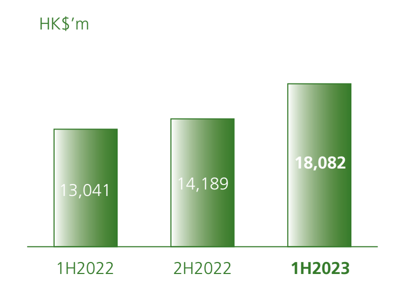
MANAGEMENT DISCUSSION AND ANALYSIS

FINANCIAL PERFORMANCE AND CONDITIONS AT A GLANCE

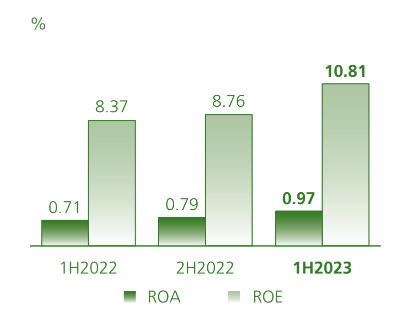
The Group has adopted Hong Kong Financial Reporting Standard ("HKFRS") 17, "Insurance Contracts", effective from 1 January 2023. The requirements of HKFRS 17 have been applied retrospectively, with comparative information restated for the financial year of 2022 (previously published under HKFRS 4).

The following table is a summary of the Group's key financial results for the first half of 2023 as compared with the previous two half-year periods of 2022.

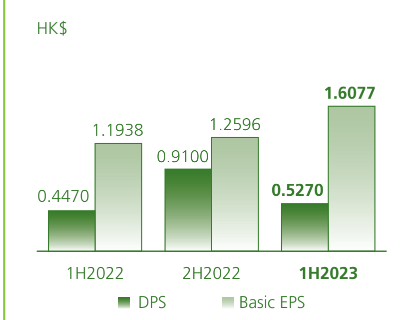
Profit for the period



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



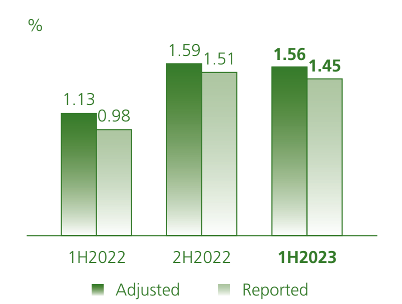
Basic Earnings Per Share ("Basic EPS") and Dividend Per Share ("DPS")



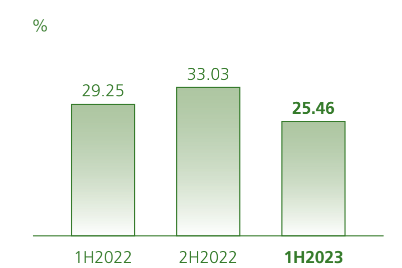
Profit for the period

- In the first half of 2023, profit for the period amounted to HK$18,082 million, representing an increase of 38.7% compared to the same period of the previous year and an increase of 27.4% compared to the second half of 2022.
- ROE and ROA were 10.81% and 0.97% respectively.
- Basic EPS was HK$1.6077. The interim dividend per share was HK$0.527.

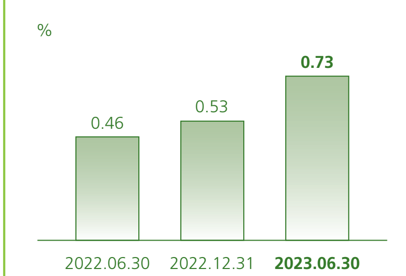
Net Interest Margin ("NIM")



Cost to Income Ratio



Classified or Impaired Loan Ratio[2]



Seizing opportunities from rising market interest rates to achieve a notable year-on-year increase in NIM

- NIM was 1.45%. If the funding income or cost of foreign currency swap contracts[3] were included, NIM would have been 1.56%, an increase of 43 basis points year-on-year. This was mainly attributable to higher market interest rates compared to the same period of the previous year. The Group proactively managed its assets and liabilities, resulting in a widening of the loan and deposit spread and an increase in the average yield of debt securities investments.

Maintaining satisfactory cost efficiency by continuously optimising resource allocation

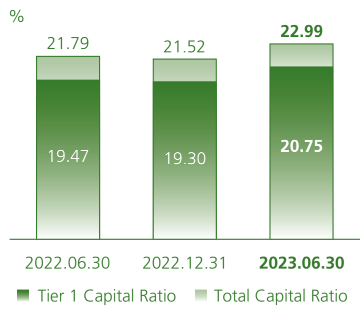
- Operating expenses increased by 5.9% year-on-year, while net operating income before impairment allowances increased by 21.6% compared to the same period last year. As a result, cost to income ratio improved by 3.79 percentage points year-on-year to 25.46%, maintaining at a satisfactory level compared to industry peers.

Maintaining benign asset quality through prudent risk management

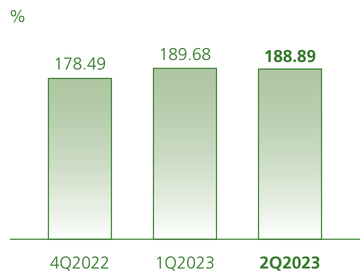
- The classified or impaired loan ratio was 0.73%, which remained below the market average.

MANAGEMENT DISCUSSION AND ANALYSIS

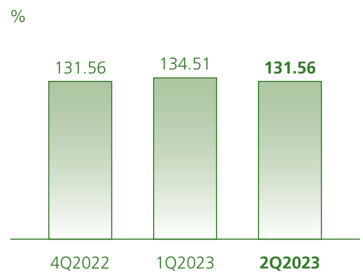
Capital Ratio



Average Value of Liquidity Coverage Ratio



Quarter-end Value of Net Stable Funding Ratio



Strong capital position to support solid business growth

- The tier 1 capital ratio was 20.75% and the total capital ratio was 22.99%.

Liquidity remained ample

- The average values of the Group's liquidity coverage ratio in the first and second quarter of 2023 stood at 189.68% and 188.89% respectively.
- Net stable funding ratio stood at 134.51% at the end of the first quarter of 2023 and at 131.56% at the end of the second quarter of 2023.

1. Return on average shareholders' equity and return on average total assets as defined in "Financial Highlights".
2. Classified or impaired advances to customers 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.

MANAGEMENT DISCUSSION AND ANALYSIS

ECONOMIC BACKGROUND AND OPERATING ENVIRONMENT

In the first half of 2023, the operating environment became more complex and challenging. The headline inflation rate in the US declined year-on-year but remained high, prompting the Federal Reserve to repeatedly raise the benchmark rate. As a result, the US economy continued to face recession risks. In Europe, the European Central Bank continued to raise the benchmark rate in order to curb inflationary pressures, despite ongoing uncertainty regarding financial systemic risks and geopolitical developments. In the Chinese mainland, gradual recovery in market demand and continuous increase in both production demand and supply were witnessed. Counter-cyclical monetary policies were reinforced by cutting the reserve requirement ratio and interest rates, so as to maintain reasonable and abundant liquidity in the banking system. The Southeast Asian economy continued to recover, although monetary policies among the region's central banks diverged and Southeast Asian currency exchange rates were volatile.

Despite financial markets facing increased uncertainty due to banking volatility in Europe and the US, Hong Kong's financial system remained effective and its banking system robust. Imports and exports of merchandise declined year-on-year due to a weakened external environment. Hong Kong's unemployment rate continued to decline and retail sales improved. These factors, coupled with a significant increase in visitor arrivals, resulted in the Hong Kong economy returning to positive growth.

In the first half of the year, the exchange rate of Hong Kong dollar against the US dollar triggered the weak-side Convertibility Undertaking, owing to supply and demand for Hong Kong dollar funding in the market. This prompted the Hong Kong Monetary Authority ("HKMA") to purchase Hong Kong dollars from the market, leading to a contraction in the aggregate balance of the banking sector. The Linked Exchange Rate System's automatic interest rate adjustment mechanism came into play, causing Hong Kong dollar interest rates to gradually rise. The 1-month HIBOR increased from 4.35% at the end of 2022 to 4.93% at the end of June 2023, and the Hong Kong dollar exchange rate stabilised within the conversion range. Meanwhile, the US Federal Reserve continued to raise its benchmark rate, resulting in the 1-month Secured Overnight Financing Rate ("SOFR") increasing from 4.36% to 5.14% over the same period. The inversion of the US treasury yield curve widened, with the treasury yield spread between 2-year and 10-year tenors expanding from 55 basis points at the end of 2022 to 106 basis points at the end of June 2023.

In the first half of 2023, Hong Kong stock market performance experienced volatility and in line with global markets trends, influenced by the tightening of monetary policies by several central banks. The total amount of funds raised and the average daily trading volume of the stock market fell by 35.3% and 16.4% respectively compared to the same period last year. As at the end of June 2023, the Hang Seng Index was down 4.4% compared with the end of 2022.

In the Hong Kong property market, residential property transaction volumes increased year-on-year and private residential property prices rose compared with the previous year-end, supported by positive factors such as the border reopening and a positive outlook on Hong Kong's economic recovery. The asset quality of banks' mortgage businesses remained generally stable. Meanwhile, the reopening of Hong Kong's borders also affected the commercial property market with sale prices rising from the last year-end and transaction volumes increasing year-on-year. Sale prices and rental costs of retail properties remained relatively stable while transaction volumes fell year-on-year.

Despite challenges in the macroeconomic environment, the banking industry continues to enjoy significant development opportunities. The persistent upward trend in interest rates is expected to benefit banks' earnings. At the same time, the 14th Five-Year Plan, the Guangdong-Hong Kong-Macao Greater Bay Area, the expansion of mutual financial market access between the Chinese mainland and Hong Kong, and the enactment of the Regional Comprehensive Economic Partnership ("RCEP") will provide new business opportunities for the banking sector in Hong Kong.

