Notes to the Financial Statements

1. Principal activities

The Company is an investment holding company and its subsidiaries are principally engaged in the provision of banking and related financial services.

The Company is a limited liability company incorporated and listed in Hong Kong. The address of its registered office is 53/F, Bank of China Tower, 1 Garden Road, Hong Kong.

2. Significant accounting policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below.

These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1 Basis of preparation

The consolidated financial statements of the Group have been prepared in accordance with Hong Kong Financial Reporting Standards (HKFRSs is a collective term which includes all applicable individual Hong Kong Financial Reporting Standards, HKASs and Interpretations) issued by the HKICPA and the Hong Kong Companies Ordinance.

The consolidated financial statements have been prepared under the historical cost convention, as modified by the revaluation of financial assets at fair value through other comprehensive income, financial assets and financial liabilities (including derivative financial instruments) at fair value through profit or loss, precious metals at fair value, investment properties which are carried at fair value and premises which are carried at fair value or revalued amount less accumulated depreciation and accumulated impairment losses. Disposal group and repossessed assets held for sale are stated at the lower of their carrying amounts and fair values less costs to sell as further explained in Notes 2.2 and 2.25 respectively.

The preparation of financial statements in conformity with HKFRSs requires the use of certain critical accounting estimates. It also requires the Management to exercise judgement in the process of applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2. Significant accounting policies (continued)

2.1 Basis of preparation (continued)

(a) Amendments that are initially adopted for the financial year beginning on 1 January 2020

Amendments	Content	Applicable for financial years beginning on/after	Currently relevant to the Group
HKAS 1 and HKAS 8 (Amendments)	Definition of Material	1 January 2020	Yes
HKAS 39, HKFRS 7 and HKFRS 9 (Amendments)	Interest Rate Benchmark Reform	1 January 2020	Yes
HKFRS 3 (Amendments)	Definition of a Business	1 January 2020	Yes
HKFRS 16 (Amendments)	COVID-19-Related Rent Concessions	1 June 2020	Yes

- HKAS 1 and HKAS 8 (Amendments), "Definition of Material". The amendments clarify the definition of materiality of information and align the definition used across other accounting standards. The amendments have been applied prospectively. The application of the amendments does not have a material impact on the Group's financial statements.

- HKAS 39, HKFRS 7 and HKFRS 9 (Amendments), "Interest Rate Benchmark Reform". The amendments modify certain specific hedge accounting requirements to provide temporary relief allowing the continuous use of hedge accounting under the uncertainties caused by interest rate benchmark reform ("IBOR reform") on the cash flows of the hedge relationships. Pursuant to the amendments, the relief would deem to be ended at the earlier of (i) when there is no longer uncertainty arising from IBOR reform over the cash flows of the hedging relationships, and (ii) when the hedging relationship to which the relief applied is discontinued, or in case of cash flow hedges, when the entire amount accumulated in the cash flow hedge reserve with respect to the discontinued hedging relationship has been reclassified to profit or loss.

  The amendments have been applied retrospectively. Note 24 provides information about the hedging relationships for which the Group has applied the reliefs set out in the amendments. The application of the amendments does not have a material impact on the Group's financial statements.

- HKFRS 3 (Amendments), "Definition of a Business". The amendments clarify the definition of a business, with the objective of assisting entities to determine whether a business combination transaction should be accounted for as a business combination or as an asset acquisition. The amendments have been applied prospectively. The application of the amendments does not have a material impact on the Group's financial statements.

2. Significant accounting policies (continued)

2.1 Basis of preparation (continued)

(a) Amendments that are initially adopted for the financial year beginning on 1 January 2020 (continued)

- HKFRS 16 (Amendments), "COVID-19-Related Rent Concessions". The amendments provide an optional practical expedient allowing lessees to elect not to evaluate whether qualifying rent concessions are lease modifications and, instead, account for those rent concessions as if they were not lease modifications. The practical expedient only applies to rent concessions occurring as a direct consequence of the COVID-19 pandemic.

  The amendments are effective on 1 June 2020 and applicable to COVID-19-related rent concessions that reduce lease payments from 1 January 2020 to 30 June 2021. The Group has elected to early adopt the amendments and applied the practical expedient to all qualifying COVID-19-related rent concessions granted to the Group during the reporting period. The application of the amendments does not have a material impact on the Group's financial statements.

(b) Standard, amendments and interpretation issued that are not yet mandatorily effective and have not been early adopted by the Group in 2020

Standard/Amendments/ Interpretation	Content	Applicable for financial years beginning on/after	Currently relevant to the Group
HKAS 1 (Amendments)	Classification of Current or Non-current Liabilities	1 January 2023	Yes
HKAS 16 (Amendments)	Property, Plant and Equipment: Proceeds before Intended Use	1 January 2022	Yes
HKAS 28 (2011) and HKFRS 10 (Amendments)	Sale or Contribution of Assets between an Investor and its Associate or Joint Venture	To be determined	Yes
HKAS 37 (Amendments)	Onerous Contracts – Cost of Fulfilling a Contract	1 January 2022	Yes
HKAS 39, HKFRS 4, HKFRS 7, HKFRS 9 and HKFRS 16 (Amendments)	Interest Rate Benchmark Reform – Phase 2	1 January 2021	Yes
HKFRS 3 (Amendments)	Reference to the Conceptual Framework	1 January 2022	Yes
HKFRS 17	Insurance Contracts	1 January 2023	Yes
HK Int 5 (2020)	Presentation of Financial Statements – Classification by the Borrower of a Term Loan that Contains a Repayment on Demand Clause	1 January 2023	Yes

2. Significant accounting policies (continued)

2.1 Basis of preparation (continued)

(b) Standard, amendments and interpretation issued that are not yet mandatorily effective and have not been early adopted by the Group in 2020 (continued)

Further information about those HKFRSs that are expected to be applicable to the Group is as follows:

- HKAS 1 (Amendments), "Classification of Current or Non-current liabilities". The amendments aim to promote consistency in applying the requirements by helping entities determine whether, in the balance sheet, debt and other liabilities with an uncertain settlement date should be classified as current (due or potentially due to be settled within one year) or non-current. The amendments include clarifying the classification requirements for debt an entity might settle by converting it into equity. The amendments are applied retrospectively. Early adoption is permitted. The Group is considering the impact of the amendments on the Group's financial statements.

- HKAS 16 (Amendments), "Property, Plant and Equipment: Proceeds before Intended Use". The amendments prohibit an entity from deducting from the cost of an item of property, plant and equipment the proceeds from selling items produced before that asset is available for use. The related sales proceeds together with the costs of providing these items as determined by HKAS 2, should be included in profit or loss. The amendments are applied retrospectively, but only to items of property, plant and equipment made available for use on or after the beginning of the earliest period presented in the financial statements in which the entity first applies the amendments. The application of the amendments will not have a material impact on the Group's financial statements.

- HKAS 28 (2011) and HKFRS 10 (Amendments), "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture". The amendments address an acknowledged inconsistency between the requirements in HKAS 28 (2011) and those in HKFRS 10, in dealing with the sale or contribution of assets between an investor and its associate or joint venture. The main consequence of the amendments is that a full gain or loss is recognised when a transaction involves a business (whether it is housed in a subsidiary or not). A partial gain or loss is recognised when a transaction involves assets that do not constitute a business, even if these assets are housed in a subsidiary. The amendments are to be applied prospectively and early application is permitted. The application of the amendments will not have a material impact on the Group's financial statements.

2. Significant accounting policies (continued)

2.1 Basis of preparation (continued)

(b) Standard, amendments and interpretation issued that are not yet mandatorily effective and have not been early adopted by the Group in 2020 (continued)

- HKAS 37 (Amendments), "Onerous Contracts – Cost of Fulfilling a Contract". The amendments clarify that for the purpose of assessing whether a contract is onerous, the cost of fulfilling the contract includes both the incremental costs of fulfilling that contract and an allocation of other costs that relate directly to fulfilling contracts. The amendments are applied to contracts for which exist at the date when the amendments are first applied, with the cumulative effect of applying the amendments to be recognised as an opening balance adjustment to retained earnings or other component of equity, as appropriate. The comparatives are not restated. The application of the amendments will not have a material impact on the Group's financial statements.

- HKAS 39, HKFRS 4, HKFRS 7, HKFRS 9 and HKFRS 16 (Amendments), "Interest Rate Benchmark Reform – Phase 2". The amendments address issues that might affect financial reporting when an entity replaces the old interest rate benchmark with an alternative benchmark rate as a result of the IBOR Reform. The amendments complement those issued in 2019 and relate to:

  – changes to contractual cash flows – a company will not have to derecognise or adjust the carrying amount of financial instruments for changes that are direct consequence of the reform and occur on an economically equivalent basis, but will instead update the effective interest rate to reflect the change to the alternative benchmark rate;

  – hedge accounting – a company will not have to discontinue its hedge accounting solely because it makes changes required by the reform, if the hedge meets other hedge accounting criteria; furthermore, if an entity reasonably expects that an alternative benchmark rate will be separately identifiable within a period of 24 months, it can designate the alternative reference rate as a non-contractually specified risk component even if it is not separately identifiable at the designation date; and

  – disclosures – a company will be required to disclose information about new risks arising from the reform and how it manages the transition to alternative benchmark rates.

  The amendments are applied retrospectively, except regarding designation of hedging relationships. The comparatives are not restated. Early application is permitted. The Group is considering the financial impact of the amendments on the Group's financial statements.

2. Significant accounting policies (continued)

2.1 Basis of preparation (continued)

(b) Standard, amendments and interpretation issued that are not yet mandatorily effective and have not been early adopted by the Group in 2020 (continued)

- HKFRS 3 (Amendments), "Reference to the Conceptual Framework". The amendments update a reference in HKFRS 3 to the Conceptual Framework for Financial Reporting issued in 2018. The amendments also add to HKFRS 3 an exception to its requirement for an entity to refer to the Conceptual Framework to determine what constitutes an asset or a liability, that for some types of liabilities and contingent liabilities, an entity applying HKFRS 3 should instead refer to HKAS 37. The exception has been added to avoid an unintended consequence of updating the reference to the Conceptual Framework. The amendments are applied prospectively. Earlier application is permitted if at the same time or earlier an entity also applies all the amendments made by Amendments to References to the Conceptual Framework in HKFRS Standards, issued in June 2018. The application of the amendments will not have a material impact on the Group's financial statements.

