Amid falling market interest rates, net operating income before impairment allowances stood at HK$1,289 million, a drop of 1.2% year-on-year. As at the end of June 2021, the non-performing loan ratio was 1.75%, down 0.15 percentage points from the end of 2020.

* Referring to the nine Southeast Asian entities, including BOC Thailand, BOC Malaysia, Ho Chi Minh City Branch, Manila Branch, Jakarta Branch, Phnom Penh Branch, Vientiane Branch, Brunei Branch and Yangon Branch. Net operating income before impairment allowances and the balances of deposits from customers and advances to customers represent the consolidated data which were prepared in accordance with Hong Kong Financial Reporting Standards. The non-performing loan ratio was calculated in accordance with local regulatory requirements.

Adhering to stringent risk management so as to continuously strengthen regional risk management capabilities

The Group continued to strengthen its regional risk management during the pandemic, adhered to the implementation of the "Three Lines of Defence" control mechanism, and provided professional guidance and differentiated management to its Southeast Asian entities. By closely monitoring the development of the pandemic and regularly assessing its impact on the regional market and its Southeast Asian entities, the Group adopted proactive counter-measures in order to ensure robust risk management and maintain safe operations. It further strengthened its Southeast Asian entities' credit risk management, undertaking regular reviews of each entity's credit portfolio, continuous ad-hoc risk reviews and non-performing loan collection and recovery in order to ensure stable asset quality. In addition, for certain categories of common customers or specified portfolios within the Group, an internal ratings-based approach was adopted to calculate the capital requirement for credit risk. The Group completed reviews on the delegation of credit approval authority to its Southeast Asian entities, achieving a balance between business development and risk management. Moreover, it continuously enhanced its Southeast Asian entities' risk management capabilities in market risk, interest rate risk and liquidity risk so as to ensure compliance with local regulatory requirements. The Group also made use of risk systems and technical expertise to further strengthen its risk control capabilities in all aspects, including compliance, anti-money laundering and anti-fraud.

DIGITAL TRANSFORMATION DEVELOPMENT

The Group continued to closely monitor market trends and remain customer-centric with the aim of comprehensively deepening its digital transformation and advancing the scenario-based application of innovative fintech. The acceleration of its digital transformation processes saw its front, middle and back offices undergo profound changes. Drawing on digital, intelligent and ecological support, the Group remained committed to strengthening infrastructure construction, deepening scenario-based open banking services, enhancing digitally-empowered businesses and optimising innovation mechanisms, thus laying a solid foundation for its long-term development.

Strengthening infrastructure construction to provide high-quality and efficient digital banking services

The Group enhanced its mobile banking functionalities by providing customers with a new user interface design and improving its mobile security token function. Optical character recognition and facial recognition technologies were introduced to strengthen eKYC customer identity authentication, while artificial intelligence was introduced to perform real-time decision making and promote personalised banking services and information to different customers based on their behaviour. The Group remained committed to promoting intelligent, self-service and mobile services at its branches, and successfully launched the iService desktop version in five branches to enhance customers' self-service capabilities, which was well received by customers. The Group made functional enhancements to its iGTB platform and extended its coverage across the Southeast Asian region. A network risk monitoring system was introduced in order to continuously review network security levels, identify potential security risks arising from different aspects using safety score cards, and provide appropriate reinforcement recommendations. The Group also continued to construct its cloud system and deepened transformation related to information technology modernisation. During the period, the implementation of the Group's cloud platform, micro-service application architecture and technology operations model laid a solid foundation to support the future continuous delivery of rapid, reliable and scalable new application services, enable different business lines to quickly react to market changes, customer service requirements and open bank development, and advance the Group's digital transformation development strategy in all aspects.