MANAGEMENT DISCUSSION AND ANALYSIS

CONSOLIDATED FINANCIAL REVIEW

Financial Highlights

HK$'m	**Half-year ended 30 June 2023**	(Restated) Half-year ended 31 December 2022	(Restated) Half-year ended 30 June 2022
Net operating income before impairment allowances	**30,838**	28,864	25,351
Operating expenses	**(7,852)**	(9,535)	(7,415)
Operating profit before impairment allowances	**22,986**	19,329	17,936
Operating profit after impairment allowances	**21,817**	18,685	16,232
Profit before taxation	**21,523**	17,233	15,929
Profit for the period	**18,082**	14,189	13,041
Profit attributable to equity holders of the Company	**16,998**	13,318	12,622

In the first half of 2023, the Group's net operating income before impairment allowances amounted to HK$30,838 million, an increase of HK$5,487 million or 21.6% year-on-year. If the funding income or cost of foreign currency swap contracts were included, net interest income would have recorded year-on-year growth, which was primarily attributable to higher market interest rates compared to the same period of the previous year. The Group proactively managed its assets and liabilities, leading to a widening of the loan and deposit spread and an increase in the average yield of debt securities investments. Net fee and commission income decreased on a year-on-year basis, mainly due to weakened investor confidence in the market, a decline in imports and exports, and dampened credit demand, factors which more than offset the positive impact on consumer confidence and travel brought about by the reopening of Hong Kong's borders. The Group optimised the investment mix of its banking book portfolio, resulting in reduced volatility in the mark-to-market value of certain interest rate instruments caused by market interest rate movements, which in turn led to a year-on-year decrease in net trading gain. Operating expenses increased, mainly reflecting the Group's concerted efforts to enhance brand promotion and marketing in view of improved market environment, and higher daily operating and business related expenses incurred in light of the gradual resumption of economic activities. Meanwhile, the net charge of impairment allowances decreased. Profit for the period amounted to HK$18,082 million, a year-on-year increase of HK$5,041 million or 38.7%. Profit attributable to equity holders was HK$16,998 million, an increase of HK$4,376 million or 34.7% year-on-year.

As compared to the second half of 2022, the Group's net operating income before impairment allowances increased by HK$1,974 million or 6.8%. This was mainly attributable to an increase in net interest income, including the funding income or cost of foreign currency swap contracts, an increase in net fee and commission income and a decrease in net loss on the disposal of debt securities investments. Operating expenses decreased, which more than offset the increase in the net charge of impairment allowances. Furthermore, there was a lower net loss from fair-value adjustments on investment properties. The Group's profit for the period increased by HK$3,893 million or 27.4% 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 2023**	(Restated) Half-year ended 31 December 2022	(Restated) Half-year ended 30 June 2022
Interest income	**57,249**	41,828	21,942
Interest expense	**(34,041)**	(18,399)	(6,621)
Net interest income	**23,208**	23,429	15,321
Average interest-earning assets	**3,226,086**	3,072,107	3,138,342
Net interest spread	**1.05%**	1.28%	0.90%
Net interest margin	**1.45%**	1.51%	0.98%
Net interest margin (adjusted)*	**1.56%**	1.59%	1.13%

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

Net interest income amounted to HK$23,208 million in the first half of 2023. If the funding income or cost of foreign currency swap contracts[#] were included, net interest income would have increased by 42.0% year-on-year to HK$24,988 million. This was mainly due to growth in average interest-earning assets and a widening of net interest margin. Average interest-earning assets expanded by HK$87,744 million or 2.8% year-on-year. If the funding income or cost of foreign currency swap contracts were included, net interest margin would have been 1.56%, up 43 basis points year-on-year, which was mainly attributable to higher market interest rates compared to the same period of the previous year. The Group proactively managed its assets and liabilities, which led to a widening of the loan and deposit spread and an increase in the average yield of debt securities investments, which more than offset the impact of customer migration from CASA deposits to time deposits.

Compared with the second half of 2022, the Group's net interest income would have increased by 1.2% if the funding income or cost of foreign currency swap contracts were included. This was mainly due to growth in average interest-earning assets, which was partially offset by a decrease in net interest margin. Average interest-earning assets expanded by HK$153,979 million or 5.0%. If the funding income or cost of foreign currency swap contracts were included, net interest margin would have been down 3 basis points, as deposit costs increased amid customer migration from CASA deposits to time deposits and intense market competition for deposit business.

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 2023		(Restated) Half-year ended 31 December 2022		(Restated) Half-year ended 30 June 2022	
ASSETS	**Average balance HK$'m**	**Average yield %**	Average balance HK$'m	Average yield %	Average balance HK$'m	Average yield %
Balances and placements with banks and other financial institutions	**376,321**	**2.07**	393,665	1.44	412,493	0.72
Debt securities investments and other debt instruments	**1,154,081**	**2.97**	1,005,961	2.24	1,082,644	1.29
Advances to customers and other accounts	**1,683,288**	**4.31**	1,658,247	3.27	1,636,783	1.66
Other interest-earning assets	**12,396**	**6.93**	14,234	4.32	6,422	2.53
Total interest-earning assets	**3,226,086**	**3.58**	3,072,107	2.70	3,138,342	1.41
Non interest-earning assets	**505,454**	**–**	518,335	–	544,979	–
Total assets	**3,731,540**	**3.09**	3,590,442	2.31	3,683,321	1.20
LIABILITIES	**Average balance HK$'m**	**Average rate %**	Average balance HK$'m	Average rate %	Average balance HK$'m	Average rate %
Deposits and balances from banks and other financial institutions	**248,758**	**1.42**	245,868	0.88	323,117	0.81
Current, savings and time deposits	**2,299,194**	**2.61**	2,215,114	1.44	2,254,428	0.46
Subordinated liabilities	**77,534**	**3.26**	19,057	3.45	–	–
Other interest-bearing liabilities	**86,938**	**2.90**	85,616	2.02	22,756	1.10
Total interest-bearing liabilities	**2,712,424**	**2.53**	2,565,655	1.42	2,600,301	0.51
Shareholders' funds* and other non interest-bearing deposits and liabilities	**1,019,116**	**–**	1,024,787	–	1,083,020	–
Total liabilities	**3,731,540**	**1.84**	3,590,442	1.02	3,683,321	0.36

* 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 2023**	(Restated) Half-year ended 31 December 2022	(Restated) Half-year ended 30 June 2022
Loan commissions	**1,466**	778	1,769
Credit card business	**1,185**	1,088	903
Securities brokerage	**952**	1,103	1,388
Trust and custody services	**380**	382	341
Payment services	**345**	364	360
Insurance	**327**	555	357
Funds distribution	**254**	246	295
Bills commissions	**237**	252	262
Currency exchange	**186**	123	87
Safe deposit box	**145**	150	149
Funds management	**17**	23	26
Others	**854**	672	687
Fee and commission income	**6,348**	5,736	6,624
Fee and commission expense	**(1,434)**	(1,368)	(1,192)
Net fee and commission income	**4,914**	4,368	5,432

In the first half of 2023, net fee and commission income amounted to HK$4,914 million, a decrease of HK$518 million or 9.5% year-on-year. The drop was mainly due to weakened investor confidence in the market, which resulted in a year-on-year decrease in commission income from securities brokerage and funds distribution of 31.4% and 13.9% respectively, alongside a decrease in commission income from funds management of 34.6% compared to the same period last year. Commission income from loans, bills and payment services decreased on a year-on-year basis, owing to a decline in imports and exports, and dampened trade and credit demand. However, commission income from credit card business and currency exchange rose by 31.2% and 113.8% year-on-year respectively, mainly due to reopening of Hong Kong's borders, which boosted consumer confidence and travel. Commission income from trust and custody services also increased year-on-year. Fee and commission expenses increased, mainly due to an increase in credit card related expenses resulting from higher business volume.

Compared with the second half of 2022, net fee and commission income increased by HK$546 million or 12.5%, primarily owing to an increase in commission income from loans, credit card business, currency exchange and funds distribution. However, commission income from insurance, securities brokerage, funds management, bills, payment services and trust and custody services decreased. Fee and commission expenses increased, mainly due to an increase in credit card related expenses resulting from higher business volume.

Net Trading Gain

HK$'m	**Half-year ended 30 June 2023**	(Restated) Half-year ended 31 December 2022	(Restated) Half-year ended 30 June 2022
Foreign exchange and foreign exchange products	**3,773**	3,011	4,624
Interest rate instruments and items under fair value hedge	**171**	881	4,076
Commodities	**77**	(9)	182
Equity and credit derivative instruments	**22**	54	20
Total net trading gain	**4,043**	3,937	8,902

In the first half of 2023, the Group's net trading gain amounted to HK$4,043 million, a decrease of HK$4,859 million or 54.6% year-on-year. If the funding income or cost of foreign currency swap contracts were excluded, net trading gain would have decreased by 65.8% year-on-year to HK$2,263 million. This was mainly attributable to the Group further optimising the investment mix of its banking book portfolio, which led to reduced volatility in the mark-to-market value of certain interest rate instruments caused by market interest rate movements. This, in turn, led to a year-on-year decrease in the net trading gain from interest rate instruments and items under fair value hedge. Net trading gain from commodities decreased by HK$105 million year-on-year, primarily due to a lower gain from bullion transactions.

Compared with the second half of 2022, net trading gain increased by HK$106 million or 2.7%. If the funding income or cost of foreign currency swap contracts were excluded, net trading gain would have decreased by 15.1% from the second half of last year. This was mainly attributable to changes in the mark-to-market value of certain interest rate instruments caused by market interest rate movements.