- HKFRS 17, "Insurance Contracts". HKFRS 17 and the Amendments issued in October 2020, aims at replacing the current insurance contracts standard HKFRS 4, an interim standard that leads to highly divergent accounting practices that exist in the insurers' local jurisdictions. The new standard establishes the principles for the recognition, measurement, presentation and disclosure of insurance contracts, with an objective to ensure that an entity provides relevant information that faithfully represents insurance contracts. Early application of the standard is permitted but only if the entity also applies HKFRS 9. The Group is considering the financial impact of the standard and the timing of its application.

- HK Int 5 (2020), "Presentation of Financial Statements – Classification by the Borrower of a Term Loan that Contains a Repayment on Demand Clause". This interpretation is revised as a consequence of HKAS 1 (Amendments), "Classification of Current or Non-current Liabilities" issued in August 2020, to align the corresponding wordings with no change in conclusion. The amendments are applied retrospectively. Early adoption is permitted. The Group is considering the impact of the interpretation and the timing of its application.

(c) Improvements to HKFRSs

"Improvements to HKFRSs" contains a number of amendments to HKFRSs which the HKICPA considers not urgent but necessary. It comprises amendments that result in accounting changes for presentation, recognition or measurement purpose as well as terminology or editorial amendments related to a variety of individual HKFRSs. These improvements will not have a material impact on the Group's financial statements.

2. Significant accounting policies (continued)

2.2 Consolidation

The consolidated financial statements include the financial statements of the Company and all of its subsidiaries for the year ended 31 December 2020.

(1) Subsidiaries

Subsidiaries are entities (including structured entities), directly or indirectly, controlled by the Group. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee (i.e. existing rights that give the Group the current ability to direct the relevant activities of the investee). When the Group has, directly or indirectly, less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including: (a) the contractual arrangement with the other vote holders of the investee; (b) rights arising from other contractual arrangements; and (c) the Group's voting rights and potential voting rights. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are de-consolidated from the date that control ceases.

If the Group loses control over a subsidiary, it derecognises (i) the assets (including goodwill) and liabilities of the subsidiary, (ii) the carrying amount of any non-controlling interests; and recognises (i) the fair value of the consideration received, (ii) the fair value of any investment in that former subsidiary retained; reclassifies the amounts previously recognised in other comprehensive income to the income statement or retained earnings, as appropriate, on the same basis as directly disposed of the related assets or liabilities; recognises any resulting differences as gain or loss in the income statement.

If the Group is committed by the Board to a sale plan involving loss of control of a subsidiary (a disposal group) that is unlikely to be withdrawn or changed significantly, the Group shall classify all the assets and liabilities of that subsidiary as held for sale only when the following criteria are met on or before the end of the reporting period: (i) the carrying amount will be recovered principally through a sale transaction rather than through continuing use; (ii) the subsidiary is available for immediate sale in its present condition subject only to terms that are usual and customary for the sale of its kind and its sale must be highly probable, including a high probability of shareholders' approval, if needed; (iii) an active programme to locate a buyer at a reasonable price has been initiated and to complete the sale within one year, regardless of whether the Group will or will not retain a non-controlling interest after the sale. Disposal group (other than investment properties and financial instruments) is initially recognised and subsequently remeasured at the lower of its carrying amount and fair value less costs to sell. Properties, plant and equipment classified as held for sale are not depreciated.

2. Significant accounting policies (continued)

2.2 Consolidation (continued)

(1) Subsidiaries (continued)

(i) Business combinations not under common control

Acquisitions of businesses not under common control are accounted for using the acquisition method. The consideration transferred in a business combination is the fair values at the acquisition date of the assets transferred, the liabilities incurred (including contingent consideration arrangement) and the equity interests issued by the Group in exchange for control of the acquiree. Acquisition-related costs are expensed in the income statement as incurred.

Goodwill is measured as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the Group's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If after assessment, the fair value of the acquiree's identifiable net assets exceeds the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree and the fair value of the Group's previously held interest in the acquiree (if any), the excess is recognised immediately in the income statement as a gain on bargain. Subsequently, goodwill is subject to impairment testing at least annually.

Where the consideration transferred by the Group in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at fair value at the acquisition date and considered as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with the corresponding adjustments being made against goodwill or gain on bargain purchase. Measurement period adjustments are adjustments that arise from additional information obtained during the measurement period about facts and circumstances that existed as of the acquisition date. The measurement period does not exceed one year from the acquisition date.

On an acquisition-by-acquisition basis, the Group recognises any non-controlling interests in the acquiree either at fair value or at the non-controlling interests' proportionate share of the fair value of the acquiree's identifiable net assets.

2. Significant accounting policies (continued)

2.2 Consolidation (continued)

(1) Subsidiaries (continued)

(ii) Business combinations under common control

For a combination with a company under common control, the merger accounting method will be applied. The principle of merger accounting is a way to combine companies under common control as though the business of the acquiree had always been carried out by the acquirer. The Group's consolidated financial statements represent the consolidated results, consolidated cash flows and consolidated financial position of the Group as if any such combination had occurred from the date when the Company and the acquiree first came under common control (i.e. no fair value adjustment on the date of combination is required). The difference between the consideration and carrying amount at the time of combination is recognised in equity. The effects of all transactions between the Group and the acquiree, whether occurring before or after the combination, are eliminated in preparing the consolidated financial statements of the Group. Comparative amounts are presented as if the acquiree had been combined at the beginning of the previous reporting period. The transaction costs for the combination will be expensed in the income statement.

Inter-company transactions, balances and unrealised gains on transactions between group companies are eliminated; unrealised losses are also eliminated unless the transaction provides evidence of impairment of the assets transferred. Where necessary, accounting policies of subsidiaries have been changed to ensure consistency with the policies adopted by the Group.

In the Company's balance sheet, the investments in subsidiaries are stated at cost less allowance for impairment losses. The results of subsidiaries are accounted for by the Company on the basis of dividends received and receivable. Dividend income from subsidiaries is recognised in the income statement when the right to receive payment is established.

(2) Transactions with non-controlling interests

The Group treats transactions with non-controlling interests without change of control as transactions with equity owners of the Group. For purchases from non-controlling interests, the difference between any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recognised in equity. Gains or losses on disposals to non-controlling interests are also recognised in equity.

When the Group ceases to have control or significant influence, any retained interest in the entity is re-measured to its fair value, with the change in carrying amount recognised in the income statement. The fair value is the initial carrying amount for the purposes of subsequent accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities. Amounts previously recognised in other comprehensive income are reclassified to the income statement or retained earnings, as appropriate.

2. Significant accounting policies (continued)

2.2 Consolidation (continued)

(3) Associates and joint ventures

An associate is the entity over which the Group has significant influence but not control or joint control, generally accompanying a shareholding of between 20% and 50% of the voting rights.

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

Investments in associates and joint ventures are accounted for using the equity method of accounting and are initially recognised at cost, unless it is classified as held for sale (or included in a disposal group that is classified as held for sale). The Group's investments in associates and joint ventures include goodwill, net of accumulated impairment loss and any related accumulated foreign currency translation difference.

The Group's share of the post-acquisition profits or losses of associates or joint ventures is recognised in the income statement, and its share of post-acquisition movements in reserves is recognised in reserves. The accumulated post-acquisition movements are adjusted against the cost of the investment. When the Group's share of losses in an associate or a joint venture equals or exceeds its interest in the associate or joint venture, the Group does not recognise further losses unless the Group has incurred obligations or made payments on behalf of the associates or joint ventures.

Unrealised gains on transactions between the Group and its associates or joint ventures are eliminated to the extent of the Group's interest in the associates or joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of impairment of the asset transferred.

If the ownership interest in an associate or a joint venture is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income are reclassified to the income statement or retained earnings, where appropriate.

2. Significant accounting policies (continued)

2.3 Segmental reporting

The operating result of segments are reported in a manner consistent with the internal reporting provided to the Management Committee, which is the chief operating decision maker of the Group, that allocates resources and assesses the performance of operating segments. Income and expenses directly associated with each segment are included in determining operating segment performance.

2.4 Foreign currency translation

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). The consolidated financial statements are presented in Hong Kong dollars, which is the Company's functional and presentation currency.

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or exchange rates at the end of the reporting period for items that are re-measured. Foreign exchange gains and losses resulting from the settlement of foreign currency transactions using the exchange rates prevailing at the dates of the transactions and monetary assets and liabilities denominated in foreign currencies translated at the exchange rate at the end of the reporting period are recognised directly in the income statement, except when deferred in other comprehensive income as qualifying cash flow hedges or qualifying net investment hedges.

Translation differences on monetary securities held at fair value through profit or loss are reported as part of the fair value gain or loss. Changes in the fair value of monetary securities denominated in foreign currency classified as fair value through other comprehensive income are analysed between translation differences resulting from changes in the amortised cost of the securities and other changes in the carrying amount of the securities. Translation differences related to changes in the amortised cost are recognised in the income statement, and other changes in the carrying amount are recognised in other comprehensive income.

Translation differences on non-monetary items, such as equities held at fair value through profit or loss, are reported as part of the fair value gain or loss. Translation differences on non-monetary financial assets such as equities classified as fair value through other comprehensive income are included in other comprehensive income.

The results and financial position of all the group entities that have a functional currency different from Hong Kong dollars are translated into Hong Kong dollars as follows:

- assets and liabilities are translated at the closing rate at the end of the reporting period;
- income and expenses are translated at average exchange rates; and
- all resulting exchange differences are recognised in the currency translation reserve in equity.

On consolidation, exchange differences arising from the translation of the net investment in foreign entities, borrowings and other currency instruments designated as hedges of such investments are taken to other comprehensive income and are accumulated separately in the translation reserve. When a foreign entity is disposed, such exchange differences are reclassified from equity to the income statement, as part of the gain or loss on sale.

2. Significant accounting policies (continued)

2.5 Derivative financial instruments and hedge accounting

Derivatives are initially recognised at fair value on the date the derivative contract is entered into and are subsequently re-measured at fair value. Fair values are obtained from quoted market prices in active markets, including recent market transactions, and through the use of valuation techniques, including discounted cash flow models and option pricing models, as appropriate. All derivatives are carried as assets when fair value is positive and as liabilities when fair value is negative.

Certain derivatives embedded in financial liabilities are treated as separate derivatives when their economic characteristics and risks are not closely related to those of the host contract and the host contract is not carried at fair value through profit or loss. These embedded derivatives are measured at fair value with changes in fair value recognised in the income statement.

Derivatives are categorised as held for trading and changes in their fair value are recognised immediately in the income statement unless they are designated as hedges and are effective hedging instruments, then they are subject to measurement under the hedge accounting requirements.

For derivative instruments being designated as hedging instrument in an effective hedge, the method of recognising the resulting fair value gain or loss depends on the nature of the item being hedged. The Group designates certain derivatives as either:

(a) hedges of the fair value of recognised assets or liabilities or firm commitments (fair value hedge); or

(b) hedges of a particular risk associated with a highly probable future cash flow attributable to a recognised asset or liability, or a highly probable forecast transaction (cash flow hedge).

