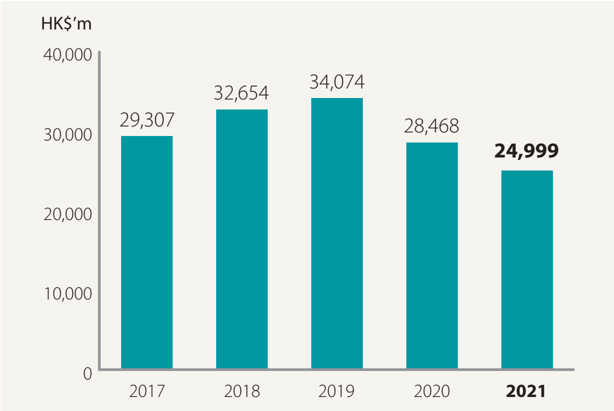
Management Discussion and Analysis

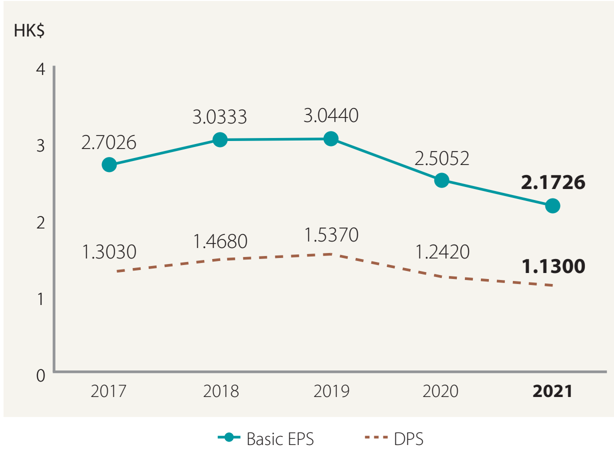
Financial Performance and Conditions at a Glance

The following table is a summary of the Group's key financial results for 2021 in comparison with the previous four years. The average value of the Group's liquidity coverage ratio and net stable funding ratio for 2021 are reported on a quarterly basis.

Profit For The Year[1]



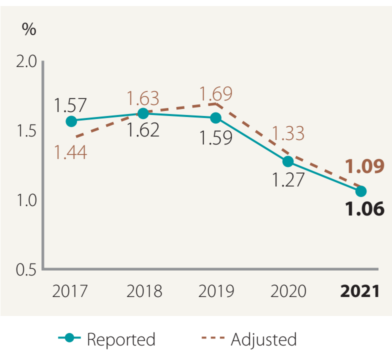
Basic Earnings Per Share ("Basic EPS")[1] and Dividend Per Share ("DPS")[2]



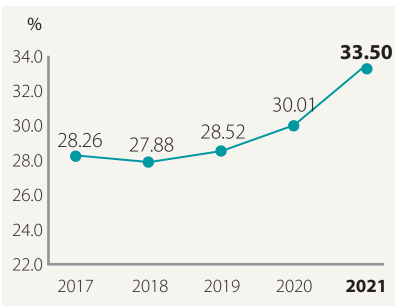
Profit for the year

- Profit for the year decreased by 12.2% year-on-year to HK$24,999 million. Return on average shareholders' equity[3] ("ROE") and return on average total assets[3] ("ROA") stood at 7.67% and 0.70% respectively. Basic EPS was HK$2.1726. DPS was HK$1.1300.

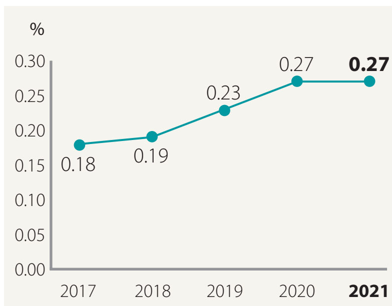
Net Interest Margin ("NIM")[1]



Cost to Income Ratio[1]



Classified or Impaired Loan Ratio[1,4]



as at 31 December

Net interest margin ("NIM") narrowed amid record low market interest rates

- NIM was 1.06%. If the funding income or cost of foreign currency swap contracts[5] were included, NIM would have been 1.09%, down 24 basis points year-on-year, mainly due to a decrease in asset yields resulting from a persistently low interest rate environment. The Group proactively managed its assets and liabilities, which contributed to solid growth in advances to customers and an improved mix of deposits from customers, partially offsetting the aforementioned negative impacts.

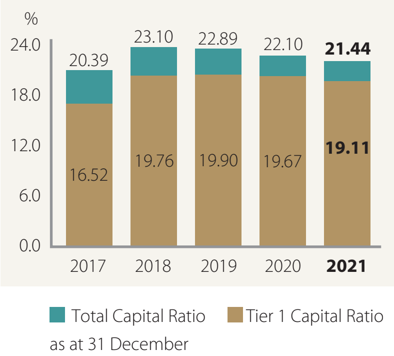
Maintaining high levels of operational efficiency through strengthened cost management

- Cost to income ratio was 33.50%. The Group strengthened cost management while ensuring ongoing investment in its strategic priorities and the implementation of low-carbon operation initiatives. Operating expenses increased slightly by 0.4% as a result, maintaining the Group's cost to income ratio at a satisfactory level relative to industry peers.

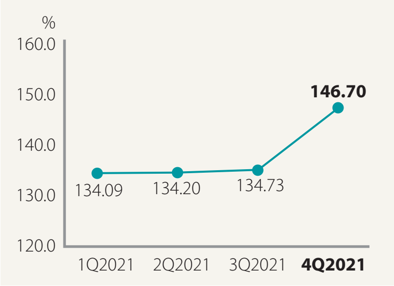
Maintaining benign asset quality through prudent risk management

- The classified or impaired loan ratio was 0.27%, which was unchanged from last year and remained below the market average.

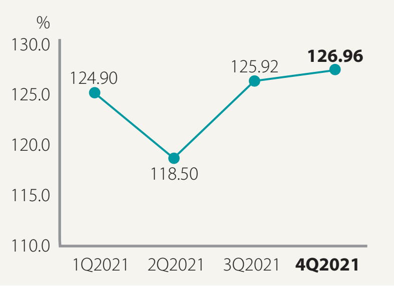
Capital Ratio



Average Value of Liquidity Coverage Ratio



Quarter-end Value of Net Stable Funding Ratio



Strong capital position to support stable business growth

- The Group's tier 1 capital ratio was 19.11% and its total capital ratio was 21.44%.

Liquidity remained ample

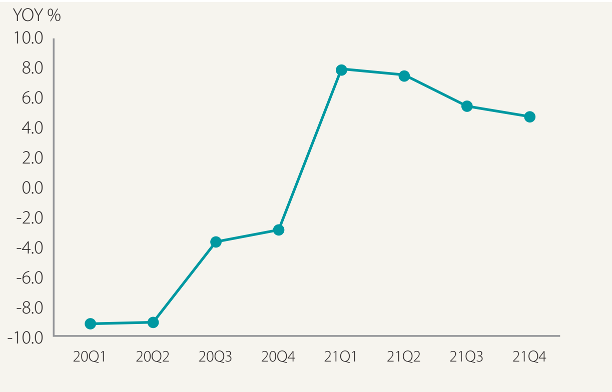
- The average value of the Group's liquidity coverage ratio and the quarter-end value of its net stable funding ratio in each quarter of 2021 exceeded regulatory requirements.

1. Financial information is from continuing operations.
2. Excluding special dividend.
3. Return on average shareholders' equity and return on average total assets as defined in "Financial Highlights".
4. 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.
5. Foreign exchange swap contracts are normally used for the Group's liquidity management and funding activities. In foreign exchange swap contracts, the Group exchanges one currency (original currency) for another (swapped currency) at the spot exchange rate (spot transaction) and commits to reverse the spot transaction by exchanging the same currency pair at a future maturity date at a predetermined rate (forward transaction). In this way, surplus funds in the original currency are swapped into another currency for liquidity and funding purposes with minimal foreign exchange risk. The exchange difference (funding income or cost) between the spot and forward contracts is recognised as a foreign exchange gain or loss (as included in "net trading gain"), while the corresponding interest differential between the surplus funds in the original currency and swapped currency is reflected in net interest income.

Economic Background and Operating Environment

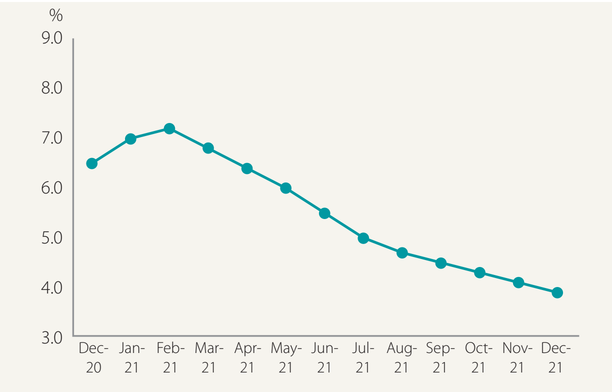
The COVID-19 pandemic situation continued to be volatile in 2021, leaving countries around the world seeking a balance between containing the virus and reviving their economies. The pace of economic recovery varied across different countries. Economic recovery in the US was faster than in other advanced economies, and the Federal Reserve began its planning for scaling down its asset purchase programme amid inflationary pressure. The accommodative monetary policy maintained by the European Central Bank continued to lend support to economic recovery in the Eurozone. The Chinese mainland effectively contained the pandemic, with major economic indicators staging a relatively resilient recovery and exports and imports registering particularly rapid growth. Southeast Asian economies showed signs of recovery amid satisfactory growth in exports. However, political upheavals in certain countries adversely impacted the region's economic recovery path.

Hong Kong GDP Growth Rate



Source: HKSAR Census and Statistics Department

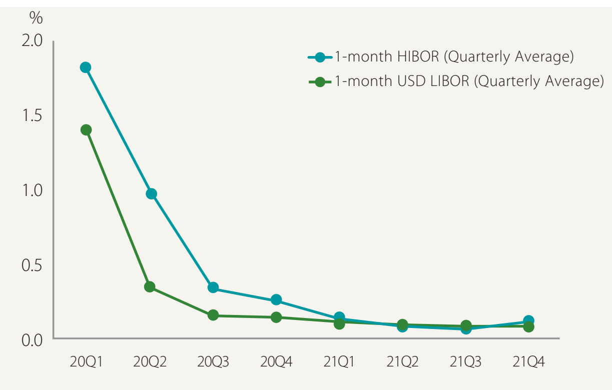
Hong Kong Unemployment Rate



Source: HKSAR Census and Statistics Department

Labour market conditions improved in Hong Kong as the unemployment rate declined from high levels. Domestic consumption and investment activities resumed, boosted by the HKSAR Government's Consumption Voucher Scheme. Hong Kong's merchandise trade performance improved owing to rising demand from the world's major economies. However, inbound tourism was still severely affected by the global pandemic, taking a toll on Hong Kong's economic recovery.