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

HK$'m	**Half-year ended 30 June 2023**	(Restated) Half-year ended 31 December 2022	(Restated) Half-year ended 30 June 2022
Net gain/(loss) on other financial instruments at fair value through profit or loss	**1,511**	(3,451)	(8,413)

In the first half of 2023, the Group recorded a net gain of HK$1,511 million on other financial instruments at fair value through profit or loss, compared to a net loss of HK$8,413 million in the first half of 2022. The change was primarily due to a rise in the mark-to-market value of BOC Life's debt securities investments this year, caused by market interest rate movements. The abovementioned changes in the mark-to-market value of debt securities investments related to BOC Life's participating insurance business was offset by changes to its insurance contract liabilities, also caused by market interest rate movements, which have been reflected in changes in insurance finance (expenses)/income.

Compared with the second half of 2022, the change was mainly attributable to a rise in the mark-to-market value of BOC Life's debt securities investments this year, in contrast to a decrease in the mark-to-market value of BOC Life's related investments resulting from movements in market interest rates in the second half of last year.

Operating Expenses

HK$'m	**Half-year ended 30 June 2023**	(Restated) Half-year ended 31 December 2022	(Restated) Half-year ended 30 June 2022
Staff costs	**5,078**	5,341	4,605
Premises and equipment expenses (excluding depreciation and amortisation)	**663**	684	589
Depreciation and amortisation	**1,476**	1,475	1,526
Other operating expenses	**1,170**	2,518	1,106
Less: Costs directly attributable to insurance contracts	**(535)**	(483)	(411)
Operating expenses	**7,852**	9,535	7,415

	At 30 June 2023	At 31 December 2022	At 30 June 2022
Staff headcount measured in full-time equivalents	**14,823**	14,832	14,220

Operating expenses amounted to HK$7,852 million, an increase of HK$437 million or 5.9% year-on-year. The Group remained committed to allocating resources efficiently and dynamically to meet its basic operating needs and support strategic implementation. To ensure safety and compliance in its operations, the Group continuously implemented low-carbon operational initiatives and prioritised key projects and business growth. At the same time, it refined cost management mechanisms and explored the utilisation of internal resources to meet additional requirements. During the period, it seized opportunities from improved market environment brought about by reopening of borders between the Chinese mainland and Hong Kong, and made concerted efforts to enhance brand promotion and marketing. Meanwhile, higher daily operating and business related expenses were incurred in light of the gradual resumption of economic activities. The cost to income ratio was 25.46%, remaining at a satisfactory level relative to industry peers.

Staff costs increased by 10.3% year-on-year, mainly due to the annual salary increment and an increased accrual for performance-related remuneration driven by improved earnings in the first half.

Premises and equipment expenses were up 12.6%, primarily due to increased investment in information technology.

Depreciation and amortisation decreased by 3.3%, mainly due to lower depreciation charges on right-of-use assets and completion of depreciation on certain computer systems, which more than offset the impact of increased amortisation of intangible assets.

Other operating expenses increased by 5.8%, primarily owing to an increase in business promotion, advertising and communication expenses.

Compared with the second half of 2022, operating expenses decreased by HK$1,683 million or 17.7%. The decrease was mainly due to lower staff costs and a reduction in advertising expenditure, professional consultancy fees, cleaning costs and charitable donation expenses. It was also partly attributable to other one-off expenses recorded in the second half of last year which led to a higher base for comparison.

Net Charge of Impairment Allowances on Advances and Other Accounts

HK$'m	**Half-year ended 30 June 2023**	(Restated) Half-year ended 31 December 2022	(Restated) Half-year ended 30 June 2022
Net reversal/(charge) of impairment allowances on advances and other accounts			
Stage 1	**429**	1,175	(359)
Stage 2	**(588)**	(1,024)	(316)
Stage 3	**(1,066)**	(970)	(1,051)
Net charge of impairment allowances on advances and other accounts	**(1,225)**	(819)	(1,726)

In the first half of 2023, the Group's net charge of impairment allowances on advances and other accounts amounted to HK$1,225 million, a decrease of HK$501 million or 29.0% year-on-year. Impairment allowances at Stage 1 recorded a net reversal of HK$429 million, as compared to a net charge of HK$359 million in the same period last year. The net reversal in the first half of 2023 was driven by improvements to the parameter values of the Group's expected credit loss model made in response to a more positive macroeconomic outlook. By contrast, in the same period last year, the deteriorating macroeconomic conditions caused by the severity of the pandemic and ongoing geopolitical risks resulted in a higher net charge of impairment allowances. Impairment allowances at Stage 2 recorded a net charge of HK$588 million, an increase of HK$272 million year-on-year, mainly reflecting the potential risks arising from exposures to certain property developers. Impairment allowances at Stage 3 amounted to a net charge of HK$1,066 million, an increase of HK$15 million year-on-year. The annualised credit cost of advances to customers and other accounts was 0.14%, down 0.07 percentage points year-on-year.

As at 30 June 2023, the Group's total loan impairment allowances as a percentage of advances to customers was 0.73%.

Compared with the second half of 2022, the Group's net charge of impairment allowances on advances and other accounts increased by HK$406 million or 49.6%. The net reversal of impairment allowances at Stage 1 decreased by HK$746 million, owing to a higher net reversal recorded in the second half of 2022 when the Group revised its expected credit loss model and a negative loan growth. The net charge of impairment allowances at Stage 2 decreased by HK$436 million, mainly attributable to the higher impairment allowances made in the second half of 2022 after the Group adjusted its expected credit loss model to take into consideration the potential risks arising from exposures to certain Mainland property developers and clients under the prevailing pandemic relief measures. The net charge of impairment allowances at Stage 3 increased by HK$96 million, mainly due to new impairment allowances made in response to the downgrading of certain corporate advances this year.

ANALYSIS OF ASSETS AND LIABILITIES

The table below summarises the Group's asset composition. Please refer to Note 20 to the Interim Financial Information for the contract/notional amounts and fair values of the Group's derivative financial instruments. Please refer to Note 36 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 2023		(Restated) At 31 December 2022	
HK$'m, except percentages	**Balance**	**% of total**	Balance	% of total
Cash and balances and placements with banks and other financial institutions	**414,560**	**11.0**	535,194	14.6
Hong Kong SAR Government certificates of indebtedness	**210,010**	**5.6**	208,770	5.7
Securities investments and other debt instruments[1]	**1,190,085**	**31.5**	1,068,226	29.1
Advances and other accounts	**1,713,106**	**45.4**	1,644,113	44.8
Fixed assets and investment properties	**59,707**	**1.6**	60,330	1.7
Other assets[2]	**183,713**	**4.9**	149,872	4.1
Total assets	**3,771,181**	**100.0**	3,666,505	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 2023, the total assets of the Group amounted to HK$3,771,181 million, an increase of HK$104,676 million or 2.9% from the end of last year. Cash and balances and placements with banks and other financial institutions decreased by HK$120,634 million or 22.5%, mainly due to a decrease in balances with banks and central banks. Securities investments and other debt instruments increased by HK$121,859 million or 11.4%, as the Group increased investments in government-related bonds and bills as well as high-quality financial institutions bonds. Advances and other accounts rose by HK$68,993 million or 4.2%, with advances to customers growing by HK$71,368 million or 4.3%, and trade bills decreasing by HK$995 million or 15.7%.

Advances to Customers

			(Restated)	
	At 30 June 2023		At 31 December 2022	
HK$'m, except percentages	**Balance**	**% of total**	Balance	% of total
Loans for use in Hong Kong	**1,250,975**	**72.8**	1,172,466	71.1
Industrial, commercial and financial	**700,635**	**40.8**	641,206	38.9
Individuals	**550,340**	**32.0**	531,260	32.2
Trade financing	**56,961**	**3.3**	51,879	3.2
Loans for use outside Hong Kong	**411,701**	**23.9**	423,924	25.7
Total advances to customers	**1,719,637**	**100.0**	1,648,269	100.0

The Group continued to capture opportunities in the Hong Kong, Greater Bay Area, Southeast Asian and key overseas markets. Adhering to its customer-centric philosophy, the Group deepened cross-departmental collaboration and strengthened service capabilities across its entire product line, aiming to meet customers' comprehensive business needs with professional services. It further bolstered its support to local commercial and SME customers in Hong Kong by offering tailored and exclusive service solutions. In addition, the Group facilitated the HKSAR Government's launch of funding schemes to support post-pandemic business recovery in certain industries. The Group made concerted efforts to develop its mortgage business by refining the functionality of its Home Expert mobile application, providing customers with comprehensive property planning and online mortgage services. It capitalised on development opportunities arising from regional synergies by enhancing collaboration with its Southeast Asian entities and BOC's entities in the Greater Bay Area and Asia-Pacific region. These collaborations focused on developing of Belt and Road and "Going Global" projects, serving large corporate customers in the region, and actively leading or participating in syndicated projects in Southeast Asia. During the period, the Group remained the top mandated arranger in the Hong Kong-Macao syndicated loan market and held the leading market position in terms of the total number of new mortgage loans in Hong Kong. As at 30 June 2023, advances to customers amounted to HK$1,719,637 million, an increase of HK$71,368 million or 4.3% from the end of last year.

Loans for use in Hong Kong grew by HK$78,509 million or 6.7%.

- Lending to the industrial, commercial and financial sectors increased by HK$59,429 million or 9.3%, reflecting loan growth in property development and investment, manufacturing, wholesale and retail trade, information technology and stock brokers.

- Lending to individuals increased by HK$19,080 million, or 3.6%, mainly driven by growth in loans for the purchase of flats under the Home Ownership Scheme and other government-sponsored home purchase schemes, loans for the purchase of other residential properties and other individual loans.

Trade financing increased by HK$5,082 million or 9.8%. Loans for use outside Hong Kong decreased by HK$12,223 million or 2.9%, mainly due to a decrease in loans for use in the Chinese mainland.