Deepening scenario-based construction to achieve seamless banking services

The Group actively promoted open banking services across different kinds of payment scenarios related to government services, charity and education, transportation and consumer spending, in order to extend the coverage of its financial services. It facilitated cross-sector cooperation to accelerate fintech development and opened up access to more than 90 open Application Programme Interface ("API"). The Group joined hands with three major real estate agencies and mortgage intermediaries to launch an online real-time property valuation service and mortgage application service via open API. As at the end of June 2021, the online real-time property valuation service through open API had been used over 5.5 million times since launch. The Group also cooperated with two stock quotation platforms to offer its customers cross-platform mobile banking trading services for Hong Kong stocks, US stocks and A shares. The Group helped its customers to achieve their financial goals while making use of social media interactive marketing to promote its services to the mass market. It also supported the HKSAR Government's poverty alleviation measures by creating new online application channels for the Community Care Fund and assisting the government in accepting applications and distributing subsidies. The Group actively facilitated cooperation between schools and enterprises to encourage supply and demand matching, so as to provide full support to the digital transformation of the education sector in Hong Kong. BoC Bill continued to provide the market's most comprehensive digital billing and fund collection solutions, supporting the use of traditional bank cards, QR codes, FPS and Octopus card services. The Group was able to provide fund collection solutions to a number of charitable organisations following the launch of the BoC Bill e-Donation Platform. BoC Bill also provided a new integrated collection service for the HKSAR Government's 12,000 parking meters, supporting e-payment options through credit cards and QR codes, as well as remote extension of parking time using HKeMeter. As at the end of June 2021, the total number of merchants that have installed BoC Bill increased by 7.9% from the end of last year. The Group supported the HKSAR Government's HK$5,000 Consumption Voucher Scheme by providing a one-stop solution via BoC Bill for all kinds of merchants to capture business opportunities from the scheme, thus expanding its merchant coverage. Meanwhile, the geographical coverage of BoC Pay customers extended from the city centre to the outlying islands in every part of Hong Kong. BoC Pay is now used in Hong Kong's two main convenience stores, three major supermarkets and most well-known fast food chains, as well as for bill payments for services rendered by the government and public entities, and property management fees. As at the end of June 2021, the total number of BoC Pay users recorded a significant increase of 17.6% from the end of last year, while related transaction volumes achieved growth of 68.8% compared to the same period of the previous year. The number of customers with FPS accounts as at the end of June 2021 increased by 20.1% compared to the end of last year.

Enhancing digitally-empowered businesses to improve customer experience

The Group is committed to continually reshaping and refining its business processes with a view to enhancing operational efficiency, improving customer experience and strengthening product innovation. Robotic process automation ("RPA") technology was further extended within the Group's middle and back office operations, which effectively automated operational procedures, reduced processing times and enhanced employee productivity, improving related processing efficiency by 50%. The Group deepened digital empowerment by strengthening its cooperation with third-party platforms, introducing real-time shipping data to facilitate trade financing, and accelerating the digital transformation of its supply chain. It launched an electronic mortgage application platform so as to reduce the use of paper mortgage application forms. In addition, it gradually accelerated the automation of its operating procedures by enabling customer application data to be directly transmitted to its approval system, with over 90% of mortgage applications covered as at the end of June 2021. The Group also enhanced the operational efficiency of its property valuation process through the application of blockchain, which covered 99% of its total property valuations during the reporting period. The Group also implemented intelligent risk control applications including real-time risk control on different platforms such as personal internet banking and mobile banking, BoC Pay, BoC Bill, ATM transactions and remittance.

RISK MANAGEMENT

Banking Group

Overview

The Group believes that sound risk management is crucial to the success of any organisation. In its daily operation, the Group attaches a high degree of importance to risk management and emphasises that a balance must be struck between risk control and business development. The principal types of risk inherent in the Group's businesses are credit risk, market risk, interest rate risk, liquidity risk, operational risk, reputation risk, legal and compliance risk, and strategic risk. The Group's risk management objective is to enhance shareholder value by maintaining risk exposures within acceptable limits. The Group has a defined risk appetite statement approved by the Board, which is an expression of the types and level of risk that the Group is willing to take in a controllable way in order to achieve its business goals and to meet the expectations of its stakeholders.

Risk management governance structure

The Group's risk management governance structure is designed to cover all business processes and to ensure various risks are properly managed and controlled in the course of conducting business. The Group has a robust risk management organisational structure with a comprehensive set of policies and procedures to identify, measure, monitor and control various risks that may arise. These risk management policies and procedures are regularly reviewed and updated to reflect changes in markets and business strategies. Various groups of risk takers assume their respective responsibilities for risk management.

The Board of Directors, representing the interests of shareholders, is the highest decision-making authority of the Group and has the ultimate responsibility for risk management. The Board, with the assistance of its committees, has the primary responsibility for the formulation of risk management strategies, risk appetite and risk culture and ensuring that the Group has an effective risk management system to implement these strategies.

The Risk Committee ("RMC"), a standing committee established by the Board of Directors, is responsible for overseeing the Group's various types of risks, approving Level I risk management policies and monitoring their implementation, and approving significant or high risk exposures or transactions. The Audit Committee assists the Board in fulfilling its role in overseeing the internal control system.

The Chief Executive ("CE") is responsible for managing the Group's various types of risks, and approving material risk exposures or transactions within his authority delegated by the Board of Directors. The Deputy Chief Executives ("DCEs") assist the CE in fulfilling his responsibilities on the day-to-day management of various types of risk, and are responsible for approving material risk exposures or transactions within their authorities delegated by the CE. The Chief Risk Officer ("CRO") together with the Deputy Chief Executive in charge of legal, compliance, operational risk and anti-money laundering assist the CE in fulfilling his responsibilities on day-to-day management of various types of risks and internal control; responsible for initiating new risk management strategies, projects and measures in response to regulatory changes that will enable the Group to better monitor and manage any risks that may arise from time to time from new businesses, products and changes in the operating environment and responsible for reviewing material risk exposures or transactions within the delegated authority. In accordance with the principle of setting the hierarchy of risk management policies approved by the Board, senior management is also responsible for approving the detailed risk management policies of their areas.