The Group documents at inception the relationship between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. The Group also documents its assessment, both at the hedge inception and on an ongoing basis, of the economic relationship, credit risks, the hedge ratio and an evaluation of the effectiveness of the hedging instruments in offsetting changes in fair values or cash flows of hedged items. These criteria should be met before a hedge can be qualified to be accounted for under hedge accounting. Hedge accounting may become ineffective if the hedging instrument and the hedged item lose economic relationship, or a significant change of the counterparties' credit risks that dominates the fair value change of the hedging instruments or the hedged items.

2. Significant accounting policies (continued)

2.5 Derivative financial instruments and hedge accounting (continued)

(a) Fair value hedge

Changes in the fair value of derivatives that are designated and qualified as effective fair value hedges are recognised in the income statement, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk.

When fair value hedge accounting is applied to financial instruments carried at amortised costs, the carrying values of the hedged items are adjusted for changes in fair value that are attributable to the interest rate risk being hedged with the derivative instruments rather than carried at amortised cost, such carrying value adjustment is recognised in the income statement together with the changes in fair value of the hedging derivatives.

If the hedge relationship no longer meets the criteria for hedge accounting or is terminated for reasons other than derecognition, e.g. due to repayment of the hedged item, the unamortised carrying value adjustment (the difference between the carrying value of the hedged item at the time of termination and the value at which it would have been carried had the hedge never existed) to the hedged item is amortised to the income statement over the remaining life of the hedged item by the effective interest method. If the hedged item is derecognised, the unamortised carrying value adjustment is recognised immediately in the income statement.

For fair value hedge relationships where the hedged items are debt instruments carried at FVOCI, changes in fair value are recorded in the income statement whilst hedge accounting is in place. When the hedge relationship no longer meets the criteria for hedge accounting or is terminated for reasons other than derecognition, the cumulative effective hedged portion of fair value change recognised in the income statements are amortised by the effective interest method back to the revaluation reserve. If the hedged item is derecognised, the unamortised cumulative effective hedged portion of fair value change recognised in the income statement are reclassified to revaluation reserve immediately.

(b) Cash flow hedge

The effective portion of changes in the fair value of derivatives that are designated and qualified as cash flow hedges are recognised in other comprehensive income and accumulated in equity. The gain or loss relating to the ineffective portion is recognised immediately in the income statement. Amounts accumulated in equity are reclassified to the income statement in the periods when the hedged item affects profit or loss.

When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for hedge accounting, any accumulated gain or loss existing in equity at that time remains in equity and is recognised in the income statement when the forecast transaction is ultimately recognised in the income statement. When a forecast transaction is no longer expected to occur, the accumulated gain or loss that was reported in equity is immediately reclassified to the income statement.

2. Significant accounting policies (continued)

2.5 Derivative financial instruments and hedge accounting (continued)

(c) Net investment hedge

Hedges of net investments in foreign operations are accounted for in a similar way to cash flow hedges. A gain or loss on the effective portion of the hedging instrument is recognised in other comprehensive income and accumulated in equity; a gain or loss on the ineffective portion is recognised immediately in the income statement. Accumulated gains and losses previously recognised in other comprehensive income are reclassified to the income statement upon disposal of the foreign operation as part of the gain or loss on disposal.

2.6 Offsetting financial instruments

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis, or realise the asset and settle the liability simultaneously.

2.7 Income and expense

(1) Interest income and expense

Interest income and expense are recognised in the income statement for all financial assets carried at amortised cost and fair value through other comprehensive income, and financial liabilities using the effective interest method. Similar interest income and expense arising from non-derivative financial assets and liabilities carried at fair value through profit or loss are determined using similar method, but excluding their transaction costs.

The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability and of allocating the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability. When calculating the effective interest rate, the Group estimates future cash flows considering all contractual terms of the financial instrument (e.g. prepayment options or incentives relating to residential mortgage loans) but does not consider future credit losses. The calculation includes fees, premiums or discounts and basis points paid or received between parties to the contract, and directly attributable origination fees and costs which represent an integral part of the effective yield.

For all hedge transactions where interest rate is the hedged risk, interest income or interest expense from hedged instruments such as fixed rate debt securities or fixed rate subordinated notes are disclosed on a net basis together with net interest income/expense arising from the hedging instrument such as interest rate swap.

2. Significant accounting policies (continued)

2.7 Income and expense (continued)

(2) Non-interest income and expense

Income from service is recognised when the Group fulfils its performance obligation, either over time or at a point in time on a basis when a customer obtains control of the service.

Fee income from services are recognised over time at a fixed or variable price on a systematic basis over the life of the agreement when the contract requires services to be provided over time such as account service and credit card fees, or recognised at a point in time under transaction-based arrangements when service has been fully provided to the customer such as broking services and loan syndication arrangement.

Dividend income is recognised when the right to receive payment is established.

The accounting policies for insurance premium income are disclosed in Note 2.20.

2.8 Financial assets

The Group classifies its financial assets into one of the following measurement categories at initial recognition as subsequently measured at: fair value through profit or loss ("FVPL"), amortised cost and fair value through other comprehensive income ("FVOCI"). The classification depends on the entity's business model for managing its financial instruments and the contractual cash flow characteristics of the instruments, or the election of fair value option. All financial assets are recognised initially at fair value. Except for financial assets carried at FVPL, all transaction costs of financial assets are included in their initial carrying amounts.

(1) Financial assets at fair value through profit or loss

This category has two sub-categories: financial assets designated at fair value through profit or loss at inception, or financial assets mandatorily required to be measured at fair value through profit or loss, including those held for trading.

A financial asset which has been acquired or incurred principally for the purpose of selling in the short term or is part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking is classified as held for trading. Derivatives are also classified as held for trading unless they are designated as effective hedging instruments.

A financial asset, other than those held for trading or mandatorily measured at fair value, will be designated as a financial asset at FVPL, if it eliminates or significantly reduces a measurement or recognition inconsistency (sometimes referred to as "an accounting mismatch") that would otherwise arise from measuring the financial assets or recognising the gains and losses on them on different bases, and is so designated by the Management.

These assets are recognised initially at fair value, with transaction costs taken directly to the income statement, and are subsequently re-measured at fair value.

Gains and losses from changes in the fair value of such assets (excluding the interest component) are reported in net trading gain/loss or net gain/loss on financial instruments designated at FVPL. The interest component is reported as part of the interest income. Dividends on equity instruments of this category are also recognised in net trading gain/loss or net gain/loss on financial instruments designated at FVPL when the Group's right to receive payment is established.

2. Significant accounting policies (continued)

2.8 Financial assets (continued)

(2) Financial assets at amortised cost

Financial assets are classified as subsequently measured at amortised cost if both of the following conditions are met: (i) the financial assets are held within a business model with the objective to hold financial assets in order to collect contractual cash flows ("hold-to-collect" business model), and (ii) the contractual terms of the financial asset give rise to cash flows that are solely payments of principal and interest on the principal amount outstanding on specified dates. They are initially recognised at fair value plus any directly attributable transaction costs and are subsequently measured at amortised cost using the effective interest method less allowances for impairment losses. Interest income which includes the amortisation of premium or discount is calculated using the effective interest method and is recognised in the income statement, gains or losses are recognised in profit or loss when the asset is derecognised, modified or impaired.

(3) Financial assets at fair value through other comprehensive income

Debt instruments are classified as subsequently measured at FVOCI if both of the following conditions are met: (i) the financial assets are held within a business model with the objective of both holding to collect contractual cash flows and selling, and (ii) the contractual terms of the financial assets give rise to cash flows that are solely payments of principal and interest on the principal amount outstanding on specified dates.

Financial assets at FVOCI are initially recognised at fair value plus any directly attributable transaction costs, and are subsequently measured at fair value. Unrealised gains or losses arising from changes in the fair value of the financial assets are recognised directly in other comprehensive income, until the financial asset is derecognised or impaired at which time the accumulated gain or loss previously recognised in equity should be transferred to the income statement. However, interest income which includes the amortisation of premium and discount is calculated using the effective interest method and is recognised in the income statement.

For equity investments, an irrevocable election can be made at initial recognition to recognise unrealised and realised fair value gains or losses in other comprehensive income without subsequent reclassification of fair value gains or losses to the income statement even upon disposal. Dividends on equity instruments classified as FVOCI are recognised in other operating income when the Group's right to receive payment is established. Equity instruments designated at FVOCI are not subject to impairment assessment.

The treatment of translation differences on FVOCI securities is dealt with in Note 2.4.

2. Significant accounting policies (continued)

2.9 Financial liabilities

The Group classifies its financial liabilities under the following categories: trading liabilities, financial liabilities designated at fair value through profit or loss, deposits, debt securities and certificates of deposit in issue, subordinated liabilities, and other liabilities. All financial liabilities are classified at inception and recognised initially at fair value, and in the case of financial liability not at fair value through profit or loss, plus or minus transaction costs.

(1) Trading liabilities

A financial liability is classified as held for trading if it is incurred principally for the purpose of repurchasing in the short term. It is measured at fair value and any gains and losses from changes in fair value are recognised in the income statement, with interest component being reported as part of the interest expenses.

(2) Financial liabilities designated at fair value through profit or loss

A financial liability can be designated at fair value through profit or loss if it is so designated at inception. Financial liabilities so designated include certain certificates of deposit in issue and certain deposits received from customers that are embedded with derivatives. A financial liability is so designated if it meets one of the following criteria:

- eliminates or significantly reduces a measurement or recognition inconsistency (sometimes referred to as "an accounting mismatch") that would otherwise arise from measuring the financial liabilities or recognising the gains and losses on them on different bases; or

- applies to a group of financial assets, financial liabilities or both that is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy, and information about the Group is provided internally on that basis to the key management; or

- relates to financial liabilities containing one or more embedded derivatives that significantly modify the cash flows resulting from those financial liabilities.

Financial liabilities designated at fair value through profit or loss are measured at fair value and any gains and losses from changes in fair value are recognised in the income statement, except for fair value changes arising from own credit risks are recognised as other comprehensive income and subsequently reclassified to the retained earnings upon derecognition, unless such would create or enlarge an accounting mismatch in profit or loss, then all gains and losses from changes in fair value are recognised in the income statement.

(3) Deposits, debt securities and certificates of deposit in issue, subordinated liabilities and other liabilities

Deposits, debt securities and certificates of deposit in issue, together with subordinated liabilities and other liabilities, other than those classified as trading liabilities or designated at fair value through profit or loss are carried at amortised cost. Any difference (if available) between proceeds net of transaction costs and the redemption value is recognised in the income statement over the period using the effective interest method.