Loan Quality

HK$'m, except percentages	**At 30 June 2023**	(Restated) At 31 December 2022
Advances to customers	**1,719,637**	1,648,269
Classified or impaired loan ratio	**0.73%**	0.53%
Total impairment allowances	**12,533**	11,575
Total impairment allowances as a percentage of advances to customers	**0.73%**	0.70%
Residential mortgage loans[1] – delinquency and rescheduled loan ratio[2]	**0.01%**	0.02%
Card advances – delinquency ratio[2]	**0.27%**	0.28%

	Half-year ended 30 June 2023	Half-year ended 30 June 2022
Card advances – charge-off ratio[3]	**1.43%**	1.38%

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 first half of 2023, Hong Kong's economic recovery was positively impacted by the reopening of borders between the Chinese mainland and Hong Kong, which benefitted industries such as tourism, transport, aviation, catering and retail, among others. However, elevated interest rates put pressure on customers' repayment abilities, while ongoing geopolitical risks and heightened global inflation contributed to uncertainty in the economic environment. The Group proactively strengthened its risk management systems across all types of risks and continuously improved its risk management practices in order to maintain solid asset quality. As at 30 June 2023, the classified or impaired loan ratio was 0.73%, up 0.20 percentage points from the end of last year, as the Group's classified or impaired loans rose by HK$3,830 million from the end of last year to HK$12,554 million owing to the downgrading of certain corporate advances in the first half of the year. The combined delinquency and rescheduled loan ratio of the Group's residential mortgage loans was 0.01%. The charge-off ratio of card advances stood at 1.43%, up 0.05 percentage points year-on-year.

Deposits from Customers*

HK$'m, except percentages	At 30 June 2023 Balance	% of total	At 31 December 2022 Balance	% of total
Demand deposits and current accounts	**224,856**	**9.1**	236,115	9.9
Savings deposits	**947,301**	**38.5**	993,689	41.8
Time, call and notice deposits	**1,291,233**	**52.4**	1,147,403	48.3
	2,463,390	**100.0**	2,377,207	100.0
Structured deposits	**108**	**0.0**	–	–
Total deposits from customers	**2,463,498**	**100.0**	2,377,207	100.0

* Including structured deposits

In the first half of 2023, market interest rates remained high, leading to a continued trend of customers migrating from CASA deposits to time deposits. In light of this, the Group implemented several strategic measures to consolidate its mid to high-end customer base. It seized market opportunities from the reopening of Hong Kong's borders and actively promoted its Cross-boundary Wealth Management Connect service, while also accelerating the introduction of online applications and products as well as innovative product, such as green deposits. Furthermore, the Group enhanced collaboration among its business units, strengthened cooperation with government authorities, large corporates and major central banks, and actively expanded its e-payment, e-collection, payroll, cash management and cash pooling businesses. As at 30 June 2023, total deposits from customers amounted to HK$2,463,498 million, an increase of HK$86,291 million or 3.6% from the end of the previous year. Time, call and notice deposits increased by 12.5%. Savings deposits decreased by 4.7%. Demand deposits and current accounts decreased by 4.8%. The CASA ratio was 47.6%, down 4.1 percentage points from the end of last year.

Capital and Reserves Attributable to Equity Holders of the Company

HK$'m	At 30 June 2023	(Restated) At 31 December 2022
Share capital	**52,864**	52,864
Premises revaluation reserve	**37,908**	37,683
Reserve for financial assets at fair value through other comprehensive income	**(10,114)**	(11,008)
Regulatory reserve	**7,486**	6,655
Translation reserve	**(1,833)**	(1,683)
Insurance finance reserve	**2,124**	2,288
Retained earnings	**219,534**	212,989
Reserves	**255,105**	246,924
Capital and reserves attributable to equity holders of the Company	**307,969**	299,788

As at 30 June 2023, capital and reserves attributable to equity holders of the Company amounted to HK$307,969 million, an increase of HK$8,181 million or 2.7% from the end of last year. The premises revaluation reserve grew by 0.6%. The deficit in the reserve for financial assets at fair value through other comprehensive income decreased by 8.1% as the Group optimised the investment mix of its banking book portfolio to reduce the impact of market interest rate movements on the mark-to-market value of financial assets at fair value through other comprehensive income. The regulatory reserve increased by 12.5%, primarily driven by growth in advances to customers and a change in the net charge of impairment allowances. Retained earnings rose by 3.1% from the end of last year.

Capital Ratio*

HK$'m, except percentages	At 30 June 2023	At 31 December 2022
Consolidated capital after deductions		
Common Equity Tier 1 capital	**246,884**	229,798
Additional Tier 1 capital	**22,676**	23,476
Tier 1 capital	**269,560**	253,274
Tier 2 capital	**29,170**	29,048
Total capital	**298,730**	282,322
Total risk-weighted assets	**1,299,148**	1,312,199
Common Equity Tier 1 capital ratio	**19.00%**	17.51%
Tier 1 capital ratio	**20.75%**	19.30%
Total capital ratio	**22.99%**	21.52%

* The comparative figures have been restated to conform with current period presentation

As at 30 June 2023, Common Equity Tier 1 ("CET1") capital and tier 1 capital increased by 7.4% and 6.4% respectively from the end of last year, which was primarily attributable to profits recorded for the first half of 2023. Total capital increased by 5.8% from the previous year-end. Total risk-weighted assets ("RWAs") decreased by 1.0% from the end of last year. The CET1 capital ratio was 19.00% and the tier 1 capital ratio was 20.75%, while the total capital ratio stood at 22.99%. The Group continued to strengthen its capital management so as to enhance profitability, properly manage its RWAs and improve its return on capital within the context of a rate hike cycle, with a view to maintaining an appropriate capital level for meeting regulatory requirements and balancing sustainable business development with returns to equity holders.

Liquidity Coverage Ratio and Net Stable Funding Ratio

	2023	2022
Average value of liquidity coverage ratio		
First quarter	**189.68%**	159.16%
Second quarter	**188.89%**	149.49%
Third quarter	**N/A**	149.00%
Fourth quarter	**N/A**	178.49%

	2023	2022
Quarter-end value of net stable funding ratio		
First quarter	**134.51%**	123.86%
Second quarter	**131.56%**	126.87%
Third quarter	**N/A**	127.98%
Fourth quarter	**N/A**	131.56%

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 meeting regulatory requirements for the first two quarters of 2023.

MANAGEMENT DISCUSSION AND ANALYSIS

BUSINESS REVIEW

In the first half of 2023, the Group seized opportunities from economic recovery and continued to pursue progress while maintaining stability, thus improving its ability to advance sound development. It deeply cultivated its core market of Hong Kong with a view to consolidating its customer and business foundations and exploring growth potential. Taking advantage of the full resumption of normal travel between the Chinese mainland and Hong Kong, the Group vigorously developed cross-border business, leveraged its offshore market advantages and capitalised on the policy dividends of the Guangdong-Hong Kong-Macao Greater Bay Area in order to cultivate new growth drivers. To further enhance its regional service capabilities and expedite the delivery of product and service delivery, the Group remained at the forefront of RMB internationalisation, strengthened regional collaborations across Southeast Asia and seized major development opportunities from the RCEP. It also actively integrated the concept of green finance and sustainable development into its business and operations, providing diversified low-carbon products and services to meet customers' needs for green transformation. The Group consolidated its core technological foundations so as to offer comprehensive digital banking services and actively developed integrated business platforms and collaborative mechanisms to enhance its integrated service capabilities. In addition, the Group adhered to "bottom line" thinking in risk management while making constant efforts to refine its human resources, culture and operational procedures in order to provide strong support for the implementation of its strategic plan.

Business Segment Performance

Profit/(Loss) before Taxation by Business Segment

HK$'m	**Half-year ended 30 June 2023**	Half-year ended 30 June 2022
Personal Banking	**8,625**	3,079
Corporate Banking	**9,850**	5,493
Treasury	**1,785**	7,554
Insurance	**617**	(730)
Others	**1,459**	892
Subtotal	**22,336**	16,288
Eliminations[2]	**(813)**	(359)
Total profit before taxation	**21,523**	15,929

1. For additional segmental information, see Note 39 to the Interim Financial Information.

2. Eliminations include the CSM adjustments of the Group which arise from eliminating intra-group fees for insurance policies distributed through the Group's banking channels, together with the related directly attributable costs incurred.

Personal Banking

Financial Results

Personal Banking achieved a profit before tax of HK$8,625 million in the first half of 2023, an increase of HK$5,546 million or 180.1% year-on-year. This growth was mainly attributable to an increase in net interest income, which was partially offset by a slight drop in non-interest income and an increase in operating expenses. Net interest income increased by 147.9%, mainly driven by a rise in market interest rates along with an increase in the average balance of deposits and loans. Operating expenses rose by 5.4%, mainly due to higher staff costs and an increase in business-related expenses.

Business Operations

Enriching green finance products and services and boosting high-quality development

In line with market and customer trends towards low-carbon transition, the Group actively implemented its strategic plan for sustainable development. It enriched its green finance products and services to support customers in adopting green and low-carbon living practices. In light of growing market interest in ESG issues, the Group helped retail customers to capture new green investment opportunities and offered a diversified range of investment options that combine growth and income components. These include a sustainable income strategy fund and a sustainable equity fund, the latter being the first equity fund in Hong Kong to reference the "S&P BOCHK China Hong Kong Greater Bay Area Net Zero 2050 Climate Transition Index" for active investments. At the end of June 2023, the number of ESG funds distributed via BOCHK's platform had increased by approximately 20% compared to the end of last year. The Group also continued to promote its Green Mortgage Plan, encouraging homebuying clients to support green buildings. At the end of June 2023, the balance of green mortgage loans was approximately 2.2 times higher than that of the previous year-end, further promoting carbon reduction, environmental protection and smart living.