Various units of the Group have their respective risk management responsibilities. Business units act as the first line of defence while risk management units, which are independent from the business units, are responsible for the day-to-day management of different kinds of risks. Risk management units have the primary responsibility for drafting, reviewing and updating various risk management policies and procedures.

The Group's principal banking subsidiaries are subjected to risk management policies that are consistent with those of the Group. Moreover, the Group's non-banking subsidiaries, such as BOC Life, are subject to the Group's risk management requirements. These subsidiaries are required to formulate their respective risk management policies based on the characteristics of their own industries, perform daily risk management responsibilities and report to BOCHK on a regular basis. Risk management units of BOCHK monitor the risk management status of these subsidiaries.

Credit risk management

Credit risk is the risk of loss that a customer or counterparty is unable to or unwilling to meet its contractual obligations. Credit risk exists in the trading book and banking book, as well as from on- and off-balance sheet transactions of the Group. It arises principally from lending, trade finance and treasury businesses. The Chief Credit Officer, who reports directly to the CRO, takes charge of credit risk management and is also responsible for the control of credit risk exposures of subsidiaries in line with the credit risk management principles and requirements set by the Group.

For advances, different credit approval and control procedures are adopted according to the level of risk associated with the customer, counterparty or transaction. The Credit Risk Assessment Committee, comprising experts from credit and other functions, is responsible for making an independent assessment of material credit applications which require the approval of DCEs or above. Credit applications for non-retail exposures are independently reviewed and objectively assessed by risk management units. Obligor ratings (in terms of probability of default) and facility ratings (in terms of loss given default) are assigned to these portfolios to support credit approval. Retail internal rating systems are deployed in the risk assessment of retail credit transactions, including small business loans under retail exposures, residential mortgage loans, personal loans and credit cards, etc. Loan grades, obligor and facility ratings as well as loss estimates (if applicable) are used to support credit approval.

The Group also uses loan grades, obligor ratings and loss estimates (if applicable) to support credit monitoring, reporting and analysis of credit risk information. For non-retail exposures, more frequent rating review and closer monitoring are required for higher-risk customers. For retail exposures, monthly updated internal ratings and loss estimates are used for credit monitoring on a portfolio basis. More comprehensive review is required for obligors being identified under high-risk pools. The Group adopts loan grading criteria which divide credit assets into five categories with reference to the HKMA's guidelines. The Risk Management Department ("RMD") provides regular credit management information reports and ad hoc reports to the Management Committee ("MC"), RMC and Board of Directors to facilitate their continuous monitoring of credit risk. In addition, the Group identifies credit concentration risk by industry, geography, customer or counterparty. The Group monitors changes to every counterparties credit risk, quality of the credit portfolio and credit risk concentrations, and reports regularly to the Group's Management.

The Group employs an internal master rating scale that can be mapped to Standard & Poor's external credit ratings. The structure of internal master rating scale is in compliance with the requirement of the Banking (Capital) Rules under the Hong Kong Banking Ordinance.

For investments in debt securities, the obligor ratings or external credit ratings and credit limits setting on customer/security issuer basis are used for managing credit risk associated with the investment. For derivatives, the Group sets customer limits to manage the credit risk involved and follows the same approval and control processes as applied for advances. On-going monitoring and stop-loss procedures are established.

For impairment assessment, an impairment model is introduced in compliance with HKFRS 9, it requires the recognition of Expected Credit Loss ("ECL") for financial instrument held at amortised cost and fair value through other comprehensive income. Under HKFRS 9, ECL is assessed in three stages and the financial assets, loan commitments and financial guarantees are classified in one of the three stages.

Stage 1: if the financial instruments are not credit-impaired during origination and their credit risk has not increased significantly since origination, and the impairment allowance is measured at an amount up to 12-month ECL;

Stage 2: if the financial instruments are not credit-impaired during origination but their credit risk has increased significantly since origination, and the impairment allowance is measured at an amount equal to the lifetime ECL;

Stage 3: if the financial instruments are credit-impaired and their future cash flows of that financial instruments are adversely affected by one or more events, and the impairment allowance is also measured at an amount equal to the lifetime ECL.

The Group has established the significant credit deterioration criteria framework to determine the stage of the financial instrument. The framework incorporates both quantitative and qualitative assessment, taking into account of factors such as number of days past due, change in Internal Ratings-Based ("IRB") rating, low credit risk threshold and the watchlist.

The Group leverages the parameters implemented under Basel II IRB models and internal models where feasible and available to assess ECL. For the portfolios without models, all other reasonable and supportable information such as historical information, relevant loss experience or proxies are utilised. The measurement of ECL is the product of the financial instrument's probability of default ("PD"), loss given default ("LGD") and exposure at default ("EAD") discounted at the effective interest rate to the reporting date.