HIBOR and USD LIBOR



Source: Bloomberg

The exchange rate of the Hong Kong dollar against the US dollar weakened during the year. Despite falling below HKD7.8 to USD1 at one point, it largely remained close to the strong-side Convertibility Undertaking. The liquidity of the banking sector remained ample, with the average 1-month HIBOR and 1-month USD LIBOR dropping from 0.85% and 0.52% respectively in 2020 to 0.10% and 0.10% respectively in 2021.

Hong Kong stock market performance was volatile during the year under review. The Hang Seng Index climbed notably in the beginning of 2021 amid anticipation of a global economic recovery. Against the backdrop of increased secondary listings by Chinese enterprises in Hong Kong, the total amount of funds raised and the average daily trading volume of the stock market increased by 3.2% and 28.8% respectively compared to the previous year. As the year went on, however, the stock market became volatile and trended downwards amid worldwide spread of COVID-19 variants, increasing inflationary pressures, the accommodative monetary policy stances of central banks, and uncertain changes to regulatory requirements. As at the end of 2021, the Hang Seng Index was down 14.1% compared with the end of the previous year.

The Hong Kong residential property market developed steadily, and residential property prices remained largely stable amid the easing of monetary policies by major central banks around the world, the continued low interest rate environment for the Hong Kong dollar, and the recovery of the Hong Kong economy. The HKSAR Government continued to implement demand-side management measures and the HKMA maintained prudent supervisory measures on mortgage loans. The asset quality of banks' mortgage businesses remained stable. Furthermore, the commercial property market generally improved, with the sector witnessing an increase in rental costs, prices and transaction volumes in general as well as a slight decline in vacancy rates, although the Grade-A office market remained weak.

Despite challenges in the macroeconomic environment, the banking industry continues to enjoy enormous development opportunities. The Southbound Trading under Bond Connect and Cross-Boundary Wealth Management Connect were launched successively in 2021, and will further promote mutual financial market access between the Chinese mainland and Hong Kong, expanding market horizons for the Hong Kong banking industry. In addition, the 14th Five-Year Plan recognises high-quality and technological innovation as key imperatives for the development of the Chinese mainland economy. Related demand for investment and financing will not only create tremendous business opportunities for the Hong Kong banking industry, but will also promote the development of green finance. At the same time, the official launch of the Chinese mainland's national carbon emissions trading market in July 2021 will push forward green and low-carbon development while injecting further impetus to the financial sector.

Consolidated Financial Review

Financial Highlights

HK$'m, except percentages	2021	2020	Change (%)
Net operating income before impairment allowances	**48,982**	54,474	(10.1)
Operating expenses	**(16,407)**	(16,347)	0.4
Operating profit before impairment allowances	**32,575**	38,127	(14.6)
Operating profit after impairment allowances	**30,430**	35,420	(14.1)
Profit before taxation	**29,968**	33,583	(10.8)
Profit for the year	**24,999**	28,468	(12.2)
Profit attributable to equity holders of the Company	**22,970**	26,487	(13.3)

In 2021, the banking sector remained under pressure from a complex and challenging operating environment characterised by an uncertain COVID-19 pandemic situation, historically low market interest rates and financial market volatility. The Group actively responded and captured market opportunities, offsetting the aforementioned negative impacts. In 2021, net operating income before impairment allowances was HK$48,982 million, a decrease of HK$5,492 million or 10.1% year-on-year. This was mainly due to a year-on-year decrease in net interest income, as asset yields were under pressure amid a persistently low interest rate environment, and to a higher base for comparison owing to a higher gain from the disposal of debt securities investments last year. Nevertheless, the Group seized market opportunities amid satisfactory investor sentiment in the beginning of the year, and stepped up its efforts to enhance its comprehensive product and service capabilities. Net fee and commission income grew year-on-year as a result, partially offsetting the decrease in overall income. The Group continued to make investments to support solid and consistent business growth. Operating expenses were broadly unchanged, reflecting the Group's ongoing commitment to invest in its strategic priorities, while optimising its cost structure and promoting the concept of green banking. Meanwhile, the net charge of impairment allowances decreased and a lower net loss was recorded from fair-value adjustments on investment properties. Profit for the year amounted to HK$24,999 million, a decrease of HK$3,469 million or 12.2% year-on-year. Profit attributable to equity holders was HK$22,970 million, a decrease of HK$3,517 million or 13.3% year-on-year.

Second Half Performance

In the second half of 2021, the Group's net operating income before impairment allowances decreased by HK$1,118 million or 4.5%, compared to the first half of 2021. This was mainly due to a drop in net fee and commission income, caused by a decrease in investment-related and loan commission income. Meanwhile, operating expenses increased from the first half of the year. As a result, the Group's profit after taxation decreased by HK$2,183 million or 16.1% on a half-on-half basis.

Income Statement Analysis

Net Interest Income and Net Interest Margin

HK$'m, except percentages	2021	2020	Change (%)
Interest income	**40,298**	49,928	(19.3)
Interest expense	**(8,357)**	(15,190)	(45.0)
Net interest income	**31,941**	34,738	(8.1)
Average interest-earning assets	**3,015,219**	2,737,726	10.1
Net interest spread	**1.00%**	1.16%	
Net interest margin	**1.06%**	1.27%	
Net interest margin (adjusted)*	**1.09%**	1.33%	

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

Net interest income amounted to HK$31,941 million in 2021. If the funding income or cost of foreign currency swap contracts# were included, net interest income would have decreased by 9.4% year-on-year to HK$32,944 million. This was mainly due to a narrowing of net interest margin, partially offset by growth in average interest-earning assets.

Average interest-earning assets expanded by HK$277,493 million or 10.1% year-on-year. Advances to customers and debt securities investments increased, driven by growth in deposits from customers and interbank funding.

If the funding income or cost of foreign currency swap contracts were included, net interest margin would have been 1.09%, down 24 basis points year-on-year. This was mainly due to a substantial drop in market interest rates which resulted in a decline in the average yield of debt securities investments and other debt instruments, and intense market competition for deposit business that resulted in a narrowing of the loan and deposit spread. The Group proactively managed its assets and liabilities in response to the prolonged period of low interest rates, resulting in an increase in higher-yielding assets, including solid growth in advances to customers and increased investments in capital market debt securities, as well as continuous improvement in the mix of deposits from customers, reflected in a higher average CASA ratio. All of these factors partially offset the aforementioned negative impacts.

Second Half Performance

Compared with the first half of 2021, the Group's net interest income would have increased by HK$436 million or 2.7% if the funding income or cost of foreign currency swap contracts were included. This was mainly due to growth in average interest-earning assets. The loan and deposit spread and the average yield of debt securities investments and other debt instruments decreased amid further decline in market interest rates, causing net interest margin to narrow 2 basis points to 1.08%.

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:

	2021		2020	
ASSETS	Average balance HK$'m	Average yield %	Average balance HK$'m	Average yield %
Balances and placements with banks and other financial institutions	383,631	0.82	351,515	0.88
Debt securities investments and other debt instruments	1,015,239	1.26	849,401	1.76
Advances to customers and other accounts	1,600,436	1.52	1,518,246	2.08
Other interest-earning assets	15,913	0.75	18,564	1.20
Total interest-earning assets	3,015,219	1.34	2,737,726	1.82
Non interest-earning assets	574,040	–	557,334	–
Total assets	3,589,259	1.12	3,295,060	1.51

LIABILITIES	Average balance HK$'m	Average rate %	Average balance HK$'m	Average rate %
Deposits and balances from banks and other financial institutions	250,428	0.65	198,804	0.56
Current, savings and time deposits	2,188,701	0.30	2,082,314	0.65
Subordinated liabilities	–	–	1,452	5.51
Other interest-bearing liabilities	19,820	0.60	28,917	1.27
Total interest-bearing liabilities	2,458,949	0.34	2,311,487	0.66
Shareholders' funds* and other non interest-bearing deposits and liabilities	1,130,310	–	983,573	–
Total liabilities	3,589,259	0.23	3,295,060	0.46

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

Net Fee and Commission Income

HK$'m, except percentages	2021	2020	Change (%)
Securities brokerage	**3,743**	3,567	4.9
Loan commissions	**2,746**	2,310	18.9
Credit card business	**2,141**	1,859	15.2
Insurance	**1,529**	1,272	20.2
Trust and custody services	**764**	689	10.9
Payment services	**751**	740	1.5
Funds distribution	**724**	767	(5.6)
Bills commissions	**623**	591	5.4
Safe deposit box	**306**	306	–
Funds management	**161**	130	23.8
Currency exchange	**119**	226	(47.3)
Others	**1,196**	1,058	13.0
Fee and commission income	**14,803**	13,515	9.5
Fee and commission expense	**(2,931)**	(2,673)	9.7
Net fee and commission income	**11,872**	10,842	9.5

In 2021, net fee and commission income amounted to HK$11,872 million, up HK$1,030 million or 9.5% year-on-year. The Group captured market opportunities amid satisfactory market investor sentiment in the beginning of the year, leading to growth in commission income from insurance and securities brokerage of 20.2% and 4.9% respectively. It continued to push forward diversification in developing its funds management business, which led to an increase of 23.8% in related commission income. Commission income from credit card business and bills increased by 15.2% and 5.4% respectively, as both retail spending and import and export trade regained momentum following the resumption of economic activity in Hong Kong and the stimulus brought about by the rollout of the HKSAR Government's Consumption Voucher Scheme. Loan commission income also rose by 18.9%. The Group recorded a 10.9% increase in commission income from trust and custody services by taking advantage of business opportunities arising from mutual market access schemes, further optimising the customer experience, enriching its custodian products and deepening its corporate trust and agency business, all of which led to an increase in the scale of assets under management in its trust and custody services. In addition, commission income from payment services rose by 1.5% as a result of the Group's efforts to accelerate the development of its cash management business, with satisfactory growth achieved in its cash pooling business. However, commission income from currency exchange dropped 47.3% as global demand for banknotes remained weak owing to the pandemic. Commission income from funds distribution also decreased by 5.6%. Fee and commission expenses increased, mainly due to an increase in credit card related expenses as a result of higher business volume.