Accelerating the development of a digital bank and enhancing core product competitiveness

The Group pushed forward data-driven product design and service delivery to ensure effective and continuous business operations. As at the end of June 2023, the number of customers using its digital platforms showed steadily growth as compared with the end of 2022. Notably, there was continuous growth in both the number of customers using its mobile banking platform and related transaction volumes, in particular those related to insurance and foreign exchange trading. To meet surging demand for online insurance products, the Group expanded the range of insurance products offered on its mobile banking platform, aiming to enhance customers' online insurance application experience. The proportion of life insurance business transacted via e-channels increased steadily, with the Group ranking first in the market for standard new premiums from online channels in the first quarter of 2023. To improve its remote service capabilities and expand customer coverage, the Group upgraded its RM Chat service platform to enhance customer interactions and services, thereby strengthening customer acquisition and retention effectiveness. It also advanced the automation of approval procedures by deepening the automation of its residential mortgage approval processes and optimising the pre-default eligibility criteria of personal loan and credit card applications, so as to enhance the Group's efficiency and capacity in credit approval. In line with the "HKD-RMB Dual Counter Model" launched by Hong Kong Exchange and Clearing Limited, the Group introduced a cross-counter securities trading service on mobile banking. This allows customers to conduct flexible cross-counter transactions after selecting of designated securities according to their various funding needs. To improve operational efficiency, the Group utilised blockchain technology to carry out 99% of its property valuation reports during the period. In addition, it optimised its Home Expert mobile application to provide comprehensive property purchase planning and online mortgage services. In coordination with the "Hospital Authority Enhanced Home Loan Interest Subsidy Scheme", a special module was set up within the application to enable qualified Hospital Authority personnel to complete the entire mortgage application process online and realise their dream of home ownership. As at the end of June 2023, the Home Expert mobile application had achieved more than 167,000 cumulative downloads. In the first half of 2023, the monthly average number of online mortgage applications recorded year-on-year growth of 22.8%, accounting for approximately half of total mortgage applications. The Group maintained its top market position in terms of total number of new residential mortgage loans for 4 consecutive years.

Developing a tailored service experience to satisfy the needs of diverse customer segments

The Group made concerted efforts to promote its premium brand of "Private Wealth". It expanded the range of exclusive products and premier services on offer, including providing Private Wealth professional investors with diverse trading channels such as corporate bond trading via mobile banking. With additional Private Wealth centres coming into operation, it was able to facilitate face-to-face wealth management services for its high net-worth customers and enhance their bespoke banking experiences. As a result, the Group's Private Wealth business achieved steady growth, driven by continuous expansion in customer base since its launch. As at the end of June 2023, the number of Private Wealth customers had further increased as compared with the end of 2022. The Group also continued to develop its "Trendy Too" brand, which targets the young customer segment, and actively explored using innovative service channels and products to guide more young customers to accumulate wealth step-by-step. To celebrate the first anniversary of TrendyToo, the Group introduced a number of themed promotional offers covering various wealth management and investment instruments as well as spending and payment tools. There has been a steady increase in the number of young customer accounts since the brand launched, with the number of newly opened accounts in the first half of 2023 almost tripled year-on-year. During the period, BOCHK was awarded Best Retail Bank in Hong Kong at the Global Excellence in Retail Financial Services Awards 2023 organised by *The Asian Banker*.

The Group's private banking business maintained satisfactory growth. By enhancing its collaboration with other business units within the Group, its Southeast Asian entities and BOC Group, it was able to optimise its service chain and thus provide professional private banking services to high-net-worth clients and family offices. At the same time, the Group actively integrated green finance and ESG standards into product and service design, pushing forward high-quality and sustainable development in its private banking business. It stepped up its digital transformation efforts by accelerating business process automation and digitalisation to keep enhancing its private banking service and trading platform. The Group also enriched its product range and strived to implement innovative service practices. As at 30 June 2023, the Group's private banking assets under management had increased by 17.1% compared to the end of 2022.

Seizing cross-border market opportunities and fostering the development of RMB business

With Hong Kong fully resuming normalcy, the Group implemented a number of initiatives to help cross-border customers capture wealth management opportunities. It introduced a series of convenient offline services, as well as brand promotional and themed marketing campaigns, while relying on its cross-border mobile banking module to strengthen its online investment guidance service and offer exclusive investment options with featured complementary discounts. The Group capitalised on its new "BOCHK Cross-border GO" brand, which focuses on the three major regions of the Chinese mainland, Southeast Asia and other overseas countries, to provide one-stop cross-border financial services to customers travelling around the globe. As at the end of June 2023, the coverage of its attestation service had been extended to 14 countries and regions. Regarding cross-border financial services in the Chinese mainland, BOCHK strived to become the first-choice bank for Hong Kong customers travelling north and Chinese mainland customers travelling south by providing them with a suite of financial services in the Greater Bay Area, such as account opening, property purchase, wealth management, payment and insurance protection. As at the end of June 2023, the number of BOCHK's cross-border customers had steadily increased, with the revenue generated from its cross-border life insurance business witnessing a satisfactory year-on-year growth. Meanwhile, the cumulative number of GBA accounts opened increased by 41% compared with the end of last year. The Group continuously optimised its cross-border products and services with the aim of meeting the global asset allocation requirements of Chinese mainland customers. It now offers more than 160 investment products under the Southbound scheme of the BOCHK Cross-boundary Wealth Management Connect service, including funds, retail bonds, deposits and foreign exchange products. In the first half of 2023, the aggregate number of accounts opened and the total amount of funds remitted or transferred under Southbound and Northbound services ranked among the top tier in Hong Kong, while the market value of products provided under the Southbound scheme ranked among the top tier in the Greater Bay Area market. In line with the "Northbound Travel for Hong Kong Vehicles" scheme announced by the HKSAR Government and the People's Government of Guangdong Province, the Group launched "Hong Kong-Guangdong Cross Border Motor Insurance" to facilitate Hong Kong residents' cross-boundary car trips. Keeping pace with RMB internationalisation, BOCHK leveraged its prominent position in RMB business to satisfy customers' investment and financial needs through its comprehensive "RMB One" package, which offers a wide range of RMB products and services. In the first quarter of 2023, the Group further consolidated its leading position in RMB insurance and maintained its market leadership in the new RMB insurance standard premiums for the 11th consecutive year.

Improving regional brand development and enhancing digital empowerment in Southeast Asia

The Group accelerated the development of its personal banking financial product and service suite in Southeast Asia. Its personal banking services now extend to eight Southeast Asian countries while its "Wealth Management" is rooted in BOC Malaysia, BOC Thailand, the Jakarta Branch and Phnom Penh Branch, the Group remained committed to developing a full-scope wealth management business and comprehensive financial services that serve the needs of the local markets. It utilised digital innovation and its multi-functional mobile banking platform to optimise the online payment experience for local customers, introducing a series of features such as small value real-time payment, cross-border UnionPay QR payment, and online RMB salary direct remittance service. As such, it steadily advanced the development of a scenario-based personal banking financial services ecosystem. Meanwhile, BOC Malaysia launched the second phase of its Real-time Retail Payments Platform (RPP), becoming the first Chinese bank to offer this service in the country. The Vientiane Branch became the first commercial bank in Laos to offer UnionPay, WeChat, and Alipay online payment services. The Phnom Penh Branch launched a KHQR QR code payment service and promoted merchant acquiring business in Angkor Wat, Cambodia. The Jakarta Branch partnered with a local Chinese life insurance company to launch an Indonesian rupiah-denominated savings insurance product and introduced a corporate debit card for corporate customers. In addition, the Manila Branch secured the payroll business of a multinational telecommunications company in the Philippines.

Leveraging BOC Credit Card's advantages to stimulate post-pandemic local and cross-border spending

Seizing business opportunities from the reopening of borders and the resumption of normalcy, the Group collaborated closely with BOC to launch joint promotional offers with merchants, bridging consumer spending between the Chinese mainland and Hong Kong. The "So Three Campaign" was introduced, offering special rebates across three categories of spending, namely online shopping, bill payment, and dining, shopping and entertainment. In addition, the Group partnered with local and overseas physical stores and online merchants covering the majority of customers' daily spending needs, and worked with several brand ambassadors to promote its brand image and enhance BOC Credit Card's brand awareness. To revolutionalise its "BOC Chill Card", the Group introduced the monthly "Chill Ticket Bidding Day" promotion, allowing cardholders to purchase tickets to designated movie screenings and music concerts at no cost. By launching new entertainment and reward schemes that attract and appeal to young customers, the Group recorded notable growth in young customers' share of new card acquisition in the first half of 2023. It also strengthened intra-group collaborations and synergies in order to continuously cultivate new business growth drivers. In the first half of 2023, the total transaction volume of retail cardholder spending and merchant acquiring business increased by 33.8% and 42.4% respectively year-on-year.

Corporate Banking

Financial Results

Corporate Banking achieved a profit before tax of HK$9,850 million, an increase of HK$4,357 million or 79.3% year-on-year. This was mainly attributable to an increase in net interest income. Net operating income before impairment allowances increased by 46.1% year-on-year. Net interest income increased by 78.9% year-on-year, primarily driven by a rise in market interest rates. Net fee and commission income decreased by 11.3% year-on-year, mainly due to a decline in commission income from loans and bills. The net charge of impairment allowances was down HK$452 million year-on-year. This was mainly due to a higher net charge of impairment allowances recorded in the same period last year, resulting from the deteriorating macroeconomic conditions caused by the severity of the pandemic and ongoing geopolitical risks.