ECL is measured at an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes, the time value of money and reasonable and supportable information about past events, current conditions and forecasts of future economic conditions. The Group adopts three economic scenarios in the ECL measurement to meet the requirements of HKFRS 9. The "Baseline" scenario represents a most likely outcome and the other two scenarios, referred to as "Good" scenario and "Bad" scenario, represent less likely outcomes which are more optimistic or more pessimistic compared to Baseline scenario.

The Baseline scenario is prepared by our Economics & Strategic Planning Department. Historical data, economic trend, external forecast from governmental and non-governmental organisation, etc. are also used as benchmarks to ensure the scenario is reasonable and supportable. For the Good and Bad scenarios, the Group makes reference to the historical macroeconomics data.

The macroeconomic factors in the major countries/regions the Group operates such as Gross Domestic Product growth, Consumer Price Index, Property Price Index and Unemployment Rate are applied in the economic scenarios. These macroeconomic factors are considered to be important to the Group's ECL in statistical analysis and business opinion.

The probability weight assigned for each scenario reflects the Group's view for the economic environment, which implements the Group's prudent and consistent credit strategy of ensuring the adequacy of impairment allowance. A higher probability weight is assigned to the Baseline scenario to reflect the most likely outcome and a lower probability weight is assigned to the Good and Bad scenarios to reflect the less likely outcomes. As of June 2021, the probability weight of the Group's Baseline scenario is higher than the sum of probability weight of Good and Bad scenarios.

One of essential macroeconomic factors used by the Group to assess ECL:

Macroeconomic Factor	Scenario Weighted Value
2021 Hong Kong GDP Growth	3.05%

The calculation of ECL is affected by macroeconomic factors and economic scenarios. If more pessimistic macroeconomic factors are applied in ECL assessment or a higher probability weight is assigned to the Bad scenario, it would resulted in an increase in ECL. The Group reviews the macroeconomic factors used in the ECL model and the probability weight of economic scenarios on a quarterly basis according to the established mechanism.

RMC is responsible for approving ECL methodology and the Management is responsible for the ECL model implementation. Credit Risk Management is responsible for the maintenance of ECL methodology including models review and parameters update on a regular basis. Independent Model Validation Team is responsible for the annual validation of ECL models. If there is any change in ECL methodology, the Group will follow the proper approval process.

Market risk management

Market risk refers to the risk of loss arising from movements in the value of foreign exchange, interest rate, equity and commodity positions held by the Group due to the volatility of financial market price (foreign exchange rate, interest rate, equity price, commodity price). The Group adopts a moderate market risk appetite to achieve a balance between risk and return. The Group's objective in managing market risk is to secure healthy growth of the treasury business, by the effective management of potential market risk in the Group's business, according to the Group's overall risk appetite and strategy of the treasury business on the basis of a well-established risk management regime and related management measures.

In accordance with the Group's corporate governance principles in respect of risk management, the Board and RMC, senior management and functional departments/units perform their duties and responsibilities to manage the Group's market risk. The RMD is responsible for the Group's market risk management, assisting senior management to perform their day-to-day duties, independently monitoring the market risk profile and compliance of management policies and limits of the Group and BOCHK, and ensuring that the aggregate and individual market risks are within acceptable levels.

The Group's market risk management covers BOCHK and its subsidiaries. The Group establishes market risk management policies to regulate BOCHK's and its subsidiaries' market risk management; meanwhile, the Group sets up the Group's VaR and stress test limits, which are allocated and monitored across the Group according to the business requirements and risk tolerance levels. In line with the requirements set in the Group's policy, the subsidiaries formulate the detailed policies and procedures and are responsible for managing their daily market risk.

The Group sets up market risk indicators and limits to identify, measure, monitor and control market risk. Major risk indicators and limits include but are not limited to VaR, Stop Loss, Open Position, Stress Testing and Sensitivity Analysis (Basis Point Value, Greeks), etc. To meet management's requirements, major risk indicators and limits are classified into three levels, and are approved by the RMC, senior management or the head of the respective business unit respectively. The treasury business units of BOCHK and subsidiaries (as for Group Limit) are required to conduct their business within approved market risk indicators and limits.

The Group uses the VaR to measure and report general market risks to the RMC and senior management on a periodic basis. The Group adopts a uniformed VaR calculation model, using a historical simulation approach and two years of historical market data, to calculate the VaR of the Group and its subsidiaries over a one-day holding period with a 99% confidence level, and sets up the VaR limit of the Group and its subsidiaries.

The Group adopts back-testing to measure the accuracy of VaR model results. The back-testing compares the calculated VaR figure of market risk positions of each business day with the actual and hypothetical gains or losses arising from those positions on the next business day. Generally speaking, the number of back-testing exceptions in a rolling 12-month period will not exceed four times, given a 99% confidence level.