Second Half Performance

Compared with the first half of 2021, net fee and commission income decreased by HK$1,442 million or 21.7%, mainly owing to a decrease in commission income from securities brokerage, funds distribution and funds management amid weakened market investor sentiment in the second half of 2021. Loan commissions also decreased. However, commission income from credit card business, insurance, trust and custody services, payment services and currency exchange increased as the economy gradually recovered, which partially offset the overall decline in fee and commission income. Fee and commission expenses remained stable as compared with the first half of the year.

Net Trading Gain

HK$'m, except percentages	2021	2020	Change (%)
Foreign exchange and foreign exchange products	4,725	5,282	(10.5)
Interest rate instruments and items under fair value hedge	(60)	(619)	90.3
Equity and credit derivative instruments	251	150	67.3
Commodities	175	361	(51.5)
Total net trading gain	5,091	5,174	(1.6)

Net trading gain amounted to HK$5,091 million, a decrease of HK$83 million or 1.6% year-on-year. If the funding income or cost of foreign currency swap contracts were excluded, net trading gain would have increased by 15.5% year-on-year to HK$4,088 million. This was attributable to a year-on-year growth in currency exchange income from customer transactions and a year-on-year decrease in net trading loss from interest rate instruments and items under fair value hedge, which resulted from changes in the mark-to-market value of certain debt securities investments and interest rate instruments owing to market interest rate movements. Net trading gain from equity and credit derivative instruments increased by HK$101 million, with higher income realised from equity-linked products amid satisfactory investor sentiment in the beginning of the year. Net trading gain from commodities decreased, mainly due to a lower gain from bullion transactions.

Second Half Performance

Compared with the first half of 2021, net trading gain increased by HK$383 million or 16.3%. If the funding income or cost of foreign currency swap contracts were excluded, net trading gain would have increased by 0.2% from the first half of the year to HK$2,046 million.

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

HK$'m, except percentages	2021	2020	Change (%)
Net (loss)/gain on other financial instruments at fair value through profit or loss	(1,136)	1,959	N/A

The Group recorded a net loss of HK$1,136 million on other financial instruments at fair value through profit or loss in 2021, as compared to a net gain of HK$1,959 million in 2020. The change was mainly due to a lower mark-to-market value of BOC Life's equity and debt securities investments, resulting from Hong Kong stock market volatility and market interest rate movements respectively, as well as a decreased gain from the disposal of debt securities investments by BOC Life. The abovementioned mark-to-market changes in BOC Life's debt securities investments were offset by changes to its policy reserves, also attributable to market interest rate movements, which were reflected in changes in net insurance benefits and claims as well as movements in liabilities.

Second Half Performance

A net loss of HK$1,232 million was recorded in the second half of the year, as compared to a net gain of HK$96 million in the first half. This change was mainly due to a lower mark-to-market value of BOC Life's equity and debt securities investments in the second half of the year.

Operating Expenses

HK$'m, except percentages	2021	2020	Change (%)
Staff costs	**9,542**	9,461	0.9
Premises and equipment expenses (excluding depreciation and amortisation)	**1,232**	1,235	(0.2)
Depreciation and amortisation	**3,039**	3,040	–
Other operating expenses	**2,594**	2,611	(0.7)
Operating expenses	**16,407**	16,347	0.4

	At 31 December 2021	At 31 December 2020	Change (%)
Staff headcount measured in full-time equivalents	**14,553**	14,915	(2.4)

Operating expenses amounted to HK$16,407 million, a slight increase of HK$60 million or 0.4% year-on-year. The Group strengthened its cost management while continuing to invest in its strategic priorities. It actively put its low-carbon and green operation initiatives into practice, optimised business flows and refined internal management, so as to enhance cost efficiency. The cost to income ratio was 33.50%, remaining at a satisfactory level relative to industry peers.

Staff costs increased by 0.9% year-on-year, remaining relatively stable.

Premises and equipment expenses decreased by 0.2%. Within this, investments in information technology increased, while other major related expenses decreased.

Depreciation and amortisation were relatively stable.

Other operating expenses decreased by 0.7%, mainly due to a decrease in business promotion, security, cleaning and printing expenses.

Second Half Performance

Compared with the first half of 2021, operating expenses increased by HK$1,243 million or 16.4%. The increase was mainly due to higher staff costs, more investment in information technology, and increases in charitable donations and professional consultancy fees. Marketing and promotional activities gradually increased during the second half, leading to an increase in related expenses.

Net Charge of Impairment Allowances on Advances and Other Accounts

HK$'m, except percentages	2021	2020	Change (%)
Stage 1	**465**	(898)	N/A
Stage 2	**(1,182)**	(754)	56.8
Stage 3	**(1,249)**	(837)	49.2
Net charge of impairment allowances on advances and other accounts	**(1,966)**	(2,489)	(21.0)

Total Loan Impairment Allowances as a Percentage of Advances to Customers

	At 31 December 2021	At 31 December 2020
Total loan impairment allowances as a percentage of advances to customers	**0.62%**	0.61%

In 2021, the Group's net charge of impairment allowances on advances and other accounts amounted to HK$1,966 million, a decrease of HK$523 million or 21.0% year-on-year. Impairment allowances at Stage 1 recorded a net reversal of HK$465 million, as compared to a net charge of HK$898 million last year. The parameter values of the Group's expected credit loss model improved in 2021, driven by the gradual recovery of the world's major economies. The change was also attributable to there being a higher base for comparison as a result of impairment allowances made last year, when the Group updated the parameter values of its expected credit loss model to take into consideration the outbreak of the COVID-19 pandemic, which seriously destabilised the global economy and led to the weakening of the macroeconomic outlook. Impairment allowances at Stage 2 recorded a net charge of HK$1,182 million, an increase of HK$428 million or 56.8% year-on-year, mainly owing to the Group taking into consideration potential client risks arising from pandemic relief measures as well as changes to the internal ratings of certain customers. Impairment allowances at Stage 3 amounted to a net charge of HK$1,249 million, an increase of HK$412 million year-on-year, mainly due to the downgrading of certain corporate advances, resulting in a higher net charge of impairment allowances. The credit cost of advances to customers was 0.12%, down 4 basis points year-on-year. As at 31 December 2021, the Group's total loan impairment allowances as a percentage of advances to customers was 0.62%.

Second Half Performance

Compared with the first half of 2021, the Group's net charge of impairment allowances on advances and other accounts decreased by HK$428 million. This decrease was attributable to there being a higher base for comparison, owing to impairment allowances made in the first half relating to the Group's higher loan growth and downgrading of certain corporate customers.

Analysis of Assets and Liabilities

The table below summarises the Group's asset composition. Please refer to Note 24 to the Financial Statements for the contract/notional amounts and fair values of the Group's derivative financial instruments. Please refer to Note 41 to the Financial Statements for the contractual amounts of each significant class of contingent liability and commitment and the aggregate credit risk-weighted amounts.

Asset Composition

	At 31 December 2021		At 31 December 2020		
HK$'m, except percentages	Amount	% of total	Amount	% of total	Change (%)
Cash and balances and placements with banks and other financial institutions	465,535	12.8	463,711	14.0	0.4
Hong Kong SAR Government certificates of indebtedness	203,810	5.6	189,550	5.7	7.5
Securities investments and other debt instruments[1]	1,167,770	32.1	940,699	28.3	24.1
Advances and other accounts	1,597,194	43.9	1,500,416	45.2	6.5
Fixed assets and investment properties	64,163	1.8	65,296	2.0	(1.7)
Other assets[2]	140,958	3.8	161,309	4.8	(12.6)
Total assets	3,639,430	100.0	3,320,981	100.0	9.6

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.

The total assets of the Group amounted to HK$3,639,430 million, an increase of HK$318,449 million or 9.6% compared with the end of 2020. Securities investments and other debt instruments increased by HK$227,071 million or 24.1%, as the Group increased investments in government-related bonds and bills. Advances and other accounts rose by HK$96,778 million or 6.5%, with advances to customers growing by HK$101,220 million or 6.8%, and trade bills falling by HK$2,562 million or 26.1%.

Advances to Customers

HK$'m, except percentages	At 31 December 2021 Amount	At 31 December 2021 % of total	At 31 December 2020 Amount	At 31 December 2020 % of total	Change (%)
Loans for use in Hong Kong	**1,083,205**	**67.7**	991,457	66.2	9.3
Industrial, commercial and financial	**581,799**	**36.4**	539,633	36.0	7.8
Individuals	**501,406**	**31.3**	451,824	30.2	11.0
Trade financing	**73,611**	**4.6**	66,497	4.4	10.7
Loans for use outside Hong Kong	**442,268**	**27.7**	439,910	29.4	0.5
Total advances to customers	**1,599,084**	**100.0**	1,497,864	100.0	6.8

Adhering to its customer-centric philosophy, the Group focused closely on customer needs while continuing to capture opportunities from its three major markets of Hong Kong, the Greater Bay Area and Southeast Asia. It enhanced the services offered to local corporate and personal clients in Hong Kong so as to meet the loan demands of its key customers. The Group expanded its mortgage business by enhancing cooperation with real estate agencies and mortgage intermediaries, as well as optimising the services available on its Home Expert mobile application, with a view to reinforcing its leading market position in mortgages. It proactively supported the HKSAR Government's various relief measures and helped its SME and personal customers to navigate the difficult times. At the same time, the Group steadily pushed forward its cross-border business by actively promoting integrated development in the Southeast Asian region and enhancing its collaboration with BOC's entities in the Greater Bay Area and Asia-Pacific region. During the year, the Group remained the top mandated arranger in the Hong Kong-Macao syndicated loan market and held the top market position in terms of the total number of new mortgage loans in Hong Kong. In 2021, advances to customers grew by HK$101,220 million, or 6.8%, to HK$1,599,084 million.

Loans for use in Hong Kong grew by HK$91,748 million or 9.3%.