Business Operations

Enhancing professional product and service capabilities to constantly sharpen business advantages

Adhering to its customer-centric philosophy, the Group focused on strengthening intra-group collaboration and enhancing its full-scope service capabilities to meet customers' comprehensive business demands. It proactively captured market opportunities, and strengthened support for key projects in Hong Kong, the Greater Bay Area and Southeast Asia. As a result, the Group remained the top mandated arranger bank in the Hong Kong-Macao syndicated loan market and underwrote several bond issues with significant market influence. It deepened its business relationships with the world's major central banks, international financial institutions and sovereign wealth funds. It also further promoted the development of key businesses such as trade financing, payment, and settlement services, and maintained its leading position in the cash pooling business. During the period, it introduced an efficient online payment collection solution for an internationally renowned airline, enhancing operational efficiency and offering passengers a safe, efficient and convenient electronic payment experience. In recognition of its outstanding and highly professional services, BOCHK was named Best Cash Management Bank in Hong Kong for the ninth time and Best Transaction Bank in Hong Kong for the fifth time by *The Asian Banker*. Moreover, it was awarded Hong Kong Domestic Cash Management Bank of the Year for the tenth consecutive year by *Asian Banking & Finance*.

Giving full play to synergistic advantages and accelerating regional business development

The Group deepened its cooperation with BOC's institutions in the Greater Bay Area to seize post-pandemic opportunities and changes as market recovered. These collaborations aimed to promote business synergies and jointly explore the cross-border financing needs of key industries and target customers in the context of deepening integration within the Greater Bay Area. The Group strived to enhance its technology finance capabilities and supported the development of innovative technology enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area, the Yangtze River Delta and the Beijing-Tianjin-Hebei region by offering diversified products and services. It closely followed the HKSAR Government's development plan and related business opportunities for the Northern Metropolis area so as to actively provide corresponding financial support. During the period, the Group launched a new series of cross-border financial service solutions to help corporate customers capture business opportunities in the Greater Bay Area. It continuously improved its RMB service capabilities and facilitated the expansion of cross-border financial infrastructure, including supporting the launch of Northbound Trading of Swap Connect by providing transaction clearing agency and foreign exchange services for offshore investors. In addition, it successfully implemented the first batch of cross-border RMB settlement business to support trade deals between China and Argentina for an intelligent technology enterprise.

In its Southeast Asian business, the Group focused on business integration and seized opportunities brought about by economic and trade ties within the Asia-Pacific region. It prioritised the development of Belt and Road and "Going Global" projects as well as large corporate customers in the region, and actively led or participated in regional syndicated projects by enhancing collaboration with BOC entities in the Asia-Pacific region. The Phnom Penh Branch and Vientiane Branch each signed a strategic cooperation framework agreement with a large Chinese investment company to provide comprehensive financial services, such as deposits, loans, remittances, international settlement and trade financing, for the company's local corporate investees. The Yangon Branch successfully completed its first RMB export letter of credit collection transaction, marking its first trade finance deal since commencing business. The Group continued to support structured financing projects in Southeast Asia and coordinated its Southeast Asian entities to participate in high-quality syndicated loans in the Asia-Pacific region. BOCHK successfully acted as lead arranger in its first syndicated loan to a leading auto finance company in Indonesia, further consolidating its prominent position in the syndicated loan market. To promote the regional development of green finance, the Group remained committed to fostering the concept of sustainable development and promoting the launch and certification of ESG projects. The Manila Branch and the Phnom Penh Branch launched the Group's first bilateral green loan and social responsibility loan certified by third party respectively in Southeast Asia. The Group also optimised its regional product suite and made concerted efforts to improve the service capability of its intelligent Global Transaction Banking (iGTB) platform among its Southeast Asian entities, so as to provide all-round digital services for local and cross-border corporate customers and support customers' digital transformation. During the period, BOC Malaysia and BOC Thailand each launched iGTB regional e-commerce services, allowing customers to handle letters of credit and guarantees through online banking.

Promoting inclusive finance and deepening cooperation with commercial and SME customers

The Group spared no effort in supporting the business development of local commercial and SME customers, aiming to deliver customised financial solutions by enhancing its sectoral and digital servicing capabilities. It actively supported the "Dedicated 100% Loan Guarantee Scheme" launched this year by HKMC Insurance Limited to aid in the post-pandemic recovery of local and cross-boundary passenger transport and tourism industries. The Group also collaborated with a third-party online payment platform in Hong Kong to provide convenient digital banking loan services for SMEs by utilising transaction data from e-wallets provided by merchants. These ongoing efforts to provide high-quality SME services won wide acclaim and recognition, with the Group receiving the Best SME's Partner Award from the Hong Kong General Chamber of Small and Medium Business for the 16th consecutive year and the Outstanding Innovative SME Banking Services at the FinTech Awards organised by *etnet* for the second consecutive year.

Cultivating the concept of sustainable development and actively promoting green transformation

In line with ESG development trends, the Group ramped up efforts to enhance its green finance product and service offerings in order to provide customers with bespoke and cutting-edge financial solutions, while supporting and encouraging enterprises to adopt sustainable business models and accomplish their green development goals. As at the end of June 2023, the balance of its green and sustainability-linked loans to corporate customers increased by 47% as compared with the previous year-end. Acting as joint global coordinator, the Group successfully assisted the HKSAR Government in issuing RMB15 billion worth of green bonds.

Steadily developing custody and trust business

The Group devoted significant efforts to expand its custody business. It enhanced joint marketing efforts with BOC's branches in the Chinese mainland and overseas and successfully engaged in several key custody projects. As at the end of June 2023, its corporate and institutional custodian clients increased by 2% compared to the end of last year. During the period, the Group actively explored new products and served as custodian for the HKSAR Government's first tokenised green bond issuance. It also deepened business cooperation with Chinese investment companies on corporate trust and agency services, in an effort to assist its customers in raising funds from bond markets.

BOCI-Prudential Trustee Limited ("BOCI-Prudential Trustee") continued to promote business transformation and diversify its income streams by successfully engaging in a number of sizable projects, including ORSO schemes, Private Employee Benefits schemes and Special Purpose Acquisition Company escrow account services. During the period, BOCI-Prudential Trustee was appointed as trustee, fund administrator or custodian for 15 new funds or investment portfolios. As at the end of June 2023, MPF assets under BOCI-Prudential Trustee's trusteeship increased by 6.3% from the end of last year, remaining among the top tier in Hong Kong. BOCI-Prudential Trustee also optimised its retirement schemes and asset servicing digital platforms to enhance its e-channel sales capacities, while assisting the MPFA in preparing for the launch of the eMPF platform. In addition, BOCI-Prudential Trustee sought to tap into business opportunities from the Cross-boundary Wealth Management Connect schemes, with a view to building its cross-border unit trust business and satisfying the wealth management needs of residents from Hong Kong and the Chinese Mainland. During the period, BOCI-Prudential Trustee received multiple accolades in recognition of its professional service capabilities, including five awards at the 2023 MPF Awards organised by MPF Ratings Ltd, multiple fund awards at the Top Fund Awards 2022 organised by *Bloomberg Businessweek* (Chinese Edition) and the Lipper Fund Awards Hong Kong 2023 organised by *Refinitiv*; and Best Fund Administrator, Retail Funds – Highly Commended in the Triple A Sustainable Investing Awards for Institutional Investors, ETFs, and Asset Servicing Providers 2023 organised by *The Asset* for the second consecutive year.

Treasury

Financial Results

Treasury recorded a profit before tax of HK$1,785 million, a decrease of HK$5,769 million or 76.4% year-on-year. This decline was primarily due to the Group optimising the investment mix of its banking book portfolio, resulting in reduced volatility in the mark-to-market value of certain interest rate instruments caused by market interest rate movements. In addition, there was a decrease in net gain from foreign currency swap contracts, which led to a year-on-year decrease in net trading gain, as well as a year-on-year drop in net interest income owing to a rise in funding costs. However, these declines were partially offset by a decrease in the net loss on other financial instruments.

Business Operations

Strengthening infrastructure and steadily promoting global markets business

The Group actively responded to market changes and maintained stable growth in its trading business. Through continuous technological advancements, the Group enhanced its online servicing and transaction processing capabilities. It remained committed to developing diversified products and integrated services, achieving satisfactory results in client business. The Group placed emphasis on cultivating the offshore RMB market by expanding scenario-based applications of RMB, which further consolidated and enhanced its professional reputation in RMB business. During the period, the Group actively supported mutual market access schemes such as Shanghai-Hong Kong Stock Connect, Shenzhen-Hong Kong Stock Connect and Northbound Trading of Swap Connect, contributing to the high-level opening-up of Chinese mainland financial markets and the prosperity and development of financial markets in the Chinese mainland and Hong Kong. At the same time, the Group continued to strengthen collaboration with BOC's entities in the Asia-Pacific region. It assisted BOC Singapore Branch to become the exclusive lead underwriter for the offshore RMB bond issuance of the International Finance Corporation, thus making greater contributions to promoting RMB internationalisation and serving sovereign issuers.

Expanding the depth and breadth of cross-border business and continuing to act as a pioneer in cross-boundary financial services

The Group continued to strengthen the innovation and promotion of RMB products and actively cultivated the offshore RMB market. It enhanced its RMB trading capabilities, improved related products and services and bolstered risk management in Southeast Asia. BOC Thailand actively promoted its treasury business to customers, while the Vientiane Branch launched foreign exchange swap services. The Jakarta Branch achieved stable business progress in RMB Bond Connect, while its RMB clearing volume have now ranked top in the local market for ten consecutive years. As the RMB clearing banks for Malaysia and the Philippines respectively, BOC Malaysia and the Manila Branch further enhanced local RMB infrastructure to improve local RMB clearing business. The Group continued to promote the development of the Cross-border Interbank Payment System (CIPS) and the gradual expansion of RMB usage in the region. BOC Thailand was granted a direct participating bank qualification by the CIPS, allowing it to further simplify RMB business processing procedures, while continuing to assist its Southeast Asian banking peers in applying for indirect participating bank qualifications. During the period, BOCHK and the Manila Branch were respectively recognised as Best Renminbi Bank in Hong Kong and Best Renminbi Bank in the Philippines by *The Asset* in its Triple A Treasurise Awards 2023.