Interest rate risk management

Interest rate risk means the risks to a bank's earnings and economic value arising from movements in interest rate and term structures of the bank's asset and liability positions. The Group's interest rate risk exposures are mainly structural. The major types of interest rate risk from structural positions are:

- Gap risk: mismatches in the maturity or repricing periods of assets and liabilities that may affect net interest income and economic value;

- Basis risk: different pricing basis for different transactions resulting that the yield on assets and cost of liabilities may change by different amounts within the same repricing period; and

- Option risk: exercise of the options embedded in assets, liabilities or off-balance sheet items that can cause a change in the cash flows of assets and liabilities.

The Group's risk management framework applies also to interest rate risk management. The Asset and Liability Management Committee ("ALCO") exercises its oversight of interest rate risk in accordance with the "BOCHK Group Banking Book Interest Rate Risk Management Policy" approved by the RMC. The RMD is responsible for the Group's interest rate risk management. With the cooperation of the Financial Management Department and Investment Management, etc., RMD assists the ALCO to perform day-to-day interest rate risk management. Its roles include, but are not limited to, the formulation of management policies, selection of methodologies, setting of risk indicators and limits, assessment of target balance sheet, monitoring of the compliance with policies and limits, and submission of interest rate risk management reports to senior management and the RMC, etc.

The Group sets out interest rate risk indicators and limits to identify, measure, monitor and control interest rate risk on a daily basis. The indicators and limits include, but are not limited to, repricing gap limits, basis risk, duration, price value of a basis point ("PVBP"), net interest income sensitivity ratio ("NII"), economic value sensitivity ratio ("EVE"), etc. The indicators and limits are classified into different levels, which are approved by the CFO, CRO, ALCO and RMC accordingly. Risk-taking business units are required to conduct their business within the boundary of the interest rate risk limits. Before launching a new product or business in the banking book, the relevant departments are required to go through a risk assessment process, which includes the assessment of underlying interest rate risk and consideration of the adequacy of current risk monitoring mechanism. Any material impact on interest rate risk noted during the risk assessment process will be submitted to the RMC for approval.

NII and EVE assess the impact of interest rate movement on the Group's net interest income and capital base. They are the Group's key interest rate risk indicators. The former assesses the impact of interest rate movement on net interest income as a percentage to the projected net interest income for the year. The latter assesses the impact of interest rate movement on economic value (i.e. the net present value of cash flows of assets, liabilities and off-balance sheet items discounted using the market interest rate) as a percentage to the latest Tier 1 capital. Limits are set by the RMC on these two indicators to monitor and control the Group's banking book interest rate risk.

The Group uses scenario analyses and stress tests to assess the banking book interest rate risk that the Group would face under adverse circumstances. Scenario analyses and stress tests are also used to assess the impact on net interest income and economic value arising from the optionality of savings deposits, the prepayment of mortgage loans and the prepayment of debt securities with embedded options.

Liquidity risk management

Liquidity risk is the risk that banks may not be able to obtain sufficient and timely funding at a reasonable cost to meet their obligations as they fall due. The Group maintains a sound liquidity risk appetite to provide stable, reliable and adequate sources of cash to meet liquidity needs under normal circumstances and stressed scenarios.

In accordance with the Group's corporate governance principles in respect of risk management, the Board and the RMC, senior management and functional departments/units perform their duties and responsibilities to manage the Group's liquidity risk. The RMC is the decision-making authority of liquidity risk management, and assumes the ultimate responsibility of liquidity risk management. As authorised by the RMC, ALCO exercises its oversight of liquidity risk and ensures the daily operations of the Group are in accordance with the risk appetite and policies as set by the RMC. The RMD is responsible for the Group's liquidity risk management. It cooperates with the Financial Management Department and Investment Management, etc. to assist the ALCO to perform liquidity management functions according to their specific responsibilities.

The Group's liquidity risk management objective is to effectively manage the liquidity of on- and off-balance sheet items with a reasonable cost based on the liquidity risk appetite to achieve sound operation and sustainable profitability. Deposits from customers are the Group's primary source of funds. To ensure stable and sufficient sources of funds are in place, the Group actively attracts new deposits, keeps the core deposit and obtains supplementary funding from the interbank market and by issuing bills in the capital market. According to different term maturities and the results of funding needs estimated from stressed scenarios, the Group adjusts its asset structure (including loans, bonds investment, interbank placement, etc.) to maintain sufficient liquid assets which provides adequate funds in support of normal business needs and ensure its ability to raise funds at a reasonable cost to serve external claims in case of emergency. The Group is committed to diversify the sources, tenors and use of funding to avoid excessive concentration of assets and liabilities; and prevent triggering liquidity risk due to the break of funding strand resulting from over-concentration of sources and use of funding in a particular area where problems occur. In order to manage such risk, the Group sets concentration limits on collateral pools and sources of funding such as Tier 1 high-quality readily liquefiable assets to total high-quality readily liquefiable assets ratio, top ten depositors ratio and large depositors ratio. Whenever necessary, the Group could improve the liquidity position by taking mitigation actions including, but not limited to obtaining funding through interbank borrowings or repos in the money market, selling bonds in the secondary market or retaining existing and attracting new customer deposits. Apart from increasing the funding, the Group would maintain good communication with the counterparties, the parent bank and the regulators to enhance mutual confidence.