- Lending to the industrial, commercial and financial sectors increased by HK$42,166 million or 7.8%, reflecting loan growth in property development and investment, information technology and stockbrokers.

- Lending to individuals increased by HK$49,582 million, or 11.0%, mainly driven by growth in residential mortgage loans and credit card advances.

Trade financing increased by HK$7,114 million or 10.7%. Loans for use outside Hong Kong grew by HK$2,358 million or 0.5%, mainly driven by growth in loans for use in the Chinese mainland.

Loan Quality

HK$'m, except percentages	At 31 December 2021	At 31 December 2020
Advances to customers	**1,599,084**	1,497,864
Classified or impaired loan ratio	**0.27%**	0.27%
Total impairment allowances	**9,877**	9,172
Total impairment allowances as a percentage of advances to customers	**0.62%**	0.61%
Total impairment allowances as a percentage of classified or impaired advances to customers	**228.58%**	229.64%
Residential mortgage loans[1] – delinquency and rescheduled loan ratio[2]	**0.01%**	0.01%
Card advances – delinquency ratio[2]	**0.23%**	0.23%

	2021	2020
Card advances – charge-off ratio[3]	**1.49%**	1.91%

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 year to average card receivables during the year.

In 2021, certain industries continued to face challenges in light of the volatile COVID-19 pandemic situation and the uneven global economic recovery. The Group proactively strengthened its risk management systems for all types of risks and continuously applied stringent risk management so as to maintain solid asset quality. As at 31 December 2021, classified or impaired loans amounted to HK$4,321 million, up HK$327 million from the end of last year. The classified or impaired loan ratio was 0.27%, remaining stable from the end of last year. The quality of the Group's residential mortgage loans and card advances remained sound.

Deposits from Customers

HK$'m, except percentages	At 31 December 2021		At 31 December 2020		Change (%)
	Amount	% of total	Amount	% of total	
Demand deposits and current accounts	**327,234**	**14.1**	310,226	14.2	5.5
Savings deposits	**1,194,094**	**51.2**	1,149,035	52.6	3.9
Time, call and notice deposits	**809,827**	**34.7**	724,448	33.2	11.8
Total deposits from customers	**2,331,155**	**100.0**	2,183,709	100.0	6.8

In 2021, the Group continued to enhance its mid to high-end customer base and strengthened cooperation with government authorities, large corporates, major central banks, international financial institutions and sovereign funds through a diversified range of services, including e-payment, payroll, cash management, cash pooling and IPO receiving bank services. At the same time, the Group capitalised on customer preferences for wealth management, insurance, equity securities and structured products within the context of a low interest rate environment, leading to steady growth of deposits from customers. At the end of 2021, total deposits from customers amounted to HK$2,331,155 million, an increase of HK$147,446 million or 6.8% from the end of the previous year. Demand deposits and current accounts increased by 5.5%. Savings deposits increased by 3.9%. Time, call and notice deposits increased by 11.8%. In 2021, the average CASA ratio was 71.0%, an increase of 7.0 percentage points from last year.

Capital and Reserves Attributable to Equity Holders of the Company

HK$'m, except percentages	At 31 December 2021	At 31 December 2020	Change (%)
Share capital	**52,864**	52,864	–
Premises revaluation reserve	**38,590**	38,048	1.4
Reserve for fair value changes	**(413)**	1,726	N/A
Regulatory reserve	**6,073**	4,780	27.1
Translation reserve	**(1,000)**	(503)	(98.8)
Retained earnings	**201,885**	193,387	4.4
Reserves	**245,135**	237,438	3.2
Capital and reserves attributable to equity holders of the Company	**297,999**	290,302	2.7

Capital and reserves attributable to equity holders of the Company amounted to HK$297,999 million as at 31 December 2021, an increase of HK$7,697 million or 2.7% from the end of last year. The premises revaluation reserve increased by 1.4%. Reserve for fair value changes moved from a surplus to a deficit, mainly due to the impact of market interest rate movements on debt instruments at fair value through other comprehensive income. The regulatory reserve increased by 27.1%, mainly due to an increase in advances to customers and a change in the net charge of impairment allowances. Retained earnings rose by 4.4% from the end of last year, mainly reflecting the profit achieved in 2021 after the distribution of dividends.

Capital Ratio

HK$'m, except percentages	At 31 December 2021	At 31 December 2020
Consolidated capital after deductions		
Common Equity Tier 1 capital	**224,189**	216,542
Additional Tier 1 capital	**23,476**	23,476
Tier 1 capital	**247,665**	240,018
Tier 2 capital	**30,174**	29,558
Total capital	**277,839**	269,576
Total risk-weighted assets	**1,296,153**	1,220,000
Common Equity Tier 1 capital ratio	**17.30%**	17.75%
Tier 1 capital ratio	**19.11%**	19.67%
Total capital ratio	**21.44%**	22.10%

As at 31 December 2021, Common Equity Tier 1 ("CET1") capital and Tier 1 capital increased by 3.5% and 3.2% respectively from the end of last year, which was primarily attributable to profits recorded for 2021. Total capital increased by 3.1%. Total risk-weighted assets ("RWAs") increased by 6.2%, mainly driven by growth in advances to customers. The CET1 capital ratio was 17.30% and Tier 1 capital ratio was 19.11%, down 0.45 and 0.56 percentage points respectively from the end of 2020, while the total capital ratio was 21.44%, down 0.66 percentage points from the prior year-end. The Group properly managed its capital plan so as to maintain an appropriate capital level for meeting stricter regulatory requirements and supporting sustainable business development while balancing returns to equity holders.

Liquidity Coverage Ratio and Net Stable Funding Ratio

	2021	2020
Average value of liquidity coverage ratio		
First quarter	**134.09%**	150.45%
Second quarter	**134.20%**	131.38%
Third quarter	**134.73%**	130.98%
Fourth quarter	**146.70%**	132.76%

	2021	2020
Quarter-end value of net stable funding ratio		
First quarter	**124.90%**	116.60%
Second quarter	**118.50%**	117.49%
Third quarter	**125.92%**	115.30%
Fourth quarter	**126.96%**	125.31%

The Group's liquidity position remained sound, with the average value of its liquidity coverage ratio and the quarter-end value of its net stable funding ratio exceeding the regulatory requirements for all four quarters of 2021.

Business Review

In 2021, the Group actively responded to the impact of the COVID-19 pandemic on its customers and banking businesses while prudently managing risks, leveraging its strong franchise and proactively exploring opportunities for business development. It remained committed to its strategic goal of building a first-class regional banking group and strengthened the execution of its strategic plans. It fostered environment, social and governance ("ESG") concepts and actively promoted green finance. The Group continued to develop its local business in Hong Kong and enhanced its integrated service capabilities. By capturing business opportunities in the Guangdong-Hong Kong-Macao Greater Bay Area, it reinforced its cross-border business advantages. It optimised the development of its regional footprint and enhanced its integrated regional service capabilities. At the same time, the Group accelerated digital transformation while enhancing customer experience, applied bottom-line thinking to risk control and regulatory compliance, and took a prudent approach to developing its key business initiatives.

Business Segment Performance

Profit/(Loss) before Taxation by Business Segment

HK$'m, except percentages	2021	% of total	2020	% of total	Change (%)
Personal Banking	**6,331**	**21.1**	11,017	32.8	(42.5)
Corporate Banking	**12,924**	**43.1**	13,035	38.8	(0.9)
Treasury	**10,238**	**34.2**	9,361	27.9	9.4
Insurance	**1,023**	**3.4**	854	2.5	19.8
Others	**(548)**	**(1.8)**	(684)	(2.0)	19.9
Total profit before taxation	**29,968**	**100.0**	33,583	100.0	(10.8)

Note: For additional segmental information, see Note 45 to the Financial Statements.

Personal Banking

Financial Results

Personal Banking achieved a profit before tax of HK$6,331 million in 2021, a decrease of HK$4,686 million or 42.5% year-on-year. This was mainly due to a decrease in net interest income, which was partially offset by an increase in net fee and commission income and a net reversal in impairment allowances.

Net interest income decreased by 47.2%, mainly due to a narrowing of the deposit spread as a result of falling market interest rates. This decrease was, however, partially offset by an improvement in the loan spread as well as growth in the average balance of CASA deposits and loans. Net fee and commission income increased by 8.1%, which was mainly attributable to an increase in commission income from insurance and securities brokerage amid satisfactory market investor sentiment in the beginning of the year, as well as an increase in commission income from loans and credit card business. The Group recorded a net reversal of impairment allowances of HK$128 million in 2021 resulting from an improvement in the parameter values of its expected credit loss model, as compared with a net charge of impairment allowances of HK$421 million in 2020, when the Group updated the parameter values of its expected credit loss model to take into consideration the weakened macroeconomic outlook.

Business operations

Pursuing sustainable development and launching diversified green finance products and services

In line with the market trend towards low-carbon transition, the Group actively conducted ESG concepts and enriched its green finance services to promote sustainable development and smart living. In order to help high-net-worth clients capture opportunities from green finance and jointly promote sustainable and high-quality development with its customers, the Group offered RMB personal green time deposit plans to its Private Wealth customers and became the first retail bank in Hong Kong to launch personal green time deposit products. The Group also pioneered the integration of green finance into the home purchasing journey by launching Hong Kong's first green mortgage plan with a large real estate company, providing prospective buyers of certain designated residential projects with fully digital and paperless mortgage services. In addition, it launched BOCHK All Weather ESG Multi-Asset Fund, the first ESG multi-asset fund with an RMB share class in Hong Kong. The Group also supported green and low-carbon consumer spending through the joint promotion of a paperless payment receipt scheme with about 10,000 merchants covering approximately 15,000 sales outlets. The scheme not only reduced the number of physical payment receipts, but also shortened queuing times for customers and enhanced merchants' operational efficiency. The Group also strengthened ESG-related promotions. It enhanced the online customer service experience, accelerated customer migration to digital transaction channels and promoted electronic statements to reduce the number of paper statements, application forms and cheques.