2. Significant accounting policies (continued)

2.10 Financial guarantee contracts and undrawn loan commitments

Financial guarantee contracts are contracts that require the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due, in accordance with the terms of a contract between the holder and the debtor.

Financial guarantee contracts are initially recognised as financial liabilities at fair value on the date the guarantees were given. Subsequent to initial recognition, the Group's liabilities under such guarantees are measured at the higher of (i) an ECL provision as set out in Note 2.14 and (ii) the amount initially recognised less, where appropriate, accumulated amortisation recognised over the life of the guarantee on a straight-line basis. Any changes in the liability relating to financial guarantee contracts are taken to the income statement.

Undrawn loan commitments are commitments under which, over the duration of the commitment, the Group is required to provide a loan with pre-specified terms to the customer. These contracts are in the scope of the ECL requirements as set out in Note 2.14.

The ECL provision for financial guarantees and loan commitments are reported under "Other accounts and provisions" in the financial statements.

2.11 Recognition, derecognition and modification of financial instruments

Purchases and sales of financial assets subsequently measured at FVPL, securities measured at FVOCI and amortised costs are recognised on the trade date, the date on which the Group purchases or sells the assets. Loans and advances and other financial assets are recognised when cash is advanced to the counterparties. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or where the Group has transferred substantially all risks and rewards of ownership. When the Group neither transfers nor retains substantially all the risks and rewards of ownership of the financial asset, the Group either continues to recognise the transferred financial asset to the extent of its continuing involvement if control remains or derecognise it if there is no retained control. If the contractual cashflow of financial instruments measured at amortised cost or FVOCI are renegotiated or modified, the modified contractual cashflow should be discounted using the original effective interest rate, and compared with the original amortised cost before impairment. If the difference is material, the original financial instrument should be derecognised and then re-recognised with the present value aforementioned. Otherwise, the difference is adjusted to the original carrying value and accounted for in the profit or loss.

Trading liabilities, financial liabilities designated at FVPL and debt securities and certificates of deposit in issue are recognised on the trade date. Deposits that are not designated at FVPL are recognised when money is received from customers, other liabilities are recognised when such obligations arise. Financial liabilities are derecognised from the balance sheet when and only when the obligation specified in the contract is discharged, cancelled or expires. If the Group purchases its own debt, it is removed from the balance sheet, and the difference between the carrying amount of a liability and the consideration paid is included in profit or loss, except the own credit risk component for those designated at FVPL.

2. Significant accounting policies (continued)

2.11 Recognition, derecognition and modification of financial instruments (continued)

Securities and bills sold to a counterparty with an obligation to repurchase at a pre-determined price on a specified future date under a repurchase agreement are referred to as repos. Securities and bills purchased from a counterparty with an obligation to re-sell to the counterparty at a pre-determined price on a specified future date under a resale agreement are referred to as reverse repos.

Repos or securities lending are initially recognised as due to banks, placements from banks and other financial institutions, as appropriate, at the actual amount of cash received from the counterparty. Financial assets given as collateral for repurchase agreements are not derecognised and are recorded as investment in securities or financial assets at FVPL. Reverse repos or securities borrowings with a "hold-to-collect" business model and contractual cash flow of solely payments of principal and interest on the principal outstanding are initially recognised in the balance sheet as cash and due from banks or placements with banks and other financial institutions, as appropriate, at the actual amount of cash paid to the counterparty. Financial assets received as collateral under reverse repurchase agreements are not recognised on the balance sheet. The difference between the sale and the repurchase price is recognised as interest income or interest expense over the life of the agreements using the effective interest method.

2.12 Fair value measurement

The Group measures its premises and investment properties, precious metals and certain financial instruments at fair value at the end of each reporting period. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants in its principal market or the most advantageous market accessible by the Group at the measurement date.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their best economic interest.

The Group uses the price within the bid-offer spread that is most representative of the fair value of financial instruments, where appropriate, includes using on the residual of the net offsetting risk position of portfolios of financial assets and financial liabilities in cases the Group manages such groups of financial assets and liabilities according to their net market risk exposures. Despite the Group measures the fair value of these groups of financial instruments on a net basis, the underlying financial assets and financial liabilities are separately presented in the financial statements unless the offsetting criteria stated in Note 2.6 are fulfilled.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

If the market for assets or liabilities is not active, the Group uses valuation techniques, including the use of recent arm's length transactions, discounted cash flow analysis, option pricing models and other valuation techniques commonly used by market participants, that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

2. Significant accounting policies (continued)

2.13 Precious metals

Precious metals comprise gold, silver and other precious metals. Precious metals are initially recognised and subsequently re-measured at fair value. Mark-to-market gains or losses on precious metals are included in net trading gain/loss.

2.14 Impairment of financial assets

The Group recognises a loss allowance for expected credit losses (ECLs) on the following items:

- financial assets measured at amortised cost;
- debt securities measured at FVOCI; and
- loan commitments and financial guarantees issued, which are not measured at FVPL.

Financial assets measured at fair value, including units in bond funds, equity securities measured at FVPL, equity securities designated at FVOCI (non-recycling) and derivative financial assets, are not subject to the ECL assessment.

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all expected cash shortfalls (i.e. the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive).

For undrawn loan commitments and financial guarantees outstanding, expected cash shortfalls are measured as the difference between (i) the contractual cash flows that would be due to the Group if the holder/beneficiary of the loan commitment/financial guarantee draws down/claims on the loan/financial guarantee and (ii) the cash flows that the Group expects to receive if the loan is drawn down/financial guarantee is claimed.

The expected cash shortfalls are discounted where the effect of discounting is material. The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk. Where the financial instrument such as revolving credit facilities includes both a drawn and undrawn commitment, ECL is measured over the period that the Group remains exposed to credit risk that is not mitigated by management actions in respect of credit risk.

In measuring ECLs, the Group takes into account reasonable and supportable information that is available. This includes information about past events, current conditions and forecasts of future economic conditions.

ECLs are measured on either of the following bases:

- 12-month ECLs: these are losses that are expected to result from possible default events within 12 months after the reporting date; or
- lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of the items to which the ECL model applies.

2. Significant accounting policies (continued)

2.14 Impairment of financial assets (continued)

The Group will account for expected credit losses within the next 12 months as Stage 1 when those financial instruments are initially recognised; and to recognise lifetime expected credit losses as Stage 2 when there has been significant increases in credit risk since initial recognition. Lifetime expected credit losses will be recognised for credit-impaired financial instruments as Stage 3 if one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred and interest will then be accrued net of the impairment amount of the respective Stage 3 financial assets.

In assessing whether the credit risk of a financial instrument has increased significantly since initial recognition, the Group compares the risk of default occurring on the financial instrument assessed at the reporting date with that assessed at the date of initial recognition.

In particular, the following information is taken into account when assessing whether credit risk has increased significantly since initial recognition:

- failure to make payments of principal or interest 30 days after their contractually due dates;
- an actual or expected significant deterioration in a financial instrument's external or internal credit rating (if available);
- an actual or expected significant deterioration in the operating results of the debtor; and
- existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Group.

For loan commitments and financial guarantees, the date of initial recognition for the purpose of assessing ECLs is considered to be the date that the Group becomes a party to the irrevocable commitment. In assessing whether there has been a significant increase in credit risk since initial recognition of a loan commitment or a financial guarantee, the Group considers changes in the risk of default occurring on the loan and advances to which the loan commitment/financial guarantee relates.

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial instruments are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

2. Significant accounting policies (continued)

2.14 Impairment of financial assets (continued)

The Group considers that a financial instrument is credit-impaired when there is observable data about:

– significant financial difficulty incurred by the debtor;

– a breach of contract, such as a default or delinquency in principal or interest payment;

– for economic or legal reasons related to the debtor's financial difficulty, the Group has granted to the debtor a concession that it would not otherwise consider;

– probable that the debtor will become bankrupt or undergo other financial reorganisation; or

– other observable data indicating that there is a measurable decrease in the estimated future cash flows from such advances.

The Group considers on an individual basis both quantitative and qualitative information that is reasonable and supportable, including historical experience and forward-looking information that is available without undue cost or effort.

ECLs are remeasured at each reporting date to reflect changes in the financial instrument's credit risk since initial recognition. Any change in the ECL amount is recognised as an impairment gain or loss in profit or loss. The Group recognises an impairment gain or loss for all relevant financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt securities that are measured at FVOCI, for which the loss allowance is recorded in the fair value reserve.

Interest income recognised in accordance with Note 2.7 is calculated based on the gross carrying amount of the financial asset unless the financial asset is credit-impaired (Stage 3), in which case interest income is calculated based on the amortised cost (i.e. the gross carrying amount less loss allowance) of the financial asset. The determination of credit-impaired financial asset is further explained in Note 4.1.

When a financial asset is uncollectible, it is written off against the gross carry amount of the financial asset and the related allowance for impairment losses. Such assets are written off after all the necessary procedures have been completed and the amount of the loss has been determined. The assets written off are still subject to enforcement activity. Subsequent recoveries of amounts previously written off decrease the amount of impairment losses in the income statement.

2. Significant accounting policies (continued)

2.15 Impairment of investments in subsidiaries, associates, joint ventures and non-financial assets

Assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Potential indications of impairment may include significant adverse changes in the technological, market, economic or legal environment in which the assets operate or whether there has been a significant or prolonged decline in value below their cost. "Significant" is evaluated against the original cost of the investment and "prolonged" against the period in which the fair value has been below its original cost. Impairment of intangible assets with indefinite useful life are tested for impairment annually.

An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units). Impaired assets are reviewed for possible reversal of the impairment at each reporting date.

In the Company's balance sheet, impairment testing of the investment in a subsidiary, associate or joint venture is also required upon receiving dividend from that entity if the dividend exceeds the total comprehensive income of that entity concerned in the period the dividend is declared or if the carrying amount of that entity in the Company's balance sheet exceeds the carrying amount of that entity's net assets including goodwill in its consolidated balance sheet.

2.16 Investment properties

Properties (including right-of-use assets arising from leases over leasehold land on which properties are situated), that are held for long-term rental yields or for capital appreciation or both, and that are not occupied by the companies in the Group, are classified as investment properties. Properties leased out within group companies are classified as investment properties in individual companies' financial statements and as premises in consolidated financial statements.

Investment properties are recognised initially at cost, including related transaction costs. After initial recognition, investment properties are measured at fair value.

Subsequent expenditure is charged to the asset's carrying amount only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The work in progress item is stated at fair value. All other repairs and maintenance costs are expensed in the income statement during the financial period in which they are incurred.

Any changes in fair value are recognised directly in the income statement.