The Group has established intra-group liquidity risk management guidelines to manage the liquidity funding among different entities within the Group, and to restrict their reliance of funding on each other. The Group also pays attention to manage liquidity risk created by off-balance sheet activities, such as loan commitments, derivatives, options and other complex structured products. The Group has an overall liquidity risk management strategy to cover the liquidity management of foreign currency assets and liabilities, collateral, intra-day liquidity, intra-group liquidity, the liquidity risk arising from other risks, etc., and has formulated corresponding contingency plan.

The Group established liquidity risk management indicators and limits to identify, measure, monitor and control liquidity risk on a daily basis. These indicators and limits include, but are not limited to liquidity coverage ratio ("LCR"), net stable funding ratio ("NSFR"), loan-to-deposit ratio, Maximum Cumulative Cash Outflow ("MCO") and liquidity cushion. The Group applies a cash flow analysis to assess the Group's liquidity condition under normal conditions and also performs a liquidity stress test (including institution specific, general market crisis and combined crisis) and other methods at least on a monthly basis to assess the Group's capability to withstand various severe liquidity crises. Also, relevant management information systems such as the Assets and Liabilities Management System and the Basel Liquidity Ratio Management System are developed to provide data and to prepare for regular management reports to facilitate liquidity risk management duties.

In accordance with the requirements of Supervisory Policy Manual LM-2 "Sound Systems and controls for Liquidity Risk Management" issued by the HKMA, the Group has implemented a behaviour model and assumptions of cash flow analysis and stress test to enhance the Group's cash flow analysis under both normal and stressed conditions. In cash flow analysis under normal circumstances, assumptions have been made relating to on-balance sheet items (such as deposits from customers) and off-balance sheet items (such as loan commitments). According to various characteristics of the assets, liabilities and off-balance sheet items, the Group forecasts the future cash flow based on the contractual maturity date and the assumptions of customer behaviour and balance sheet changes. The Group establishes the MCO indicator which predicts the future 30 days maximum cumulative net cash outflow in normal situations based on the above assumptions, to assess if the Group has sufficient financing capacity to meet the cash flow gap in order to achieve the objective of continuing operations.

In the liquidity stress test, institution specific, general market crisis and combined crisis scenarios have been set up, a combined crisis scenario is a combination of institution specific and general market crisis to assess the Group's capability to withstand a more severe liquidity crisis, with a more stringent set of assumptions being adopted. Stress test assumptions include the run-off rate of retail, wholesale and interbank deposits; the drawdown rate of loan commitments and trade-related contingent liabilities; the delinquency ratio and rollover rate of customer loans; and haircut of interbank placement and marketable securities. As at 30 June 2021, the Group was able to maintain a net cash inflow under the three stressed scenarios, indicating the Group has the ability to meet financing needs under stressed conditions. In addition, the Group has a policy in place to maintain a liquidity cushion which includes high quality or comparable quality marketable securities issued or guaranteed by sovereigns, central banks, public sector entities or multilateral development banks with 0% or 20% risk weight or marketable securities issued by non-financial corporate with a corresponding external credit rating of A- or above to ensure funding needs even under stressed scenarios. A contingency plan is being established which details the conditions to trigger the plan based on stress test results and early warning indicators, the action plans and relevant procedures and responsibility of relevant departments.

The Group, being classified as a category 1 authorised institution by the HKMA, is required to calculate the LCR and NSFR on a consolidated basis in accordance with the Banking (Liquidity) Rules. The Group is required to maintain a LCR and NSFR not less than 100% in 2021.

In certain derivative contracts, the counterparties have the right to request from the Group additional collateral if they have concerns about the Group's creditworthiness.

The Group's liquidity risk management also covers new products or business developments. Before launching a new product or business, the relevant departments are required to go through a risk assessment process, which includes the assessment of underlying liquidity risk and consideration of the adequacy of the current risk management mechanism. Any material impact on liquidity risk noted during the risk assessment process will be reported to the RMC for approval.

The Group has established a set of uniform liquidity risk management policies which serve as standards and guidance to all the Group's members for liquidity risk management. On the basis of the Group's uniform policies, each of the subsidiaries develops its own liquidity management policies according to its own characteristics, and assumes its own liquidity risk management responsibility. Subsidiaries are required to report their respective liquidity positions with relevant liquidity ratios on a regular basis to the RMD of BOCHK, which consolidates this information and evaluates group-wide liquidity risk to ensure relevant requirements are satisfied.