Developing the core local market and strengthening key product advantages

The Group remained committed to developing the local customer segment in order to strengthen its core product advantages, thus achieving steady growth in customer deposits. It made use of innovative technologies to build a home purchase ecology scenario and continuously enhanced the functionalities of its Home Expert mobile application. As a result, it became the first bank in Hong Kong to launch an one-stop online property purchase mobile application that enables customers to obtain the latest market data as well as first and second-hand property information, thus providing customers with comprehensive home planning and online mortgage services and maintaining its top market position in terms of the total number of new residential mortgage loans. In support of the 100% Personal Loan Guarantee Scheme introduced by HKMC Insurance Limited, the Group provided customers with a simple and convenient online loan application channel, with the aim of alleviating customers' cash-flow pressures and helping them ride out economic difficulties caused by the pandemic. The Group led the market in related business in terms of the number of loans granted. During the year, BOCHK was awarded Excellent Brand of Property Purchase Planning – Banking Solutions and Excellent Brand of Securities Services – Banking in the Hong Kong Leaders' Choice 2021 awards organised by *Metro Finance*.

Optimising a segmented customer service model and meeting the comprehensive needs of customers

The Group continued to promote its premium Private Wealth service to high-end customers through an exclusive team of wealth management experts and the newly launched RM Chat service, which enables customers to communicate with the service team instantly and carry out transactions via mobile banking. Coupled with its complementary online investment and insurance services, this meant that the Group was able to offer diversified services including investment, wealth management, legacy planning, cross-border property purchase and luxury lifestyle benefits to its customers. The Group further expanded its customer base, with the number of Private Wealth customers at the end of 2021 recording double-digit percentage growth from the end of last year, along with notable year-on-year growth in assets under management. It also revamped the brand image of its Wealth Management service by injecting fresh vitality and digital elements, providing customers with a diversified experience in interactive wealth management, digital investment, financial information and lifestyle, in order to better serve the ever-growing customer segment of young millionaires. Meanwhile, the Group enhanced its integrated service capabilities by embedding intelligence in its online wealth management services, with the aim of exploring the potential of the young customer segment. During the year, BOCHK received the Financial Services Awards of Excellence 2021: Wealth Management Bank award from *Hong Kong Economic Journal*.

The Group's private banking business maintained steady growth. By enhancing its collaboration with other business units and Southeast Asian entities within the Group, it was able to optimise its service chain for high-net-worth clients and family offices with professional private banking services. By integrating ESG standards into product design and services, the Group enriched its exclusive private banking product series and pushed forward excellence in high-quality private banking services. In addition, it continued to promote digital transformation and enhance its private banking service and trading platform. It also accelerated process automation and digitalisation, enriched its product range and strengthened its talent pool. As at the end of 2021, private banking's assets under management increased by 4.8% from the previous year end.

Consolidating cross-border advantages and strengthening the foundation for regional business

The Group optimised cross-border account opening by adding a new feature to its Greater Bay Area Account Opening Service that enables customers to use Hong Kong mobile numbers to open bank accounts in the Chinese mainland. At the end of 2021, the number of accounts opened in the Greater Bay Area was more than 169,000, representing double-digit percentage growth from the end of last year. Meanwhile, the Group was among the first batch of banks in Hong Kong to embark on Cross-Boundary Wealth Management Connect services, providing customers in nine Chinese mainland cities in the Greater Bay Area and Hong Kong with qualified investment products and services that meet their demands for cross-border wealth management and asset allocation solutions through Bank of China Cross-Boundary Wealth Management Connect Southbound and Northbound services. The aggregate transaction volume of both the Southbound and Northbound services were ranked amongst the top tier in Hong Kong. To support Hong Kong customers' demand for property purchases in the Greater Bay Area, the Group enhanced its comprehensive Greater Bay Area Personal Loan mortgage service, enhancing customers' full process service experience by providing professional financing solutions in mortgages, property refinancing and personal loans. Meanwhile, the Group launched "GBA Youth Card", so as to provide comprehensive support to young people in various aspects of lifestyle, study, travel, shopping and entertainment in the Greater Bay Area. In line with changing consumption patterns due to the pandemic, its "Taobao Card" also became a popular credit card for online shopping. The Group also became the first in Hong Kong to cooperate with and promote the Bay Area Social Security Service, providing convenience to Hong Kong permanent residents living and working in the Greater Bay Area. During the year, BOCHK was named Best Chinese Bank for the Greater Bay Area by *Asiamoney*, awarded Financial Services Awards of Excellence 2021: Greater Bay Area Financial Service 2021 by *Hong Kong Economic Journal*, and awarded the second "Navigation 9+2": GBA Best Cross-border Wealth Management Award and Best Bank in GBA Award by Hong Kong Ta Kung Wen Wei Media Group.

In respect of its Southeast Asian business, the Group continuously enhanced its regional wealth management service capabilities and made earnest efforts to promote regional brand development and client referrals during the year. Following a successful launch by BOC Malaysia, the Phnom Penh Branch introduced a Wealth Management service while simultaneously enabling service solutions for mutual brand recognition and the common sharing of promotional offers for Wealth Management across Hong Kong, Malaysia and Cambodia. BOC Malaysia launched various new investment products in funds and bonds, while BOC Thailand and the Brunei Branch successively launched an RMB salary direct remittance service. The Manila Branch collaborated with a local card company in the Philippines to successfully launch a dual-currency (PHP and RMB) debit card. The Group also accelerated the digitalisation of its Southeast Asian entities. BOC Malaysia launched the e-Pocket remote account opening service via mobile banking and became the first bank in Malaysia to introduce a mobile application for one-stop investment and wealth management services. The application, known as eWB, supports investment in trusts, funds and retail bonds, as well as enabling customers to perform online risk assessments, make business appointments, and open wealth management accounts.

Accelerating digital transformation and enhancing mobile banking experience

The Group closely monitored changes in the market and customer behaviour during the pandemic and accelerated its development into a digital bank, with the aim to enhance its one-stop integrated service capabilities. It utilised innovative technology to expedite the transformation of its channels and smart development of its retail branch network. In line with its initiative to digitalise branch services, the Group set up eZones and self-service smart areas in more than 180 branches and actively migrated high-frequency counter transactions to intelligent devices, thus enhancing channel resources, branch productivity and customer experience. The Group optimised its platforms, infrastructures and operating processes, and promoted the use of its electronic mortgage application platform to handle customers' mortgage applications so as to move towards paperless branch services. Meanwhile, it promoted collaborations amongst all channels and in order to facilitate the transition of customer services from manual to online, it accelerated the construction and enhancement of its intelligent customer service capabilities through its "Bonnie" chatbot and online chat services. Usage of the Group's intelligent chatbot in 2021 increased by 11% as compared to 2020. In addition, it enhanced the service capability of its contact centres through artificial intelligence solutions such as speech analysis and word analysis, so as to further expand the application of its next-generation customer service platform. The Group is also committed to expediting the digital transformation of its products and optimising its mobile banking service. During the reporting period, it launched "PlanAhead", a one-stop wealth planning service, on its mobile banking. This provides customers with professional asset allocation information and a variety of product solutions to assist them in planning for their financial goals at all stages of life. It also pioneered the launch of the "Stocks Widget" and "NotALot" mobile banking services, which provide customers with the latest market updates and flexible investment choices to meet customers' demand for convenient investment services. In 2021, the number of transactions conducted through mobile banking increased by more than 30% year-on-year, with satisfactory growth in the number of transactions related to securities trading, transfers and payment services. During the year, BOCHK was awarded Hong Kong's Best Digital Bank 2021 by *Asiamoney*, and Mobile Banking & Payment Initiative of the Year – Hong Kong in the Asian Banking & Finance Retail Banking Awards 2021 organised by *Asian Banking & Finance*.

Corporate Banking

Financial Results

Corporate Banking achieved a profit before tax of HK$12,924 million, a decrease of HK$111 million or 0.9% year-on-year. This was mainly due to a decrease in net interest income, which was partially offset by an increase in net fee and commission income as well as a lower net charge of impairment allowances.

Net interest income decreased by 17.7%, mainly due to a narrowing of the deposit spread as a result of falling market interest rates, although this was partially offset by an improvement in the loan spread as well as growth in the average balance of CASA deposits and loans. Net fee and commission income increased by 14.5%, mainly owing to an increase in commission income from loans, trust and custody, bills and payment services. Net charge of impairment allowances amounted to HK$295 million, down HK$1,582 million year-on-year. The drop was mainly due to an improvement in the parameter values of the Group's expected credit loss model in 2021 and the repayment of loans from certain corporate customers.

Business Operations

Continuously enhancing integrated financial service capabilities and advancing green and inclusive finance

The Group adhered to its customer-centric business philosophy and continuously promoted the deepening of business transformation with the aim of meeting customers' diversified demands for professional and integrated services. During the year, it actively responded to changes in the business environment, captured market opportunities and strengthened its support to a number of key projects in Hong Kong, the Greater Bay Area and Southeast Asia. As a result, the Group remained the top arranger bank in the Hong Kong and Macao syndicated loan market for the 17th consecutive year and underwrote a number of bond issues with significant market influence. It also maintained its market leadership as an IPO main receiving bank in terms of the number of listings on the Main Board of The Stock Exchange of Hong Kong. The Group deepened its business relationships with the world's major central banks, international financial institutions and sovereign wealth funds. It also upgraded the service capacity of its online products, with the number of online transactions by corporate customers increasing by 12% year-on-year. Fostering the concept of sustainable development, the Group customised financial solutions to suit customer needs by offering a wide range of green financial products and services, including green bond issuance, green loan arrangement, green consulting, certification services, and green time deposits, in order to assist and encourage its customers to establish sustainable business models. It issued "sustainable and smart living" themed green bonds, so as to support projects related to renewable energy, green building and clean transportation. Balance of green and sustainability linked loans increased by 3.1 times compared with the previous year-end and the issuance amount of newly underwritten ESG-related bonds increased by 1.7 times year-on-year. In recognition of its excellent and highly professional services, BOCHK was awarded Hong Kong Domestic RMB Internationalisation Initiative of the Year for the first time, Hong Kong Domestic Cash Management Bank of the Year for the eighth consecutive year, and Hong Kong Domestic Trade Finance Bank of the Year for the third consecutive year from *Asian Banking & Finance*; Best Transaction Bank in Hong Kong for the fourth time, Best Cash Management Bank in Hong Kong for the seventh time, and The Banker's Choice – Best Cash Management Project in Hong Kong for the second time from *The Asian Banker*, and Best Overseas Treasury Management Bank and Best Cross-border RMB Services Award from *Treasury China*. In addition, a number of the Group's collaborative projects with customers were commended by professional media groups. This included two overseas treasury centres, one established for a petrochemical company and one for an electricity company, that received the Excellent Treasury Award and Best Shared Service Platform Award respectively from *Treasury China*, as well as two cash pooling projects, set up for a wholesale and retail corporate and a logistics corporate, that were awarded Adam Smith Awards Asia – Highly Commended: Best in Class Treasury Solution in ASEAN and Adam Smith Awards Asia – Highly Commended: Harnessing the Power of Technology respectively from *Treasury Today*.