If an investment property becomes owner-occupied, it is reclassified as premises, and its fair value at the date of reclassification becomes its cost for accounting purposes. If an item of premises becomes an investment property because its use has changed, any difference resulting between the carrying amount and the fair value of this item at the date of transfer is recognised in other comprehensive income as a revaluation of premises under HKAS 16 "Property, Plant and Equipment". However, if a fair value gain reverses a previous revaluation loss or impairment loss classified under premises, the gain is recognised in the income statement up to the amount previously debited.

2. Significant accounting policies (continued)

2.17 Properties, plant and equipment

Properties (including right-of-use assets arising from leases over leasehold land on which properties are situated) are mainly branches and office premises. Premises are stated at fair value based on periodic, at least annually, valuations by external independent valuers less any subsequent accumulated depreciation and impairment losses. Any accumulated depreciation at the date of revaluation is eliminated against the gross carrying amount of the asset and the net amount is restated to the revalued amount of the asset. In the intervening periods, the directors review the carrying amount of premises, by reference to the open market value of similar properties, and adjustments are made when there has been a material change.

Increases in the carrying amount arising on revaluation of premises are credited to the premises revaluation reserve through other comprehensive income. Decreases that offset previous increases of the same individual asset are charged against premises revaluation reserve through other comprehensive income; all other decreases are expensed in the income statement. Any subsequent increases are credited to the income statement up to the amount previously debited, and then to the premises revaluation reserve. Upon disposal of premises, the relevant portion of the premises revaluation reserve realised in respect of previous valuations is released and transferred from the premises revaluation reserve to retained earnings.

All plant and equipment and right-of-use assets other than leasehold land (see Note 2.19) are stated at historical cost less accumulated depreciation and impairment losses. Historical cost includes expenditures that are directly attributable to the acquisition and installation of the items.

Subsequent costs are included in an asset's carrying amount or are recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The item is stated at cost less impairment until it begins to generate economic benefits, then the item is subsequently measured according to the measurement basis of its respective assets class. All other repairs and maintenance costs are charged to the income statement during the financial period in which they are incurred or provided for.

Depreciation is calculated on the straight-line method to write down the cost or revalued amount of such assets over their estimated useful lives as follows:

• Properties	Over the life of government land leases
• Plant and equipment	2 to 15 years
• Right-of-use asset	Shorter of useful lives and lease terms

The useful lives of assets are reviewed, and adjusted if appropriate, as at the end of each reporting period.

2. Significant accounting policies (continued)

2.17 Properties, plant and equipment (continued)

At the end of each reporting period, both internal and external sources of information are considered to determine whether there is any indication that properties, plant and equipment are impaired. If any such indication exists, the recoverable amount of the asset is estimated and where relevant, an impairment loss is recognised to reduce the asset to its recoverable amount. Such an impairment loss is recognised in the income statement except where the asset is carried at valuation and the impairment loss does not exceed the revaluation surplus for that same asset, in which case it is treated as a revaluation decrease. The recoverable amount is the higher of the asset's fair value less costs to sell and value in use. Impairment loss is reversed through the premises revaluation reserve or the income statement as appropriate.

Gains or losses on disposals are determined as the difference between the net disposal proceeds and the carrying amount, relevant taxes and expenses. These are recognised in the income statement on the date of disposal. Any related revaluation surplus is transferred from the revaluation reserve to retained earnings and is not reclassified to the income statement.

2.18 Intangible assets

Intangible assets are identifiable non-monetary assets without physical substance owned and controlled by the Group, mainly computer application software. Intangible assets are stated at acquisition cost less accumulated amortisation and impairment.

Amortisation of intangible assets with finite useful lives is charged to profit or loss on a straight-line basis over the assets' estimated useful lives. The following intangible assets with finite useful lives are amortised from the date they are available for use and their estimated useful lives are as follows:

- Capitalised computer application software: 3 to 5 years

Both the period and method of amortisation are reviewed annually.

Gains or losses on disposals are determined as the difference between the net disposal proceeds and the carrying amount, relevant taxes and expenses. These are recognised in the income statement on the date of disposal.

2. Significant accounting policies (continued)

2.19 Leases

At inception of a contract, the Group assesses whether the contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. Control is conveyed where the customer has both the right to direct the use of the identified asset and to obtain substantially all of the economic benefits from that use over the contract period.

(1) As a lessee

On the lease commencement date, the Group recognises a right-of-use asset and a lease liability, except for short-term leases that have a lease term of 12 months or less and leases of low-value assets. When the Group enters into a lease in respect of a low-value asset, the Group decides whether to capitalise the lease on a lease-by-lease basis. The lease payments associated with those leases which are not capitalised are recognised as an expense on a systematic basis over the lease term.

Where the lease is capitalised, the lease liability is initially recognised at the present value of the lease payments payable over the lease term, after taking into account payments to be made in the optional period if the extension option is reasonably certain to be exercised, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, using a relevant incremental borrowing rate. The lease payments include fixed payments (including in-substance fixed payments) less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for termination of a lease, if the lease term reflects the Group exercising the option to terminate.

After initial recognition, the lease liability is measured at amortised cost and interest expense is calculated using a constant periodic rate of interest. Variable lease payments that do not depend on an index or a rate are not included in the measurement of the lease liability and hence are charged to income statement in the accounting period in which they are incurred.

The right-of-use asset recognised when a lease is capitalised is initially measured at cost, which comprises the initial amount of the lease liability plus any lease payments made at or before the commencement date, and any initial direct costs incurred. Where applicable, the cost of the right-of-use assets also includes an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, then discounted to its present value, and less any lease incentives received. The right-of-use asset is subsequently stated at cost less accumulated depreciation and impairment losses (see Note 2.17), and adjusted when the lease liabilities are remeasured except for the following types of right-of-use asset:

- right-of-use assets that meet the definition of investment property are carried at fair value in accordance with Note 2.16; and
- right-of-use assets related to leasehold land and buildings that do not meet the definition of investment property and where the Group is the registered owner of the leasehold interest are carried at revalued amount in accordance with Note 2.17.

2. Significant accounting policies (continued)

2.19 Leases (continued)

(1) As a lessee (continued)

The lease liability is remeasured when there is a change in future lease payments arising from a change in an index or a rate, or there is a change in the Group's estimate of the amount expected to be payable under a residual value guarantee, or there is a change of lease terms, or there is a change arising from the reassessment of whether the Group will be reasonably certain to exercise a purchase, extension or termination option. When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in income statement if the carrying amount of the right-of-use asset has been reduced to zero.

The Group presents right-of-use assets that do not meet the definition of investment property in "Properties, plant and equipment" and presents lease liabilities in "Other accounts and provisions".

(2) As a lessor

When the Group acts as a lessor, it determines at lease inception whether each lease is a finance lease or an operating lease. A lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to the ownership of an underlying asset to the lessee. If this is not the case, the lease is classified as an operating lease.

When a contract contains lease and non-lease components, the Group allocates the consideration in the contract to each component on a relative stand-alone selling price basis. The rental income from operating leases is recognised on a straight-line basis over the lease term.

2.20 Insurance and investment contracts

(1) Insurance and investment contract classification, recognition and measurement

The Group follows the local regulatory requirements to measure the liabilities of its insurance contracts and investment contracts with the discretionary participation feature ("DPF").

The Group issues insurance contracts, which are contracts that transfer significant insurance risk and may also transfer financial risk. As a general guideline, the Group defines significant insurance risk as the possibility of having to pay benefits on the occurrence of an insured event that are at least 10% more than the benefit payable if the insured event did not occur. The Group issues long term business insurance contracts, which insure events covered by life policies (for example death, survival, or total permanent disability) over a long duration. A liability for contractual benefits that are expected to be incurred in the future is recorded when premiums are recognised. In addition, the Group issues investment contracts. Investment contracts transfer financial risk with no significant insurance risk. They contain a DPF which entitles the holders to receive additional benefits (supplement to guaranteed benefits) that are likely to be significant based on the performance and return of a specified pool or type of contracts.

Linked long term insurance contracts with embedded derivatives (which are closely related to the host insurance contracts) linking payments on the contract to units of the investment funds which the Group has invested with the consideration received from the contract holders, the liability is adjusted for all changes in the fair value of the underlying assets, and includes a liability for contractual benefits that are expected to be incurred in the future which is recorded when the premiums are recognised.

2. Significant accounting policies (continued)

2.20 Insurance and investment contracts (continued)

(1) Insurance and investment contract classification, recognition and measurement (continued)

Retirement scheme management category I contracts are classified as investment contracts. They also include an investment guarantee element in the determination of the credit rate to policyholders' accounts. The liability for these contracts is determined using a retrospective calculation method which represents an account balance based on the premiums received to date plus interest or bonus credited to the policyholders less policy charges.

Retirement scheme management category III insurance contracts, as defined in the Insurance Ordinance, insure events associated with the cessation of employment due to death. A liability for contractual benefits that are expected to be incurred in the future is recorded when premiums are recognised. The portion of the premium received on in-force contracts that relates to unexpired risks at the end of the reporting period is reported as the unearned premium liability, which is included in insurance liabilities.

Premiums are recognised as revenue when they become payable by the contract holders before the deduction of commissions and are gross of any taxes or duties levied on the premium. Benefits and claims are recorded as an expense when they are incurred.

The Group does not separately measure embedded derivatives that meet the definition of an insurance contract or options to surrender insurance contracts for a fixed amount (or an amount based on a fixed amount and an interest rate).

Contracts entered into by the Group with reinsurers under which the Group is compensated for losses on one or more contracts issued by the Group and that meet the classification requirement for insurance contracts as noted above are classified as reinsurance contracts held.

The benefits to which the Group is entitled under its reinsurance contracts held are recognised as reinsurance assets. These reinsurance assets consist of short-term amounts due from reinsurers as well as longer term receivables that are dependent on the expected claims and benefits arising from the related reinsured insurance contracts. Amounts recoverable from or due to reinsurers are measured consistently with the amounts associated with the underlying insurance contracts and in accordance with the terms of each reinsurance contract. Reinsurance liabilities are primarily premiums payable for reinsurance contracts and are recognised as an expense when due.

(2) Liability adequacy tests

At the end of each reporting period, liability adequacy tests are performed to ensure the adequacy of the insurance contract liabilities. In performing these tests, current best estimates of future contractual cash flows and claims handling and administrative expenses, as well as investment income from the assets backing such liabilities, are used. Any deficiency is immediately charged to the consolidated income statement, with a provision established for losses arising from the liability adequacy tests.