Maintaining a solid and risk-aware investment strategy and promoting sustainable business development

The Group adopted a cautious approach to managing its banking book investments and closely monitored worldwide interest rate adjustments. It responded to market volatility promptly and sought fixed-income investment opportunities to enhance returns. The Group also enriched its product mix to meet market demand for diversified green finance solutions. In addition, it executed its first green RMB reverse repo transaction during the period, with the funds obtained used to support sustainable development projects.

MANAGEMENT DISCUSSION AND ANALYSIS

Steadily developing its asset management business and proactively capturing investment opportunities for clients

BOCHK Asset Management Limited ("BOCHK AM") stepped up its efforts to develop the Group's asset management business steadily, leveraging its professional investment service capabilities to offer customers a diverse range of asset management products to meet their investment needs. During the period, BOCHK AM launched the BOCHK All Weather HKD Money Market Fund, its first public money market fund providing investors with a new cash management option. It also participated in the listing of the BOCHK Greater Bay Area Climate Transition ETF on the main board of The Stock Exchange of Hong Kong Limited. As the first ESG themed exchange-traded fund ("ETF") in the Hong Kong market that tracks an ESG index with investments in the Guangdong-Hong Kong-Macao Greater Bay Area, this ETF helps investors to capture economic growth opportunities driven by climate transition in the GBA. In recognition of its professional expertise, BOCHK AM was awarded Best RMB Manager at the Best of the Best Awards – Hong Kong in 2023 by *Asia Asset Management*, and was also named Best-in-Class of China Fixed Income, Outstanding Achiever of Asia Fixed Income and Outstanding Achiever of RMB Fixed Income in the house award category at the Fund of the Year Awards 2022 organised by *BENCHMARK*.

Insurance

Financial Results

In the first half of 2023, the Group's insurance segment focused on optimising its product structure and actively promoting new products with higher value-add, which contributed to an increase in the value of new business of 9.0% year-on-year to HK$1,050 million. Profit before tax amounted to HK$617 million, compared to a loss before tax of HK$730 million for the same period last year. This was mainly attributable to market interest rate movements causing an increase in the mark-to-market value of debt securities investments this year. Insurance service result increased by 10.9% year-on-year.

Business Operations

Continuously optimising business structure and establishing wellness ecosystems

BOC Life continued to focus on driving the sales of products with higher value of new business. It collaborated with relevant units within the Group to launch the "Star Legacy Private Wealth Whole Life Plan", providing the Group's "Private Wealth" customers with a one-stop insurance solution covering life insurance protection, wealth appreciation and wealth inheritance, with the aim of meeting high-net-worth customers' increasing demand for wealth inheritance and protection services. BOC Life also developed its distribution channels by deepening its collaboration within the Group and proactively recruiting talent to build its professional tied agency workforce. Meanwhile, BOC Life launched the second phase of the "Live Young Rewards App" in June. Through an innovative and agile approach, the app deployed big data applications and integrated BOC Life's insurance service experience into different health scenarios, driving the development of an elderly care ecosystem. As at the end of June 2023, the app had accumulated more than 80,000 members. BOC Life continued to incorporate ESG elements into its strategic planning and business operations, promoting cross-industry collaborations to advance sustainable development and create shared value and win-win situations with the society. It deployed positive screening to identify ESG-related opportunities in its investment decisions and strictly adhered to practices set out by the World Green Organisation to enhance sustainability in workplaces, including the "Green Office" and "Eco-Healthy Workplace" labelling programmes. Furthermore, BOC Life strengthened its digital customer services to deliver a more seamless experience and reduce paper consumption. It collaborated with the government, business sector and non-profit organisations to organise comprehensive programmes for corporate charity and green development, supporting sustainable development in education, environment, youth, the underprivileged and local communities. This helped to enhance BOC Life's brand influence and create win-win situations for all parties in society. The "BOC Life New Generation Financial and Technology Designers' Programme" promotes STEAM education, benefitting approximately 310 underprivileged students from 11 schools since its inception in 2021. During the period, BOC Life continued to promote sports development in Hong Kong through title sponsorships of the Hong Kong Premier League and FIFAe Nations Series 2023™ – HKFA eFootball Open. In addition, more than 90% of BOC Life's staff were registered as corporate volunteers who actively participated in various CSR events aimed at building a harmonious and inclusive society. BOC Life remained committed to foster an ESG-centric corporate culture, organising the "Corporate Sustainability Seminar Series" to encourage staff to learn about ESG implementation by inviting experts from various industries to share their experiences and outlooks.

Actively fostering cross-border business and promoting insurance market connectivity in the Greater Bay Area

BOC Life capitalised on the border reopening between the Chinese mainland and Hong Kong, seeking to gain first-mover advantage by launching a series of business projects. These included setting up a new customer service centre at a prime location in Tsim Sha Tsui to facilitate the visits of customers from the Chinese mainland, collaborating within the Group to reserve bank account opening quotas for Chinese mainland customers referred by brokers and tied agents, and actively participating in the preparatory work for establishing insurance service centres in the Guangdong-Hong Kong-Macao Greater Bay Area, with a view to promoting the connectivity of insurance markets in the region.

Winning wide recognition for service excellence

BOC Life's excellence in insurance products and services was widely recognised by customers and the market during the period, including three accolades in the 10Life 5-Star Insurance Award 2022 for its whole life critical illness, savings (education and retirement) and whole life insurance solutions. In addition, in recognition of its efforts in driving corporate philanthropy and promoting the sustainable development of society, it was awarded the Brand Value – Award for Excellence in Community Contribution in the Awards for Excellence in Finance 2023 organised by *Ming Pao*, as well as the Gold Award in the 2022-2023 Web Accessibility Recognition Scheme.

Southeast Asian Business

The Group's Southeast Asian entities* recorded steady business growth. As at the end of June 2023, deposits from customers and advances to customers amounted to HK$75,364 million and HK$54,263 million respectively, up 8.4% and 4.8% from the end of last year, excluding the impact of foreign exchange rates. Driven by an improvement in net interest margin, net operating income before impairment allowances stood at HK$2,021 million, an increase of 40.7% year-on-year, excluding the impact of foreign exchange rates. As at the end of June 2023, the non-performing loan ratio was 2.44%, down 0.05 percentage points from the end of 2022.

* Referring to the nine Southeast Asian entities of 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.

Optimising regional business layout and continuously enhancing management of its Southeast Asian entities

The Group continued to push forward integrated regional development while adopting market-by-market strategies to guide a differentiated management approach across its regional entities. To enhance the management of its Southeast Asian entities, it deepened its regional management model and regularly reviewed the progress of its regional development sub-plan, so as to ensure improvements in related indicators and strategic measures. The Group continuously improved its network efficiency. It successfully completed the relocation and business commencement of the Loei Branch of BOC Thailand and pushed forward other network relocations in an orderly manner. To further enhance its regional management, it steadily promoted the centralisation of its Southeast Asian operations and gradually accelerated its service migration to the Regional Operation Centre in Nanning, Guangxi.

Adhering to "bottom line" thinking in risk management so as to continuously strengthen regional capabilities

The Group continued to strengthen its post-pandemic regional risk management, adhered to the implementation of the "Three Lines of Defence" control mechanism, and provided professional guidance to its Southeast Asian entities. To ensure robust risk management and maintain safe regional business operations, it closely monitored regional market developments and their impacts on each entity. It further strengthened its Southeast Asian entities' credit risk management, refined the credit approval process and prudently defined credit solutions. The Group also regularly reviewed and optimised each entity's credit portfolio and asset quality. It conducted ad-hoc risk reviews on the assessment, rescheduling, collection and recovery of non-performing loans in order to ensure stable asset quality, thus ensuring synergistic effect between business development and risk management. Moreover, it enhanced its Southeast Asian entities' risk management capabilities in market risk, interest rate risk and liquidity risk to ensure that their operations comply with local regulatory requirements. The Group also made use of its system and technological advantages to further strengthen its Southeast Asian entities' risk control capabilities in compliance, anti-money laundering and anti-fraud.

Digital Transformation Development

In the first half of 2023, the Group remained committed to pushing forward its "BOCHK 2021-2025 Digital Transformation Strategy", working diligently to enhance the core support capacity of its technological foundations and drive digital transformation, and establishing robust working mechanisms and workflows to facilitate high-quality and sustainable development. Upholding its customer-centric philosophy, the Group utilised data, business intelligence and ecological approaches to deepen its digital transformation. It developed ecological, open and scenario-based banking services, offering customers integrated products and services, alongside a seamless process experience. Focusing on its three core markets, the Group deepened technological empowerment, fostered an innovative corporate culture, and nurtured digital talent, thus providing its customers and staff with high-quality services and experiences while laying a solid foundation for its long-term development.

Developing ecological, open and scenario-based banking services

The Group harnessed the potential of different customer segments and ecologies to develop digital services, providing customers with a variety of e-payment options for daily consumption and travelling needs. The number of BoC Pay customers witnessed continuous growth as the Group capitalised on the HKSAR Government's Consumption Voucher Scheme and launched a series of marketing campaigns. As at the end of June 2023, the number of BoC Pay users had increased by 10% compared with the end of last year, while total transaction volumes in the first half of 2023 recorded year-on-year growth of 24%. Taking advantages of the synergies between BoC Bill and BoC Pay, the Group accelerated the development of smart travel in Hong Kong by launching a BoC Pay QR travel code service to facilitate payments for the HKeToll Free-Flow Tolling Service launched by the Transport Department of the HKSAR Government, as well as the city's main bus and tram services. Furthermore, the Group launched the third phase of its Open Application Programme Interface ("API") applications to cater the needs of corporate and personal customers, with over 100 Open APIs in the current stage to meet the needs of different customers. The total number of registered partners reached 427, covering a range of services, including payment, supply chain, enquiry, payment collection, treasury and factoring. As a result, it achieved a market-leading position in terms of Open API scale. The Group enhanced its financial services reach in the local market by applying innovative fintech to scenario-based applications, including its major home purchase, education and wellness scenario-based ecosystems.