Actively fulfilling corporate social responsibility and strengthening support to commercial and SME customers

The Group strengthened its support to local commercial and SME customers and offered them integrated financial solutions with enhanced sectoral and digital servicing capabilities. It actively promoted various financial relief initiatives in order to help SMEs address business challenges arising from the operating environment and to navigate difficult times alongside them. This included implementing optimisation measures to the credit guarantee products and Special 100% Loan Guarantee under the Hong Kong Mortgage Corporation Limited's SME Financing Guarantee Scheme, while also promoting HKMA's Pre-approved Principal Payment Holiday Scheme. The Group also fully supported the building of HKMA's Commercial Data Interchange ("CDI"). During the second phase of the CDI Proof-of-Concept study and technical connection, the Group became the first Hong Kong bank to use commercial data rather than traditional financial reports for credit assessment purposes throughout the entire loan approval process, thus enhancing loan approval efficiency for SME customers. In addition, the Group joined hands with the Hong Kong Quality Assurance Agency ("HKQAA") to promote the development of green finance, becoming the first bank to cooperate with the HKQAA's Green Loan e-Assessment platform as well as launching the SME Green Financing Incentive Scheme to encourage clients' business transformation towards green and sustainable development. The Group remained committed to providing convenient, high-quality and highly efficient digital financial services to SMEs, including launching "ERP Cloud Services – Accounting Cloud" to improve SMEs' operational efficiency. During the year, the Group received the Best SME's Partner Award from the Hong Kong General Chamber of Small and Medium Business for the 14th consecutive year, the SME Banking Services Award in the Financial Services Awards of Excellence organised by *Hong Kong Economic Journal* for the third consecutive year and the SME Digital Banking Services Award in the 01 Fintech Excellence Award organised by *HK01*.

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

The Group deepened its cooperation with BOC's institutions in the Greater Bay Area and placed emphasis on the research and analysis of policies and planning, in order to better understand the financial demands of key industries and target customers and to promote business synergies. Capturing opportunities from financial policies relating to cross-border RMB services, the Group focused on emerging industries, proactively engaged in the development of major regions such as the Guangdong-Hong Kong-Macao Greater Bay Area, the Yangtze River Delta and the Beijing-Tianjin-Hebei region, and supported the development of enterprises in the innovative technology sector by offering diversified products and services. Seizing opportunities from RMB internationalisation, the Group optimised the coordination and management mechanism of its RMB business and formed a cross-departmental on-demand RMB working unit during the year, which achieved concrete results in coordinating RMB product development and marketing by applying an agile working methodology. Focusing on its key corporate customers, business segments and regions, the Group actively explored business opportunities and recorded steady growth in RMB deposits and loans. It further strengthened RMB business cooperation with key clients, maintaining its edge in RMB cross-border business. It continuously enriched and developed innovative RMB products, including the launch of green RMB deposits and loans. At the same time, the Group strived to expand its key businesses of cash management, trade financing and treasury centre, and continued to maintain its leading position in the cash pooling business.

In terms of its Southeast Asian business, the Group focused on the development of "Belt and Road" and "Going-Out" projects as well as large corporate customers in the region, through enhanced integrated marketing efforts. It strengthened collaborations with BOC's entities in Sydney, Singapore and Tokyo, and capitalised on BOCHK's position as BOC's Asia-Pacific syndicated loan centre. The Group also actively led or participated in syndicated loan projects in the Southeast Asian region, and acquired the corporate clients of Southeast Asian industrial parks. It completed the fundamental layout of the intelligent Global Transaction Banking ("iGTB") platform among its Southeast Asian entities, and successfully launched 73 products and systems in the Southeast Asian region.

Steadily developing custody and trust business so as to enhance integrated service capabilities

With the introduction of Southbound Trading under Bond Connect during the year, substantial growth was recorded in the number of the Group's cross-border custody clients. The Group deepened business cooperation with Chinese investment enterprises in corporate trust and agency services, with the total number of its Bond Connect clients continuing to rank among the top tier in Hong Kong. Meanwhile, it strengthened collaborative marketing efforts with BOC's overseas branches and reinforced its brand proposition in the primary market. The Group's assets under custody as at end of 2021 grew steadily by 2.0% from the end of last year. It was also awarded Bond Connect Top Custodian for the fourth consecutive year by Bond Connect Company Limited.

BOCI-Prudential Trustee Limited ("BOCI-Prudential Trustee") continued to optimise its mobile application for ORSO schemes and developed a one-stop electronic platform for account opening and management processes, so as to enhance customer experience. It also diversified its income streams by successfully engaging in a number of new business avenues, including being appointed for multiple ORSO schemes by a number of sizable enterprises as well as for the Share Award schemes of several well-known listed companies. As at the end of 2021, MPF assets under its trusteeship recorded year-on-year growth of 1.1%, consolidating its leading market position despite stock market volatility towards the end of year. Moreover, BOCI-Prudential Trustee actively collaborated with various multinational asset management companies to seize potential opportunities in the Greater Bay Area and facilitate growth of its unit trust fund business. During the year, it launched 16 unit trust funds and was successfully appointed by a large asset management company as the trustee, fund administrator, custodian, and registrar of its new Hang Seng Index ETF. BOCI-Prudential Trustee received a number of awards in 2021, with its "My Choice MPF Scheme" recognised as Best MPF Scheme at the 2021 Morningstar Fund Awards Hong Kong, organised by Morningstar Investment Management Asia Limited. It also received numerous awards for its funds at the Lipper Fund Awards Hong Kong 2021 organised by *Refinitiv*, as well as at the Top Fund Awards 2021 organised by *Bloomberg Businessweek*.

Treasury

Financial Results

Treasury recorded a profit before tax of HK$10,238 million, an increase of HK$877 million or 9.4% year-on-year. This was primarily due to an increase in net interest income resulting from lower funding costs, which was partially offset by a decline in net gain on other financial assets and a reduction in net trading gain of 6.8%. Net trading gain decreased, primarily due to a drop in net gain from foreign exchange swap contracts and bullion transactions. This was partially offset by growth in currency exchange income from customer transactions and changes in the mark-to-market value of certain debt securities investments and interest rate instruments caused by market interest rate movements.

Business Operations

Continuously enhancing trading capabilities and steadily developing global markets business

The Group continuously strengthened its digital capacities and capabilities in online service, product integration and integrated services, thus achieving satisfactory growth in client business. It seized market opportunities by proactively participating in Bond Connect and PBoC bills repo-related businesses, achieving the market leading position in Southbound Trading under Bond Connect in Hong Kong in terms of transaction volume. Giving full play to its strong franchise, the Group continued to serve and cultivate the offshore RMB market. It actively promoted the use of RMB and RMB-related products and enhanced its trading capabilities. Furthermore, the Group deepened its management-by-business-unit approach across its Southeast Asian entities, strengthened regional collaboration, and continued to develop and enhance the scale and competitiveness of its treasury business in the Southeast Asia region. In recognition of its success, BOCHK was awarded Excellent Overseas Member of RMB FX Market in 2020 by China Foreign Exchange Trade System, Outstanding International Member Award 2020 by Shanghai Gold Exchange, Bond Connect Outstanding FX Settlement Bank by the Bond Connect Company Limited, and CIBM Offshore Institutional Investor Excellence Award 2021 by China Central Depository & Clearing Co., Ltd.

Expanding the depth and breadth of its cross-border business to reinforce its strong franchise in RMB treasury business

The Group continuously enhanced its RMB payment and clearing capabilities during the year. It established a fully automated cross-border fund clearing channel for both Southbound Trading under Bond Connect and Cross-Boundary Wealth Management Connect, further facilitating the mutual opening up of Chinese mainland capital markets and contributing to the long-term development of Hong Kong's financial market infrastructure. As of the end of 2021, the Group's fund clearing business volume for Southbound Trading under Bond Connect was ranked amongst the top tier in Hong Kong. Capitalising on its role as the RMB clearing bank, the Group contributed to the establishment of cross-border financial infrastructure, optimised the quality and efficiency of its clearing services and launched a CNH PBoC bills repo business while also taking up the role of the market maker. At the same time, the Manila Branch officially launched an RMB clearing bank service and successfully introduced a two-way RMB remittance service for its clients. Together with BOC Malaysia, the Manila Branch was granted a direct participant qualification by the Cross-border Interbank Payment System ("CIPS"). The FXall Digital Transaction Platform was successfully rolled out in BOC Thailand and BOC Malaysia, with both entities completing their first RMB/local currency quotation transaction with major peers in the region. The Group actively supported the bilateral local currency settlement ("LCS") agreement between China and Indonesia and undertook related settlement business, with the Jakarta Branch completing a number of RMB/IDR exchange and remittance transactions on the first day of implementation. The Jakarta Branch's RMB/IDR currency exchange volume also ranked first among peers, while its RMB salary direct remittance business volumes recorded substantial growth.

Adhering to a solid and risk-aware investment strategy and promoting market development

The Group continued to take a cautious approach to managing its banking book investments and closely monitored worldwide interest rate adjustments. It actively sought fixed income investment opportunities to enhance returns while remaining alert to risk. In 2021, the Group successfully issued the world's first certificate of deposit benchmarked to the Hong Kong Dollar Overnight Index Average ("HONIA"), becoming the first bank to issue HONIA-linked debt securities and thereby enriching the spectrum of investment options available to investors and promoting HONIA as a new pricing benchmark in the market.