2. Significant accounting policies (continued)

2.21 Cash and cash equivalents

For the purposes of the consolidated cash flow statement, cash and cash equivalents comprise balances with original maturity less than three months from the date of acquisition, including cash, balances with banks and other financial institutions, short-term bills and notes classified as investment securities and certificates of deposit.

2.22 Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate of the amount of the obligation can be made.

2.23 Employee benefits

(1) Retirement benefit costs

The Group contributes to defined contribution retirement schemes under either recognised ORSO schemes or MPF schemes that are available to the Group's employees. Contributions to the schemes by the Group and employees are calculated as a percentage of employees' basic salaries for the ORSO schemes and in accordance with the MPF rules for MPF schemes. The retirement benefit scheme costs are charged to the income statement as incurred and represent contributions payable by the Group to the schemes. Contributions made by the Group that are forfeited by those employees who leave the ORSO scheme prior to the full vesting of their entitlement to the contributions are used by the Group to reduce the existing level of contributions or to meet its expenses under the trust deed of the ORSO schemes.

The assets of the schemes are held in independently-administered funds separate from those of the Group.

(2) Leave entitlements

Employee entitlements to annual leave and sick leave are recognised when they accrue to employees. A provision is made for the estimated liability for unused annual leave and the amount of sick leave expected to be paid as a result of services rendered by employees up to the end of the reporting period.

Compensated absences other than sick leave and special approved annual leave are non-accumulating; they lapse if the current period's entitlement is not used in full. Except for unexpired annual leave, they do not entitle employees to a cash payment for unused entitlement on leaving the Group.

(3) Bonus plans

The expected cost of bonus payments is recognised as a liability when the Group has a present legal or constructive obligation as a result of services rendered by employees and a reliable estimate of the obligation can be made. Liabilities for bonus plans that are expected to be settled longer than twelve months will be discounted if the amounts are significant.

2. Significant accounting policies (continued)

2.24 Current and deferred income taxes

Tax expenses for the period comprise current and deferred tax. Tax is recognised in the income statement, except to the extent that it relates to items recognised directly in other comprehensive income. In this case, the tax is also recognised in other comprehensive income.

Income tax payable on profits, based on the applicable tax law enacted or substantially enacted at the end of the reporting period in each jurisdiction where the Company and its subsidiaries, associates and joint ventures operate and generate taxable income, is recognised as a current income tax expense in the period in which profits arise.

Deferred income tax is provided in full, using the balance sheet liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred income tax is determined using tax rates and laws that have been enacted or substantially enacted by the end of the reporting period and are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled.

The principal temporary differences arise from asset impairment provisions, depreciation of premises and equipment, and revaluation of certain assets including securities at FVOCI and premises. However, the deferred income tax is not recognised if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss.

Deferred income tax liabilities are provided in full on all taxable temporary differences. Deferred income tax assets are recognised on deductible temporary differences, the carry forward of any unused tax credits and unused tax losses to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences, the carry forward of unused tax credits and unused tax losses can be utilised.

Deferred income tax is charged or credited in the income statement except for deferred income tax relating to fair value re-measurement of securities at FVOCI and revaluation of premises which are charged or credited to other comprehensive income, in which case the deferred income tax is also credited or charged to other comprehensive income and is subsequently recognised in the income statement together with the realisation of the deferred gain and loss.

Deferred tax liability or deferred tax asset arising from an investment property is determined based on the presumption that the revaluation amount of such investment property will be recovered through sale with the relevant tax rate applied.

2. Significant accounting policies (continued)

2.25 Repossessed assets

Repossessed assets are initially recognised at the lower of their fair value less costs to sell and the amortised cost of the related outstanding loans on the date of repossession, and the related loans and advances together with the related impairment allowances are derecognised from the balance sheet. Subsequently, repossessed assets are measured at the lower of their cost and fair values less costs to sell and are reported as "non-current assets held for sale" included in "Other assets".

2.26 Fiduciary activities

The Group commonly acts as a trustee, or in other fiduciary capacities, that result in its holding or managing assets on behalf of individuals, trusts and other institutions. These assets and any gains or losses arising thereon are excluded from these financial statements, as they are not assets of the Group.

2.27 Contingent liabilities and contingent assets

A contingent liability is a possible obligation that arises from past events and whose existence will only be confirmed by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group. It can also be a present obligation arising from past events that is not recognised because it is not probable that an outflow of economic resources will be required or the amount of obligation cannot be measured reliably.

A contingent liability is not recognised as a provision but is disclosed in the notes to the financial statements. When a change in the probability of an outflow occurs so that outflow is probable, it will then be recognised as a provision.

A contingent asset is a possible asset that arises from past events and whose existence will only be confirmed by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group.

Contingent assets are not recognised but are disclosed in the notes to the financial statements when an inflow of economic benefits is probable. When the inflow is virtually certain, it will be recognised as an asset.

2.28 Related parties

For the purposes of these financial statements, a party is considered to be related to the Group if that party (i) controls, jointly controls or has significant influence over the Group; (ii) is a member of the same financial reporting group, such as parents, subsidiaries and fellow subsidiaries; (iii) is an associate or a joint venture of the Group or parent reporting group; (iv) is a key management personnel of the Group or parents; (v) is subject to common control with the Group; (vi) is an entity in which a person identified in (iv) controls; and (vii) provides key management personnel services to the Group or its parent. Related parties may be individuals or entities.

3. Critical accounting estimates and judgements in applying accounting policies

The Group makes estimates and assumptions that affect the carrying amounts of assets and liabilities within the next reporting period. Estimates and judgements are continually evaluated and based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Areas susceptible to changes in essential estimates and judgements, which affect the carrying amount of assets and liabilities, are set out below. The effects of changes to either the key assumptions or other estimation uncertainties are presented below if it is practicable to determine. It is possible that actual results may require material adjustments to the estimates referred to below.

3.1 Impairment of financial assets

The Group reviews its credit portfolios to assess impairment at least on a quarterly basis. Under HKFRS 9, the measurement of impairment losses across all categories of financial asset requires judgement, in particular, the estimation of the amount and timing of future cash flows and collateral values when determining impairment losses and the assessment of a significant increase in credit risk. These estimates are driven by a number of factors, changes of which can result in different levels of allowances.

The Group's ECL calculations are outputs of complex models. The choice of variable inputs and their interdependencies involves a series of assumptions. ECL models are developed by leveraging on the parameters implemented under Basel II Internal Ratings-Based ("IRB") models and internal models, where feasible and available. Elements of the ECL models that are considered accounting judgements and estimates include:

- The Group's internal credit rating models, which assign Probability of Defaults to the individual ratings. Please refer to CRE of section 7 of the Group's Regulatory Disclosures for 2020 for a description of the Group's internal models;

- The Group's significant credit deterioration criteria (including internal credit rating downgrade, days past due, drop in Mark-to-Market and qualitative assessment) for assessing whether the financial assets' impairment allowances should be measured on a lifetime ECL basis;

- The segmentation of financial assets according to credit risk characteristics (portfolios including Sovereign, Bank, Corporates, Retail Small Medium-sized Enterprise, Residential Mortgage Loan and Credit Card) when their ECLs are assessed on a collective basis;

- Development of ECL models, including the determination of macroeconomic factor forecasts (including Gross Domestic Product growth, Consumer Price Index, Property Price Index and Unemployment Rate) and the effect on Probability of Defaults, Loss Given Defaults and Exposure at Defaults; and

- Selection of forward-looking macroeconomic scenarios (including three independent scenarios i.e. good, baseline and bad) and their probability weightings.

It has been the Group's policy to regularly review its models in the context of actual loss experience and adjust when necessary.

Carrying amounts of loans and advances and investment in securities as at 31 December 2020 are shown in Notes 25 and 26 respectively.

3. Critical accounting estimates and judgements in applying accounting policies (continued)

3.2 Fair values of derivative financial instruments and other financial instruments

The fair values of derivative financial instruments and other financial instruments that are not quoted in active markets are determined by using valuation techniques. Valuation techniques used include the use of recent arm's length transactions, discounted cash flows analysis and models with built-in functions available in externally acquired financial analysis or risk management systems widely used by the industry such as option pricing models, and other commonly used market pricing models. To the extent practical, the models use observable data. In addition, valuation adjustments may be adopted if factors such as credit risk are not considered in the valuation models. Management judgement and estimates are required for the selection of appropriate valuation parameters, assumptions and modelling techniques.

The Group assesses assumptions and estimates used in valuation techniques including review of valuation model assumptions and characteristics, changes to model assumptions, the quality of market data, whether markets are active or inactive, other fair value adjustments not specifically captured by models and consistency of application of techniques between reporting periods as part of its normal review and approval processes. Valuation techniques are validated and periodically reviewed and, where appropriate, have been updated to reflect market conditions at the financial reporting date. Further details will be discussed in Note 5.

3.3 Estimate of future benefit payments and premiums arising from long term insurance contracts

In determining the Group's long-term business fund liabilities (a component of insurance contract liabilities), the Group follows the Insurance (Determination of Long-Term Liabilities) Rules and makes prudent assumptions which include appropriate margins for adverse deviation of the relevant factors. Estimates are made as to the expected number of deaths for each of the years in which the Group is exposed to risk. The Group bases these estimates on population statistics or reinsurance information, adjusted where appropriate to reflect the Group's own experience and relevant reinsurance arrangements. For contracts that insure the risk of longevity, appropriate prudent allowances are made for expected mortality improvements. The estimated number of deaths determines the value of the benefit payments and the value of the valuation premiums. The main source of uncertainty is that epidemics such as AIDS, SARS, avian flu and wide-ranging lifestyle changes, such as in eating, smoking and exercise habits, could result in future mortality being significantly worse than in the past for the age groups in which the Group has significant exposure to mortality risk. However, continuing improvements in medical care and social conditions could result in improvements in longevity in excess of those allowed for in the estimates used to determine the liability for contracts where the Group is exposed to longevity risk.

Were the number of deaths and morbidity in future years to differ by 10% (2019: 10%) from the Management's estimate, the long-term business fund liability would increase by approximately HK$264 million (2019: approximately HK$197 million), which accounts for 0.29% (2019: 0.26%) of the liability. In this case, it is assumed there is no relief arising from reinsurance contracts held.

For linked long term insurance contracts with a life cover component, it is assumed that the Group will be able to increase mortality risk charges in future years in line with emerging mortality experience.

3. Critical accounting estimates and judgements in applying accounting policies (continued)

3.3 Estimate of future benefit payments and premiums arising from long term insurance contracts (continued)

Estimates are also made as to future investment income arising from the assets backing long term insurance contracts. These estimates are based on current market returns as well as expectations about future economic and financial developments. Were the average future investment returns to decrease by 50 basis points (2019: 50 basis points) from the Management's estimates, the long-term business fund liability would increase by approximately HK$1,316 million (2019: approximately HK$1,668 million). In this case, it is assumed there is no relief arising from reinsurance contracts held.