Operational risk management

Operational risk is the risk of loss resulting from inadequate or failed internal process, people and system, or from external events. The risk is inherent in every aspect of business operations and confronted by the Group in its day-to-day operational activities.

The Group has implemented the "Three Lines of Defence" for its operational risk management. All departments or functional units as the first line of defence are the first parties responsible for operational risk management, and carry out the duties and functions of self risk control in the process of business operation through self assessment and self enhancement. The Legal & Compliance and Operational Risk Management Department ("LCO"), together with certain specialist functional units in relation to operational risk management within the Group, including the Human Resources Department, Corporate Services Department, Financial Crime Compliance Department, Financial Management Department, Treasury and General Accounting & Accounting Policy Department (collectively known as "specialist functional units"), are the second line of defence. They are responsible for assessing and monitoring the operational risk conditions in the first line of defence, and providing them with guidance. The LCO, being independent from the business units, is responsible for assisting the Management in managing the Group's operational risk, including the establishment and review of the operational risk management policy and framework, designing the operational risk management tools and reporting mechanism, and assessing and reporting the overall operational risk position to the Management and RMC. Specialist functional units are required to carry out their managerial duties of the second line of defence with respect to some specific aspects of operational risk and its related issues. Besides taking charge of operational risk management in their own units, these units are also required to provide other units with professional advice/training in respect of certain operational risk categories and to lead the group-wide operational risk management. Group Audit is the third line of defence which provides independent assessment to the effectiveness and adequacy of the operational risk management framework and is required to conduct periodic audit of the operational risk management activities of various departments or functional units within the Group regarding their compliance and effectiveness and to put forward recommendations for remedial actions.

The Group has put in place an effective internal control process which requires the establishment of policies and control procedures for all the key activities. The Group adheres to the fundamental principle of proper segregation of duties and authorisation. The Group adopts various operational risk management tools or methodologies such as key risk indicators, self-assessment, operational risk events reporting and review to identify, assess, monitor and control the risks inherent in business activities and products, as well as purchase of insurance to mitigate unforeseeable operational risks. Business continuity plans are established to support business operations in the event of an emergency or disaster. Adequate backup facilities are maintained and periodic drills are conducted.

Reputation risk management

Reputation risk is the risk that negative publicity about the Group's business practices, whether genuine or not, will cause a potential decline in the customer base, or lead to costly litigation or revenue decrease. Reputation risk is inherent in other types of risk and every aspect of business operation and covers a wide spectrum of issues.

In order to mitigate reputation risk, the Group has formulated and duly followed its Reputation Risk Management Policy. The policy aims to identify and prevent reputation risk proactively at an early stage when an incident occurs. Since reputation risk is often caused by various types of operational and strategic issues that negatively impact the trust and perception of the Group, all operational and key risks identified are assessed through the established Key Control Self-Assessment framework, including risk assessment tools, to evaluate the severity of their impact on the Group, including the damage to reputation.

In addition, the Group has put in place a comprehensive framework to continuously monitor reputation risk incidents in the financial industry. This continuous monitoring enables the Group to effectively manage, control and mitigate any potential adverse impact from an incident. The Group also adopts robust disclosure practices to keep our stakeholders informed at all times, which helps build confidence in the Group and establish a strong public image.

Legal and compliance risk management

Legal risk is the risk that unenforceable contracts, lawsuits or adverse judgments may disrupt or otherwise negatively affect the operations or financial conditions of the Group. Compliance risk is the risk of legal or regulatory sanctions, financial losses or losses in reputation the Group may suffer as a result of its failure to comply with applicable laws and regulations. Legal and compliance risks are managed by the LCO, while the risks related to money laundering, terrorist financing, fraud, bribery and corruption are independently managed and monitored by the Financial Crime Compliance Department ("FCC"). Both LCO and FCC report directly to the DCE. As part of the Group's corporate governance framework, the policies for the management of legal and compliance risks, and money laundering, terrorist financing and financial crime compliance risks are approved by the RMC as delegated by the Board.

Strategic risk management

Strategic risk generally refers to the risks that may cause current or future negative impacts on the earnings, or capital or reputation or market position of the Group because of poor business decisions, improper implementation of strategies and inadequacies in the response to the changing market condition. The Board reviews and approves the strategic risk management policy. Key strategic issues have to be fully evaluated and properly endorsed by the senior management and the Board.

The Group regularly reviews its business strategies to cope with the latest market situation and developments.

Capital management

The major objective of the Group's capital management is to maximise total shareholders' return while maintaining a capital adequacy position in relation to the Group's overall risk profile. ALCO periodically reviews the Group's capital structure and adjusts the capital mix where appropriate to maintain an optimal balance among risk, return and capital adequacy.