Actively capturing market opportunities to steadily develop its asset management business

Despite volatile capital markets and the uncertain COVID-19 pandemic situation, BOCHK Asset Management Limited ("BOCHK AM") adhered to its prudent development strategy and leveraged its professional investment service capabilities to proactively capture market opportunities and continuously promote business diversification. Overall assets under management recorded steady growth as at the end of 2021. During the year, BOCHK AM launched the BOCHK All Weather ESG Multi-Asset Fund, allowing investors to capture ESG-related investment opportunities. This was the Group's first ESG fund to be authorised by Hong Kong's Securities and Futures Commission as well as the first ESG multi-asset retail fund with an RMB share class in the Hong Kong market. At the same time, BOCHK AM further expanded its client base and distribution channels, while deepening its business relationships with existing clients and proactively capturing cross-border financial opportunities, with several of the public funds it offers becoming eligible wealth management products under the Cross-Boundary Wealth Management Connect Scheme during the year. In recognition of its professional expertise, BOCHK AM was awarded Best RMB Manager, Best CNY Bonds, Offshore (5 Years) and CEO of the Year in the 2021 Best of the Best Awards by *Asia Asset Management*.

Insurance

Financial Results

The Group's insurance segment recorded standard new premium of HK$10,284 million, down 9.4% year-on-year. The value of new business was HK$1,041 million, a decrease of 6.7% year-on-year. This was primarily attributable to the adverse effects of the ongoing COVID-19 pandemic. However, profit before tax was up 19.8% year-on-year to HK$1,023 million, mainly owing to an increase in net interest income resulted from a growth in investment assets.

Business Operations

Actively promoting digitalisation strategy to build business ecosystems

In 2021, BOC Life continued to expand the coverage of its online channels in light of the COVID-19 pandemic's ongoing impact on insurance product sales. To enrich its insurance product portfolio and drive growth in higher value-added whole life savings protection plans, BOC Life launched a range of new products including the Forever Fortune Whole Life Insurance Plan, SmartViva Flexi VHIS and Glamorous Glow Whole Life Insurance Plan, achieving steady growth in new business margin. It also actively enhanced its business collaborations to upgrade its cross-selling capabilities, and maintained its leading position in the Qualifying Deferred Annuity Policy market. BOC Life made great efforts to enhance cooperations with business partners including the world's leading smartwatch brand, innovative technology companies in Asia and Hong Kong, online social platforms, charities and social enterprises, in order to create win-win situations, as well as unlocking new value for customers and providing them with a brand-new experience. In addition, it established a product ecosystem to advocate wellness and healthy lifestyles, in order to meet customer needs across all dimensions. Partnering with a smartwatch brand, BOC Life introduced the "Live Young" programme to strengthen interaction with customers and provide them with preventive health management tools. This cutting-edge programme featured the exclusive launch of the Biological Age Model (BAM) algorithm, and won the gold medal in the 2021 Global FinTech Awards organised by the Monetary Authority of Singapore. Meanwhile, BOC Life and Macao-based HN Group entered into a strategic cooperation agreement to launch the first joint project on 'Insurance + Wellness and Retirement' across Guangdong, Hong Kong and Macao under the Guangdong-Macao In-Depth Cooperation Zone in Hengqin Initiative, reinforcing BOC Life's position as a retirement expert.

Committed to promoting ESG and sustainable development initiatives

BOC Life actively launched a series of environmental and carbon reduction themed CSR programmes, including the launch of the "Brave the Storm Together, Guard Our Green Future" programme, through which BOC Life will donate a certain amount from each successfully issued policy to support Green Ladies & Green Little, a social enterprise operated by St. James' Settlement. BOC Life also partnered with the World Green Organisation ("WGO") to launch ESG projects and became the strategic partner for the WGO's ESG Accelerator Programme for Start-ups. In addition, it supported the Sustainable Investing and ESG Conference 2020/21, co-organised by the WGO and the United Nations Economic and Social Commission for Asia and the Pacific, as a Double Platinum Sponsor. Meanwhile, BOC Life teamed up with Food Angel to prepare and donate hot meals and food packs for underprivileged groups through the "Live Young" programme. It also helped St James' Settlement to develop upcycling and smart digital themed educational programmes for younger people, including the "Little Green Shopkeeper Programme" and "BOC Life New Generation Financial and Technology Designers".

BOC Life continued to sponsor the "Health Engineer" programme and "Kids" Our Love programmes through community partnerships with Hong Kong Sheng Kung Hui Welfare Council and Hong Kong Family Welfare Society respectively, providing holistic care and support for the mental, physical and spiritual wellness needs of teenagers. It was also title sponsor of the Hong Kong Premier League and FIFAe Nations Series 2022 – HKFA eFootball Open organised by The Hong Kong Football Association, with a view to promoting sports development in Hong Kong. BOC Life's relentless efforts and contribution to environmental protection and community development won wide applause and recognition during the year, including a Gold Award in the Web Accessibility Recognition Scheme 2020-2021, the 10 Years Plus Caring Organisation logo from Hong Kong Council of Social Service under its Caring Company Scheme, and the Greater Bay Area Corporate Sustainability Awards 2021 – Social Sustainability Award (Good Health and Well-Being) from the Metro Broadcast Limited.

Maintaining a leading position in the life insurance market and winning recognition for service excellence

BOC Life maintained its leading position in Hong Kong's life insurance sector and remained the market leader in RMB insurance. In recognition of its product and service excellence and sustainable development efforts, BOC Life was commended with a number of local and regional awards, including Outstanding Insurance Business – Annuity Award and Outstanding Insurance Business – Saving Insurance Award in the 2021 RMB Business Outstanding Awards, organised by *Metro Finance* and Hong Kong Ta Kung Wen Wei Media Group, as well as placing in the top three finalists for the Outstanding Customer Services Award at the Hong Kong Insurance Awards 2021, organised by The Hong Kong Federation of Insurers.

Regional Business

The Group continued to pursue integrated regional development in a steady and stable manner, adopting market-by-market strategies as its orientation for development with the aim of building its Southeast Asian entities into mainstream foreign banks in their local markets. In 2021, the ASEAN remained China's largest trading partner. Driven by the strong rebound of the Chinese mainland economy, Southeast Asia showed signs of recovery, with the double-digit growth of merchandised trade in some Southeast Asian countries alleviating the negative impact of COVID-19 variant outbreak and political upheavals in parts of the region. The year also marked the 30th anniversary of the establishment of dialogue between China and the ASEAN and the beginning of their comprehensive strategic partnership. These factors, coupled with the implementation of the Regional Comprehensive Economic Partnership in early 2022, will make the economic and trading relationship between China and the ASEAN still closer. There is enormous potential for growth in Southeast Asia, with new growth opportunities for the Group's regional business being opened up by the Belt and Road initiative and other positive drivers such as regional urbanisation, industrial upgrading and industry chain relocation in Southeast Asian countries.

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

The Group further enhanced its regional business network with the successful operational launch of the Yangon Branch and Hanoi Representative Office during the year. As a result, its regional business now covers nine countries in Southeast Asia, further enhancing its regional business network layout. The Group established and implemented the Southeast Asia Regional Five-year Sub-plan, which formulates a clear direction for its future regional development. With the aim of further enhancing regional operations, it continuously centralised and gradually relocated its regional operations to the Regional Operation Centre in Nanning, Guangxi as planned. The Group's integrated management approach for its regional business has gradually become more responsive to public needs and preferences, and thus continued to improve its Southeast Asian entities' capabilities in business development and operational management. Its regional brand influence continued to flourish, with the Jakarta Branch again ranked first among all foreign banks in Indonesia in terms of overall operations in the Indonesian banking industry for 2021, and BOC Thailand receiving the 2021 Best Cross-Border Business Services Award in Thailand.

During the year, the Southeast Asian market was adversely impacted by the uncertain pandemic situation. The Group adopted a cautious approach towards regional development, and its Southeast Asian entities* recorded steady business growth. As at the end of 2021, deposits from customers and advances to customers amounted to HK$66,669 million and HK$55,202 million respectively, up 16.4% and 2.1% respectively from the end of last year. Net operating income before impairment allowances amounted to HK$2,708 million, an increase of 8.3% year-on-year. Net charge of impairment allowances amounted to HK$1,902 million, an increase of HK$1,626 million year-on-year, mainly reflecting the potential client risks arising from pandemic relief measures as well as downgrading of certain advances owing to the pandemic. As at the end of 2021, the non-performing loan ratio was 2.39%, up 0.49 percentage points from the end of 2020.

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

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

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

Digital Transformation Development

In 2021, the Group maintained its customer-centric approach and closely monitored market trends with the aim of deepening its all-round digital transformation, driving business evolution and advancing the scenario-based application of innovative fintech by integrating technologies into its front, middle and back offices. It also completed the formulation of its Five-year Digital Transformation and Fintech Plan. Drawing on digital, intelligent and ecological support, the Group remained committed to strengthening infrastructure construction, deepening scenario-based open banking services, enhancing digital and technology-empowered businesses, optimising its innovation mechanisms and agile methodologies, and fostering digital talent, with a view to building a full-scale digital bank. In support of the HKMA's Fintech 2025 Strategy, the Group offered its clients and staff high-quality digital services and experiences, laying a solid foundation for its long-term development.

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

The Group continued to optimise its mobile banking capabilities, making around 70 functional enhancements during the year including refreshing the user interface design to improve customer experience. It became the first bank in Hong Kong to adopt the HKSAR Government's "iAM Smart" mobile application in its mobile banking, which enables remote account opening. Through iAM Smart's authentication and "e-Me" form-filling functions, customers are spared the time involved in the manual input of personal data and identity verification. The Group also enhanced the self-service capabilities and efficiency of the "iService" terminals in its branches, which enable customers to authenticate their identity using a Hong Kong Identity Card, finger vein or facial recognition biometrics, and to perform self-service transactions such as account opening, password changes and customer information updates. In addition, the Group strengthened its data infrastructure to enhance the effectiveness of its big data analysis and artificial intelligence modeling capabilities, with the aim of meeting customers' personalised needs. At the same time, a network risk monitoring system was introduced in order to continuously review and enhance the Group's network security level.