The Group has also assessed whether a provision for expense is necessary in accordance with the Insurance Ordinance. A provision for expense is the amount required to meet the total net cost that would likely be incurred in fulfilling contracts if the Group were to cease to transact new business 12 months after the valuation date. As at 31 December 2020, no provision for maintenance expenses was provided (2019: Nil).

A resilience reserve was set up and included in long term business fund liabilities in accordance with the Insurance (Determination of Long-Term Liabilities) Rules to provide a prudent provision against the effects of possible future changes to the value of the assets to meet the liabilities. The resilience reserve was set up based on the appointed actuary's advice of a 12 basis points (2019: 26 basis points) change in market yield of the underlying assets and valuation interest rates. The amount of resilience reserve set up depends on the degree of change in interest rate assumed.

3.4 Deferred tax assets

Deferred tax assets on unused tax losses and unused tax credits are recognised and the determination of the amount to be recognised requires significant management judgement. Deferred tax asset on unused tax losses are recognised to the extent that it is probable that taxable profit will be available against which the losses can be utilised. Judgement is required to determine the amount of deferred tax assets that can be recognised, based upon the likely timing and level of future taxable profits. For deferred tax assets on unused tax credits, judgement is required to determine the amount of deferred tax assets that can be recognised, based upon the estimation of available tax credits and the possibility to recover such deferred tax assets recognised.

3.5 Determination of lease terms of leases

The Group determines the lease term as the non-cancellable term of the lease, together with any periods covered by an option to extend the lease if it is reasonably certain to be exercised, or any periods covered by an option to terminate the lease, if it is reasonably certain not to be exercised.

The Group has the option, under some of its leases, to renew the leases for additional terms of three to nine years. The Group applies judgement in evaluating whether it is reasonably certain to exercise the option on the lease commencement date. During the evaluation, the Group considers all relevant factors that create an economic incentive for it to exercise the renewal option. After the commencement date, the Group reassesses the lease term if there is a significant event or change in circumstances that is within its control and affects its ability to exercise (or not to exercise) the option to renew (e.g. a change in business strategy).

Carrying amounts of right-of-use assets as at 31 December 2020 are shown in Note 29.

4. Financial risk management

The Group is exposed to financial risks as a result of engaging in a variety of business activities. The principal financial risks are credit risk, market risk (including currency risk and interest rate risk) and liquidity risk. This note summarises the Group's exposures to these risks, as well as its objectives, risk management governance structure, policies and processes for managing and the methods used to measure these risks.

Financial risk management framework

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

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

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

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

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

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

4. Financial risk management (continued)

Financial risk management framework (continued)

The Group has put in place appropriate internal control systems, including the establishment of an organisation structure that sets clear lines of authority and responsibility for monitoring compliance with policies, procedures and limits. Proper reporting lines also provide sufficient independence of the control functions from the business areas, as well as adequate segregation of duties throughout the organisation which helps to promote an appropriate internal control environment.

Product development and risk monitoring

To ensure the effectiveness of risk assessment and monitoring, the Group has a comprehensive product development and risk monitoring system where roles and responsibilities of all related units are clearly defined and proper due diligence processes on product development are in place.

In accordance with the strategic objectives set by the Board and the Management, respective product management units are responsible for formulating business and product development plans, and proceeding to specific product development activities. The department of strategic development shall ensure the plans are aligned with the Group's overall strategies. Departments that are responsible for risk management, legal, compliance and finance, etc. are accountable for review of the risk assessment results.

Apart from product development, respective product management units shall work closely with relevant risk evaluating departments to identify and assess the risks of new products. Risk evaluating departments shall conduct independent review on the risk assessment results and the corresponding risk management measures. Products can only be launched upon completion of the product due diligence process to the satisfaction of all risk evaluating departments.

A prudent approach is adopted in offering treasury products to our clients. All new treasury products require approval from a special committee before launching.

4.1 Credit risk

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.

Credit risk management framework

The Group has formulated a comprehensive set of credit risk management policies and procedures, and appropriate credit risk limits to manage and control credit risk that may arise. These policies, procedures and credit risk limits are regularly reviewed and updated to cope with changes in market conditions and business strategies.

The Group's organisation structure establishes a clear set of authority and responsibility for monitoring compliance with policies, procedures and limits.

4. Financial risk management (continued)

4.1 Credit risk (continued)

Credit risk management framework (continued)

The Chief Credit Officer, who reports directly to the CRO, takes charge of credit risk management and is also responsible for the control of credit risk exposures of subsidiaries in line with the credit risk management principles and requirements set by the Group. Various units of the Group have their respective credit risk management responsibilities. Business units act as the first line of defence in risk management. The Risk Management Department ("RMD"), which is independent from the business units, is responsible for the day-to-day management of credit risks and provides an independent due diligence through identifying, measuring, monitoring and controlling credit risk to ensure an effective checks and balances, as well as drafting, reviewing and updating credit risk management policies and procedures. It is also responsible for the design, development and maintenance of the Group's internal rating system and ensures the system complies with the relevant regulatory requirements. Back offices are responsible for credit administration, providing operations support and supervision on the implementation of prerequisite terms and conditions of credit facilities.

In accordance with the Group's operating principle, the Group's principal subsidiaries have to formulate their own credit risk policies that are consistent with those of the Group's core principle. These subsidiaries are required to submit their risk management reports to the Group's Management on a regular basis.

The Board of Directors delegates credit approval authority to the CE. The CE can further delegate to the subordinates within his limit authorised by the Board of Directors. The Group sets the limits of credit approval authority according to the credit business nature, rating, the level of transaction risk, and the extent of the credit exposure.

Credit risk measurement and control

In view of the rapidly changing market conditions, the Group has been continuously revisiting its credit strategies and conducting rigorous reviews on the concerned portfolios.

Advances

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

The Group also uses loan grades, obligor ratings and loss estimates (if applicable) to support credit monitoring, reporting and analysis of credit risk information. For non-retail exposures, more frequent rating review and closer monitoring are required for higher-risk customers. For retail exposures, monthly updated internal ratings and loss estimates are used for credit monitoring on a portfolio basis. More comprehensive review is required for obligors being identified under high-risk pools.

4. Financial risk management (continued)

4.1 Credit risk (continued)

Credit risk measurement and control (continued)

Advances (continued)

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

RMD provides regular credit management information reports and ad hoc reports to the MC, RMC and Board of Directors to facilitate their continuous monitoring of credit risk.

In addition, the Group identifies credit concentration risk by industry, geography, customer or counterparty. The Group monitors changes to every counterparties credit risk, quality of the credit portfolio and credit risk concentrations, and reports regularly to the Group's Management.

The Group adopts loan grading criteria which divide credit assets into five categories with reference to the HKMA's guidelines, as below:

"Pass" represents loans where the borrower is current in meeting its repayment obligations and full repayment of interest and principal is not in doubt.

"Special Mention" represents loans where the borrower is experiencing difficulties which may threaten the Group's recoverability of the loan principal and interest. Ultimate loss is not expected at this stage but could occur if adverse conditions persist.

"Substandard" represents loans where the borrower displays a definable weakness that is likely to jeopardise repayment.

"Doubtful" represents loans where collection in full is improbable and the Group expects to sustain a loss of principal and/or interest, taking into account the net realisable value of the collateral.

"Loss" represents loans which are considered uncollectible after all collection options (such as the realisation of collateral or the institution of legal proceedings) have been exhausted.

Debt securities and derivatives

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

Settlement risk arises mainly from foreign exchange transactions with counterparties and also from derivative transactions in any situation where a payment in cash, securities or equities is made in the expectation of a corresponding receipt in cash, securities or equities. Daily settlement limits are established for each counterparty or customer to cover all settlement risks arising from the Group's market transactions on any single day.

4. Financial risk management (continued)

4.1 Credit risk (continued)

Expected Credit Loss ("ECL") Methodology

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

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

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

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

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

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

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

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

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

4. Financial risk management (continued)

4.1 Credit risk (continued)

Expected Credit Loss ("ECL") Methodology (continued)

The probability assigned for each scenario reflects the Group's view for the economic environment, which implements the Group's prudent and consistent credit strategy of ensuring the adequacy of impairment allowance. A higher probability is assigned to the Baseline scenario to reflect the most likely outcome and a lower probability is assigned to the Good and Bad scenarios to reflect the less likely outcomes. As of December of 2020, the probability weight of the Group's Baseline scenario is higher than the sum of probability weight of Good and Bad scenarios.

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

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

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

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

Collateral held as security and other credit enhancements

The valuation and management of collateral have been documented in the credit risk management policies and procedures which cover acceptance criteria, validity of collateral, loan-to-value ratio, haircut ratio, valuation and insurance, etc. The collateral is revalued on a regular basis, though the frequency and the method used varies with the type of collateral involved and the nature and the risk of the underlying credit. The Group has established a mechanism to update the value of its main type of collateral, property collateral including the use of public indices on a portfolio basis. Collateral is insured with the Group as the primary beneficiary. In the personal sector, the main types of collateral are real estate, cash deposits and securities. In the commercial and industrial sector, the types of collateral include real estate, securities, cash deposits, vessels, etc.

For loans guaranteed by a third party, the Group will assess the guarantor's financial condition, credit history and ability to meet obligations.

As at 31 December 2020, the fair value of collateral held by the Group that was permitted to sell or re-pledge in the absence of default by the borrower amounted to HK$5,168 million (2019: HK$6,335 million). The Group had not sold or re-pledged such collateral (2019: Nil). These transactions are conducted under terms that are usual and customary to reverse repurchase and securities borrowing agreements.

4. Financial risk management (continued)

4.1 Credit risk (continued)

(A) Credit exposures

The maximum credit exposure is the worst case scenario of exposure to the Group without taking into account any collateral held or other credit enhancements. For on-balance sheet assets, the maximum exposure to credit risk equals their carrying amount. For letters of guarantee issued, the maximum exposure to credit risk is the maximum amount that the Group could be required to pay if the guarantees are called upon. For loan commitment and other credit related liabilities, the maximum exposure to credit risk is the full amount of the committed facilities.

The nature of the collateral held and other credit enhancements and their financial effect to the different classes of the Group's financial assets are as follows.

Balances and placements with banks and other financial institutions

These exposures are generally considered to be low risk due to the nature of the counterparties. Collateral is generally not sought on these assets.

Financial assets at fair value through profit or loss and investment in securities

Collateral is generally not sought on debt securities.