To comply with the HKMA's requirements as stated in the Supervisory Policy Manual "Supervisory Review Process", the Group adopts the internal capital adequacy assessment process ("ICAAP") and reviews it annually. Based on the HKMA's guidelines on Pillar II, ICAAP has been initiated to assess the extra capital needed to cover the material risks not captured or not adequately captured under Pillar I, and therefore minimum Common Equity Tier 1 capital ratio, minimum Tier 1 capital ratio and minimum Total capital ratio are determined. Meanwhile, operating ranges for the aforementioned capital ratios have also been established which enable the flexibility for future business growth and efficiency of capital utilisation.

Stress testing

The Group supplements the analysis of various types of risks with stress testing. Stress testing is a risk management tool for estimating risk exposures under stressed conditions arising from extreme but plausible market or macroeconomic movements. These tests are conducted on a regular basis by the Group's various risk management units in accordance with the principles stated in the Supervisory Policy Manual "Stress-testing" published by the HKMA. The ALCO monitors the results against the key risk limits approved by the RMC. The Financial Management Department reports the combined stress test results of the Group to the Board and RMC regularly.

BOC Life

BOC Life's principal business underwrites long-term insurance business in life and annuity (Class A), linked long term business (Class C), permanent health (Class D), retirement scheme management category I (Class G) and retirement scheme management category III (Class I) in Hong Kong. Major types of risk arising from BOC Life's insurance business are insurance risk, interest rate risk, liquidity risk, credit risk, equity price risk and currency risk. BOC Life closely monitors these risks and reports to its Risk Management Committee on a regular basis. Furthermore, BOC Life has regular communication with the Group to ensure consistency with the Group's risk management strategy. The key risks of its insurance business and related risk control process are as follows:

Insurance risk management

BOC Life is in the business of insuring against the risk of mortality, morbidity, disability, critical illness, accidents and related risks. These risks are managed through the application of underwriting strategy, reinsurance arrangements and regular experience monitoring.

The underwriting strategy is intended to set premium pricing at an appropriate level that corresponds with the underlying exposure of the risks underwritten, and BOC Life's underwriting procedures include screening processes, such as the review of health condition and family medical history, to ensure alignment with the underwriting strategy.

The reinsurance arrangement transfers the insurance risk associated with the insurance contracts to the third party. It does not, however, discharge BOC Life's liability as the primary insurer. If a reinsurer fails to pay a claim for any reasons, BOC Life remains liable for the payment to the policyholder. The creditworthiness of reinsurers is considered by reviewing the reinsurers' financial strength prior to finalisation of any reinsurance contract. BOC Life directs its reinsurance placement policy and assesses the creditworthiness of all reinsurers and intermediaries by reviewing credit grades provided by rating agencies and other publicly available financial information. BOC Life also monitors the reinsurance counterparty risk exposure on an ongoing basis.

Uncertainty in the estimation of future benefit payments and premium receipts for long-term insurance contracts arises from the unpredictability of long-term changes in overall levels of mortality, morbidity and persistency. In this regard, BOC Life has conducted relevant experience studies and researches regularly to identify emerging trends. Results would be taken into account in pricing and underwriting management.

For details of the Group's Insurance Risk Management, please refer to Note 3.4 to the Interim Financial Information.

Interest rate risk management

An increase in interest rates may result in the depreciation of the value of BOC Life's investment assets. A decrease in interest rates may result in an increase in insurance liability and customer dissatisfaction due to decrease in returns. BOC Life manages the matching of assets and liabilities of its portfolios within an asset liability management framework that has been developed to achieve investment returns that match its obligations under insurance contracts; and to manage the adverse impact due to interest rate movement.

Liquidity risk management

BOC Life's liquidity risk is the risk of not being able to meet payment obligations as they fall due. BOC Life's asset and liability management framework includes stress tests and cash flow management to preserve liquidity to fulfil policy payment obligations from time to time.

Credit risk management

BOC Life has exposure to credit risk that a customer, debtor or counterparty will be unable to or unwilling to meet a commitment that they have entered into. Key areas to which BOC Life's insurance business is exposed include:

- Default risk associated with bonds, notes and counterparties
- Credit spread widening as a result of credit migration (downgrade)
- Reinsurers' share of insurance unpaid liabilities
- Amounts due from reinsurers in respect of claims already paid
- Amounts due from insurance contract holders
- Amounts due from insurance intermediaries

BOC Life manages credit risk by placing limits on its exposure to each investment counterparty and issuer. Such limits are subject to review by the Management at least once a year.

Equity price risk management

BOC Life's equity price risk refers to the risk of loss due to volatility of market price in equity securities, equity funds and private equity. BOC Life's asset and liability management framework includes managing the adverse impact due to equity price movement through stress test and exposure limit.

Currency risk management

BOC Life's currency risk refers to the risk of loss due to volatility of exchange rate. BOC Life's asset and liability framework includes managing the adverse impact due to exchange rate movement through stress test, exposure limit and risk limit.