Deepening scenario-based construction to achieve seamless banking services

The Group actively promoted open banking services during the year. It enhanced financial services reachability in the local market through the use of innovative fintech in scenario-based applications, including its major home purchasing and health-related scenario ecosystems. The Group joined hands with three major real estate agencies and mortgage intermediaries to launch an online real-time property valuation service and mortgage application service via open API. It also cooperated with two stock quoting platforms to offer its customers cross-platform mobile banking trading services for Hong Kong stocks, US stocks and A shares. It cooperated with different business and trade ecosystem platforms via blockchain technology, providing corporate customers with bespoke services for different business scenarios using large blockchain trade financing platforms such as “eTradeConnect”, “Contour” and “Effitrade”, thus promoting the digitisation of cross-border trade and trade financing. The related number of transactions handled doubled compared to the previous year, while transaction volume increased by nearly 3.5 times. In order to build a digital commercial scenario for its corporate customers, the Group launched its brand new iGTB API service. This enables BOCHK to connect into customers’ business platforms using API technology, meaning that customers can access digital corporate banking services directly through their own business platforms, thus enhancing customer experience and efficiency in managing funds. The Group also launched the “ERP Cloud Service – Accounting Cloud” service, allowing SME customers to access a one-stop cloud-based financial and accounting software service for free by logging into their iGTB NET accounts. Over a thousand accounts have been opened since its launch, providing a new digital banking experience to customers.

Enhancing digitally-empowered businesses to improve customer experience

The Group capitalised on technology to drive business evolution, improve customer experience and enhance product quality and operational efficiency. Using BoC Bill to drive breakthroughs in client relationships, the Group continued to facilitate the digital transformation of government and public sector entities, schools, large enterprises and SMEs. It successfully cooperated with 120 post offices to help them accept credit card and QR code payments via BoC Bill, transformed the traditional offline payment channel of the HKSAR Government’s Treasury Department to a digital payment environment, and successfully established an electronic payment environment for a number of local universities, secondary and primary schools in Hong Kong. At the end of 2021, the total number of BoC Bill terminals increased by 21.4% compared with the end of the previous year, and the total settlement volume increased by 30.3% year-on-year. In addition, the Group enhanced the online functionalities of its BoC Pay services by enabling “Open API” and “App To App”, in order to cooperate with leading e-commerce business partners and create an open-loop online payment ecosystem. At the end of 2021, the total number of BoC Pay users increased by 31.8% compared to the end of last year, and the transaction volume increased by 30.2% year-on-year. At the same time, the Group continued to promote its regional mobile and digital financial services with the aim of growing its regional client base, including extending its personal mobile banking coverage across Southeast Asia during the year.

Moving towards intelligent operations and gradually introducing intelligent risk control applications that drive operational efficiency

The Group accelerated the expansion of intelligent technology applications in 2021. Robotic process automation (“RPA”) technology was implemented in more operating procedures, which reduced processing times, enhanced employee productivity and improved related processing efficiency by approximately 60%. It optimised its property valuation process through the application of blockchain technology, which covered 98% of its total property valuations, thus enhancing operational efficiency. The Group introduced an intelligent credit rating model as well as an automated loan approval model for small retail businesses, and refined the approval process for residential mortgage loan applications, thus gradually automating operating procedures for loan approvals. It promoted digitalisation in its operations, incorporated ESG elements into its business processes and reinforced paperless green operations. It also implemented intelligent risk control applications by enhancing the digitalised credit monitoring of borrowers; extending usage of its intelligent anti-fraud platform to ATM transactions, deposits, remittance, and the risk monitoring of credit card transactions; and gradually enhancing its capabilities in fraud case detection and remedy. Meanwhile, the Group applied real-time risk control to its personal and corporate online banking, mobile banking, BoC Pay and BoC Bill platforms, with the aim of enhancing customer transaction security. During the year, BOCHK was awarded by the Hong Kong Police in recognition of its efforts in fraud cases prevention.

Optimising innovation mechanisms and strengthening its talent pool

The Group reinforced its vision, goals and key priorities for digital transformation while also formulating a rationale and action plan for each of its business areas. It continuously optimised its agile working methodology and culture, establishing various agile teams to promote strategic projects and inspire staff creativity. To enhance the skills and competence of its talent pool, the Group launched professional training courses and cooperated with institutions from other industries through the virtual academy; proactively hired talented fintech and digital transformation professionals, and continuously optimised its all-staff digital training and development mechanism.

Outlook and Business Focus for 2022

Looking ahead into 2022, global economic growth is expected to gradually moderate and return to normal levels. However, overall global economic prospects remain largely uncertain, as the growth trend will depend on the development of the pandemic, changes in the monetary and fiscal policies of major countries, as well as the prevalence of geopolitical risks. The US economy is expected to maintain growth momentum, but containing inflation will be a major challenge. The Chinese mainland economy is likely to be faced with an accelerated pace of economic restructuring during a global economic slowdown. The official implementation of the Regional Comprehensive Economic Partnership agreement will help promote trading and investment activities in the Asia-Pacific region, boosting economic recovery momentum in Southeast Asia. The fifth wave of pandemic in Hong Kong has become more severe, posing pressure on domestic economy. The HKSAR Government introduced a series of relief measures, which will help mitigate economic shocks. The operating environment will be overwhelmed by the COVID-19 pandemic and will remain highly uncertain. With this in mind, the Group will closely monitor changes in market developments and the related impacts to its financial performance.

In line with its strategic plan, the Group will continue to focus on the three markets of Hong Kong, the Greater Bay Area and Southeast Asia, and strengthen its customer and business foundations. It will continue to develop the local market in Hong Kong to realise customer and business potential. By capturing opportunities arising from the national policies of the Chinese mainland, the Group will vigorously develop its cross-border business. It will unleash its business advantages in the offshore market and actively participate in the innovative policies of the Greater Bay Area to cultivate new business growth drivers. The Group will further enhance the service capability of its regional business and accelerate the delivery of featured products and services. It will capture opportunities from the internationalisation of RMB to seek new business breakthroughs. At the same time, the Group will focus on the development of green finance. It will seize green finance business opportunities stemming from clients' pursuit of carbon neutral targets while continuously putting into practice its own low-carbon and resource-efficient operation initiatives. The Group will endeavour to become a full-scale digital bank and a leading digital enterprise. It will enhance its integrated platform for key businesses to reinforce its integrated service capabilities. In addition, the Group will adhere to stringent risk management and continue to improve its human, cultural and operational mechanisms in order to provide strong support for strategic implementation.

Credit Ratings

As at 31 December 2021	Long-term	Short-term
Standard & Poor's	A+	A-1
Moody's	Aa3	P-1
Fitch	A	F1+

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. For details of the Group's risk management governance structure, please refer to Note 4 to the Financial Statements.

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. For details of the Group's Credit Risk Management, please refer to Note 4.1 to the Financial Statements.

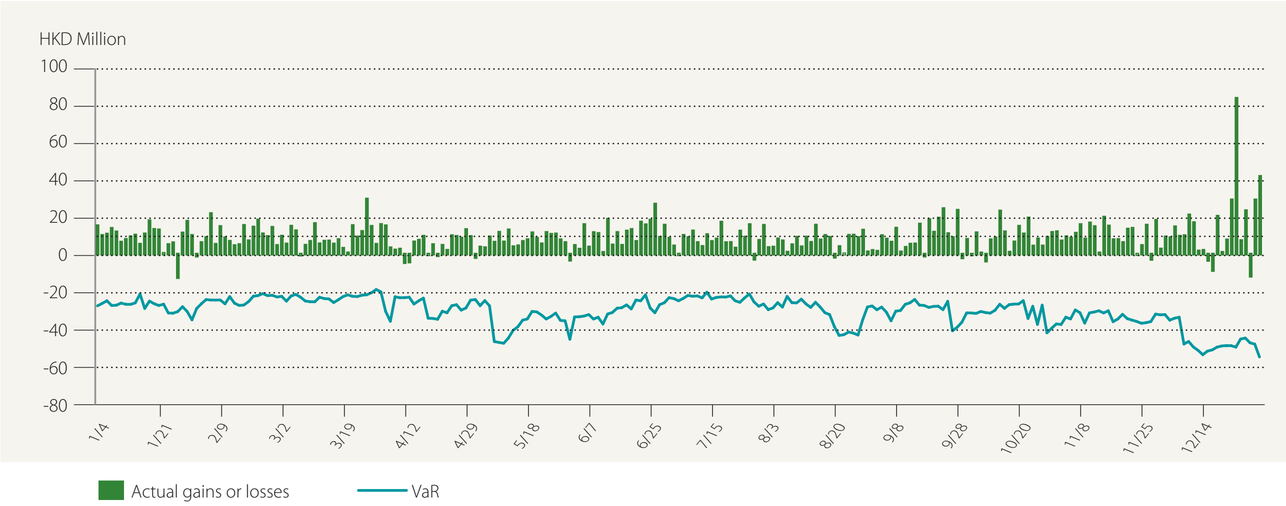
Market risk management

Market risk refers to the risk of loss arising from movements in the value of foreign exchange, interest rate, equity and commodity positions held by the Group due to the volatility of financial market price (foreign exchange rate, interest rate, equity price, commodity price). The Group adopts a moderate market risk appetite to achieve a balance between risk and return. For details of the Group's Market Risk Management, please refer to Note 4.2 to the Financial Statements.

The Group uses the VaR to measure and report general market risks to the Risk Committee ("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. The graph below shows the back-testing result of the VaR against actual gains or losses of the Group.

Daily Back-testing in 2021



There was no actual loss exceeding the VaR for the Group in 2021 as shown in the back-testing results.

Interest rate risk management

Interest rate risk means the risks to a bank's earnings and economic value arising from movements in interest rate and term structures of the bank's asset and liability positions. The Group's interest rate risk exposures are mainly structural. The major types of interest rate risk from structural positions are gap risk, basis risk and option risk. For details of the Group's Interest Rate Risk Management, please refer to Note 4.2 to the Financial Statements.

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. For details of the Group's Liquidity Risk Management, please refer to Note 4.3 to the Financial Statements.

Operational risk management

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

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

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

Reputation risk management

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

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

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

Legal and compliance risk management

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

Strategic risk management

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

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

Capital management

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

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

Stress testing

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

BOC Life

BOC Life's principal business underwrites long-term insurance business in life and annuity (Class A), linked long term business (Class C), permanent health (Class D), retirement scheme management category I (Class G) and retirement scheme management category III (Class I) 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 4.4 to the Financial Statements.

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 framework includes managing the adverse impact due to exchange rate movement through stress test, exposure limit and risk limit.

Fostering Sustainable and Smart Living


Green Financing
Green Mortgage
Green Bonds and
ESG Funds
Green Loan
e-Assessment Platform's
Banking Partner
Green Deposits