Promoting integrated products and services

The Group promoted financial market connectivity between the Chinese mainland and Hong Kong while developing high-quality financial products and services. It accelerated the development of e-CNY by launching the second phase of its e-CNY Exclusive Experience in collaboration with BOC, and increased promotions targeting small amount and high-frequency scenarios to encourage more customers to use e-CNY payments. The Group also facilitated the development of RMB cross-border payment business by promoting the use of CIPS connector. It optimised its regional product offering and enhanced the service capability of its iGTB platform in Southeast Asian countries so as to provide comprehensive online services for local and cross-border corporates in the region. It also launched iGTB regional e-commerce services, allowing customers to handle letters of credit and guarantees through online banking. To further enhance the service experience for personal customers, the Group strived to provide end-to-end digital services, continually optimised its mobile banking experience and expanded its product range. In the first half of 2023, it launched the Hospital Authority Enhanced Home Loan Interest Subsidy Scheme module within its Home Expert mobile application, allowing Hospital Authority customers to complete the entire process of home purchasing through the app, including property search, loan capacity calculation, property valuation, mortgage application, document submission, and approval result enquiry. It also provided one-day express approval service to enhance customer experience.

Providing a seamless process experience

The Group continued to strengthen its intelligent operations and digital transformation by providing customers with seamless, omni-channel services to further enhance customer experience. Continuous training was deployed to its Virtual Assistant Bonnie so as to realise "conversational banking", which enables smooth diverting of customers to "Online Chat" service and mobile banking, creating an integrated omni-channel digital customer journey. It focused on integrating between products and services along the value chain to provide customers with one-stop product and service solutions, based on a deep understanding of the integrated needs of corporate customers that underpin its existing products. Its iGTB platform provided corporate customers with various account and transaction information, including real-time enquiry, e-Advice and customised reports, meeting their corporate financial management needs. The Group deepened the regional development of its iGTB platform, launching real-time fraud monitoring to the Manila Branch and BOC Malaysia, enhancing the beneficiary address for the Manila Branch, offering more choices for telegraphic transfer payment purposes in the Jakarta Branch, and optimising the display rules for beneficiary names for BOC Thailand's PromptPay service. These efforts aimed to provide comprehensive digital corporate financial services to local enterprises and corporates in Southeast Asia and enhance the Group's operational efficiency in the region.

Improving innovative mechanisms and cultivating talented teams

The Group laid solid foundations for its long-term development through various ways, which included refining its policies and systems related to digital transformation, optimising agile methodologies, deepening technological empowerment, cultivating digital talent and fostering an innovative culture. To meet its strategic needs, the Group actively acquired digital-savvy and IT-related talents through various channels, such as market and campus recruitment, cross-industry hiring, collaboration with external organisations and academic institutions, specialised internships, and technology and innovation competitions. To continue to enhance digital transformation capability of all staff and foster Group-wide digital talent development, it launched specialised and stratified training programmes, as well as scheduled learning plans as part of its "Go Digital・The Quintet of Digital Transformation Learning Series", which included executive talks, hands-on agile tools workshops, digitalisation-related professional certifications, a digital transformation resources gallery, and e-learning courses comprising real case studies. The Group supported potential staff members to take part in the "Enhanced Competency Framework for Banking Practitioners – Fintech module" launched by the HKMA to enhance practitioners' standards of competence, and arranged internal and external training to support the talent development of digital professionals. In addition, it continued to organise "BOCHK Challenge 2023", covering five of the most popular technological fields, to encourage students from higher education institutions in Hong Kong and working professionals in start-up enterprises to fully unleash their potential. The competition aimed to explore new business models by adopting cross-boundary technologies, strengthening BOCHK's new digital banking image.

Deepening technological empowerment to enhance operational efficiency

To maximise back-office efficiency, the Group accelerated the use of intelligent technology applications and pushed forward the automation and integration of its operations. During the period, it deepened the application of robotic process automation to enhance internal process efficiency. Collaborating with frontline units, it reinforced process optimisation and innovation to realise end-to-end process digitalisation and transformation. The Group continuously pushed forward the expansion of its Regional Operation Centre in Nanning, Guangxi and improved its process migration ratio to achieve a more cost-effective operating model. It reinforced its intelligent risk and anti-fraud management capability by utilising artificial intelligence and robotic process automation to further enhance its intelligent anti-fraud platform. It integrated the intelligent anti-fraud model into its business operations and conducted real-time risk control of credit card transactions in an effort to utilise technology to improve the fraud prevention management and monitoring of e-channels transactions. During the period, BOCHK was awarded Best Big Data and Analytics Initiative at the Global Excellence in Retail Financial Services Awards 2023 organised by *The Asian Banker*.

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 comprehensive risk and 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 senior management is responsible for the implementation of comprehensive risk management and various types of risk management. The Chief Executive ("CE") is responsible for managing the Group's comprehensive and 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") assists 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 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 customer credit ratings in the internal model are classified into 27 grades. The lowest (27th) credit grading equates to defaulted customers while the others are assigned to non-defaulted customers. The quantitative and qualitative criteria considered in determining significant credit deterioration include:

Quantitative criteria

- Failure to make payments of principal or interest 30 days after the contractual due dates;

- At the reporting date, the credit risk is deemed to increase significantly when the remaining lifetime PD rises by more than a certain range from initial recognition, and reflected as a drop in customer's credit rating by corresponding level according to the different PD at initial recognition. In majority cases, there is a significant increase in credit risk when the customer's credit rating drops by 5 grades.

Qualitative criteria

- Significant adverse change in debtor's operations or financial status;

- Customers with sign of credit deterioration are put into watchlist for staging review.

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 four economic scenarios in the ECL measurement, including "Good", "Baseline", "Bad" and "Alternative" scenarios, to meet the requirements of HKFRS 9. The "Baseline" scenario represents a most likely outcome. "Good" and "Bad" scenarios represent the estimated deviations of the "Baseline" scenario, which are either more optimistic or more pessimistic as compared with "Baseline" scenario. The "Alternative" scenario represents a more pessimistic scenario than the "Bad" scenario, to reflect the Management's view on severe downside risks of the idiosyncratic events that may have severe impact on the performance and asset quality of the credit portfolio, when the Management considers the risk cannot be fully reflected in the three scenarios (i.e. "Good", "Baseline" and "Bad" scenarios) derived from forecasts and historical data.

The "Baseline" and "Alternative" scenarios are prepared by the Group's Economics & Strategic Planning Department. Historical data, economic trend, external economic forecast from governmental and non-governmental organisation, etc. are also used as reference benchmarks to ensure the "Baseline" scenario is reasonable and supportable. For the "Good" and "Bad" scenarios, the Group makes reference to the historical macroeconomics data for estimating the deviations. The "Alternative" scenario reflects the Management's review of the tail of the economic distribution, incorporating a number of risk events, including further escalation of geopolitical tensions coupled with other uncertainties, worsening of global supply chains, rising global inflation rate, the monetary tightening policy of Central Banks and interest rate hikes which eventually pose a significant pressure on economy.

MANAGEMENT DISCUSSION AND ANALYSIS

The core macroeconomic factor in the major countries/regions the Group operates such as Gross Domestic Product growth, and other key macroeconomic factors such as 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", "Bad" and "Alternative" scenarios to reflect the less likely outcomes. As of June 2023, the probability weight of the Group's "Baseline" scenario is higher than the sum of probability weight of "Good", "Bad" and "Alternative" scenarios.

The core macroeconomic factor used by the Group to assess ECL:

Macroeconomic Factor	Good Scenario	Baseline Scenario	Bad Scenario	Alternative Scenario
2023 Hong Kong GDP Growth	7.00%	3.50%	0.00%	-5.50%

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 result 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.

As at 30 June 2023, the ECL will be increased by 1.59% if 5% of the probability weight is shifted from "Baseline" scenario to "Bad" scenario; and will be decreased by 0.81% if 5% of the probability weight is shifted from "Baseline" scenario to "Good" scenario.

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, credit spreads, 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 from structural positions. 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 key 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 key 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 business units 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, etc.

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 2023, 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 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 business units 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 all banking products, activities, processes and systems 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, self checking, self correction and self development. 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, reviewing and contributing to the monitoring and reporting the overall operational risk profile to the Management and RMC. Specialist functional units are required to carry out their leading managerial duties of the second line of defence with respect to some specific aspects of operational risk and its related issues. Apart from 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 risk-based review 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, etc. 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 managed and monitored by the Financial Crime Compliance Department ("FCC"). Both LCO and FCC report directly to the CRO. 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 and prospective 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. The 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.

The HKMA has classified BOCHK as a material subsidiary of the BOC resolution group and required BOCHK to comply with the applicable internal loss-absorbing capacity requirements under the Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules ("LAC Rules"), with compliance period starting from 1 January 2023.

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) as defined under the Insurance Ordinance 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 and fund price risk, currency risk and compliance 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.

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 unpaid insurance contract 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 or issuer. Such limits are subject to review by the Management at least once a year.

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. Management of 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.

Equity and fund price risk management

BOC Life's equity and fund 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 management framework includes managing the adverse impact due to exchange rate movement through stress test, exposure limit and risk limit.