Derivative financial instruments

The Master Agreement published by the International Swaps and Derivatives Association, Inc. ("ISDA Master Agreement") is the preferred agreement for documenting derivative activities of the Group. It provides the contractual framework under which dealing activities of over-the-counter ("OTC") transactions are conducted, and sets out close-out netting provisions upon termination following the occurrence of an event of default or a termination event. In addition, if deemed necessary, Credit Support Annex ("CSA") will be included to form part of the Schedule to the ISDA Master Agreement. Under a CSA, collateral is passed from one counterparty to another, as appropriate, to mitigate the credit exposures.

Advances and other accounts, contingent liabilities and commitments

The general types of collateral are disclosed on page 172. Advances and other accounts, contingent liabilities and commitments are collateralised to the extent considered appropriate by the Group taking account of the risk assessment of individual exposures. The collateral coverage of advances to customers is analysed on pages 182 to 183. The components and nature of contingent liabilities and commitments are disclosed in Note 42. Regarding the commitments that are unconditionally cancellable without prior notice, the Group would assess the necessity to withdraw the credit line in case where the credit quality of a borrower deteriorates. For contingent liabilities and commitments, 13.25% (2019: 14.20%) were covered by collateral as at 31 December 2020.

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts

Gross advances and other accounts before impairment allowances are summarised by product type as follows:

	2020 HK$'m	2019 HK$'m
Advances to customers		
Personal		
– Mortgages	**340,587**	298,914
– Credit cards	**10,981**	14,688
– Others	**107,009**	102,272
Corporate		
– Commercial loans	**972,790**	904,245
– Trade finance	**66,497**	75,764
	1,497,864	1,395,883
Trade bills	**9,826**	20,727
Advances to banks and other financial institutions	**1,898**	3,387
	1,509,588	1,419,997

Advances with a specific repayment date are classified as overdue when the principal or interest is past due and remains unpaid. Advances repayable by regular instalments are classified as overdue when an instalment payment is past due and remains unpaid. Advances repayable on demand are classified as overdue either when a demand for repayment has been served on the borrower but repayment has not been made in accordance with the instruction or when the advances have remained continuously to exceed the approved limit that was advised to the borrower.

Advances are default when one or more events that have a detrimental impact on the estimated future cash flows have occurred such as past due for more than 90 days or the borrower is unlikely to pay in full for the credit obligations to the Group. Credit-impaired advances are classified as Stage 3 and lifetime expected credit losses will be recognised.

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

Evidence that an advance is credit-impaired include observable data about the following events:

– Significant financial difficulty incurred by the borrower;

– A breach of contract, such as a default or delinquency in principal or interest payment;

– For economic or legal reasons related to the borrower's financial difficulty, the Group has granted to the borrower a concession that it would not otherwise consider;

– Probable that the borrower will become bankrupt or undergo other financial reorganisation; or

– Other observable data indicating that there is a measurable decrease in the estimated future cash flows from such advances.

Advances classified as Stage 3 may not necessarily result in impairment loss where the advances are fully collateralised.

Gross advances and other accounts before impairment allowances are analysed by internal credit grade and stage classification as follows:

	2020			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Advances to customers				
Pass	1,466,646	20,352	–	1,486,998
Special mention	3,846	3,026	–	6,872
Substandard or below	–	–	3,994	3,994
	1,470,492	23,378	3,994	1,497,864
Trade bills				
Pass	9,826	–	–	9,826
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	9,826	–	–	9,826
Advances to banks and other financial institutions				
Pass	1,898	–	–	1,898
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	1,898	–	–	1,898
	1,482,216	23,378	3,994	1,509,588
Impairment allowances	(5,405)	(1,115)	(2,652)	(9,172)
	1,476,811	22,263	1,342	1,500,416

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Advances to customers				
Pass	1,385,770	1,592	–	1,387,362
Special mention	2,683	2,621	–	5,304
Substandard or below	–	–	3,217	3,217
	1,388,453	4,213	3,217	1,395,883
Trade bills				
Pass	20,727	–	–	20,727
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	20,727	–	–	20,727
Advances to banks and other financial institutions				
Pass	3,387	–	–	3,387
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	3,387	–	–	3,387
	1,412,567	4,213	3,217	1,419,997
Impairment allowances	(4,564)	(297)	(2,175)	(7,036)
	1,408,003	3,916	1,042	1,412,961

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

Reconciliation of impairment allowances and gross amount for advances and other accounts is as follows:

	2020			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Impairment allowances				
At 1 January 2020	4,564	297	2,175	7,036
Transfer to Stage 1	96	(94)	(2)	–
Transfer to Stage 2	(166)	177	(11)	–
Transfer to Stage 3	(8)	(19)	27	–
Changes arising from transfer of stage	(76)	782	772	1,478
Charge for the year	2,894	104	300	3,298
Reversal for the year	(1,920)	(132)	(235)	(2,287)
Write-offs	–	–	(561)	(561)
Recoveries	–	–	136	136
Exchange difference and others	21	–	51	72
At 31 December 2020	5,405	1,115	2,652	9,172
Charged to income statement (Note 13)				2,489

	2020			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Gross amount				
At 1 January 2020	1,412,567	4,213	3,217	1,419,997
Transfer to Stage 1	1,207	(1,197)	(10)	–
Transfer to Stage 2	(22,369)	22,384	(15)	–
Transfer to Stage 3	(804)	(403)	1,207	–
Net change in exposures	87,260	(1,628)	62	85,694
Write-offs	–	–	(561)	(561)
Exchange difference and others	4,355	9	94	4,458
At 31 December 2020	1,482,216	23,378	3,994	1,509,588

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Impairment allowances				
At 1 January 2019	3,748	546	1,130	5,424
Transfer to Stage 1	154	(143)	(11)	–
Transfer to Stage 2	(26)	103	(77)	–
Transfer to Stage 3	(15)	(184)	199	–
Changes arising from transfer of stage	(131)	84	1,216	1,169
Charge for the year	2,368	50	342	2,760
Reversal for the year	(1,536)	(155)	(386)	(2,077)
Write-offs	–	–	(462)	(462)
Recoveries	–	–	213	213
Exchange difference and others	2	(4)	11	9
At 31 December 2019	4,564	297	2,175	7,036
Charged to income statement (Note 13)				1,852

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Gross amount				
At 1 January 2019	1,277,879	8,152	2,387	1,288,418
Transfer to Stage 1	3,103	(2,614)	(489)	–
Transfer to Stage 2	(1,783)	1,927	(144)	–
Transfer to Stage 3	(1,048)	(729)	1,777	–
Net change in exposures	134,837	(2,507)	140	132,470
Write-offs	–	–	(462)	(462)
Exchange difference and others	(421)	(16)	8	(429)
At 31 December 2019	1,412,567	4,213	3,217	1,419,997

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

(a) Impaired advances

Impaired advances to customers are analysed as follows:

	2020		2019	
	Impaired HK$'m	Classified or impaired HK$'m	Impaired HK$'m	Classified or impaired HK$'m
Gross advances to customers	**3,994**	**3,994**	3,217	3,217
Percentage of gross advances to customers	**0.27%**	**0.27%**	0.23%	0.23%
Impairment allowances made in respect of such advances	**2,652**	**2,652**	2,175	2,175

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.

The impairment allowances were made after taking into account the value of collateral in respect of the credit-impaired advances.

	2020 HK$'m	2019 HK$'m
Current market value of collateral held against the covered portion of impaired advances to customers	**3,046**	2,187
Covered portion of impaired advances to customers	**1,558**	1,011
Uncovered portion of impaired advances to customers	**2,436**	2,206

As at 31 December 2020, there were no impaired trade bills and advances to banks and other financial institutions (2019: Nil).

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

(b) Advances overdue for more than three months

The gross amount of advances overdue for more than three months is analysed as follows:

	2020		2019	
	Amount HK$'m	**% of gross advances to customers**	Amount HK$'m	% of gross advances to customers
Gross advances to customers which have been overdue for:				
– six months or less but over three months	**174**	**0.01%**	145	0.01%
– one year or less but over six months	**718**	**0.05%**	836	0.06%
– over one year	**2,137**	**0.14%**	948	0.07%
Advances overdue for over three months	**3,029**	**0.20%**	1,929	0.14%
Impairment allowances made in respect of such advances – Stage 3	**2,332**		1,651	

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

(b) Advances overdue for more than three months (continued)

	2020 HK$'m	2019 HK$'m
Current market value of collateral held against the covered portion of such advances to customers	**1,312**	487
Covered portion of such advances to customers	**913**	315
Uncovered portion of such advances to customers	**2,116**	1,614

Collateral held against overdue or impaired loans is principally represented by charges over business assets such as commercial, residential premises and vessels for corporate loans and mortgages over residential properties for personal loans.

As at 31 December 2020, there were no trade bills and advances to banks and other financial institutions overdue for more than three months (2019: Nil).

(c) Rescheduled advances

	2020		2019	
	Amount HK$'m	% of gross advances to customers	Amount HK$'m	% of gross advances to customers
Rescheduled advances to customers net of amounts included in "Advances overdue for more than three months"	**178**	**0.01%**	239	0.02%

Rescheduled advances are those advances that have been restructured and renegotiated between the bank and borrowers because of deterioration in the financial position of the borrower or the inability of the borrower to meet the original repayment schedule, and the revised repayment terms, either of interest or the repayment period, are "non-commercial" to the Group. Rescheduled advances, which have been overdue for more than three months under the revised repayment terms, are included in "Advances overdue for more than three months".

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

(d) Concentration of advances to customers

(i) Sectoral analysis of gross advances to customers

The following analysis of the gross advances to customers by industry sector is based on the categories with reference to the completion instructions for the HKMA return of loans and advances.

	2020					
	Gross advances to customers HK$'m	% covered by collateral or other security	Classified or impaired HK$'m	Overdue HK$'m	Impairment allowances – Stage 3 HK$'m	Impairment allowances – Stages 1 and 2 HK$'m
Loans for use in Hong Kong						
Industrial, commercial and financial						
– Property development	132,966	27.12%	–	1	–	803
– Property investment	64,768	67.95%	111	184	15	186
– Financial concerns	24,110	0.74%	–	–	–	54
– Stockbrokers	1,656	78.86%	–	–	–	3
– Wholesale and retail trade	30,523	43.12%	198	239	109	411
– Manufacturing	53,629	8.05%	8	9	4	290
– Transport and transport equipment	74,633	23.05%	260	–	–	598
– Recreational activities	198	9.90%	–	–	–	2
– Information technology	25,579	0.81%	97	99	13	33
– Others	131,571	47.23%	18	200	4	409
Individuals						
– Loans for the purchase of flats in Home Ownership Scheme, Private Sector Participation Scheme and Tenants Purchase Scheme	27,809	99.33%	18	183	–	17
– Loans for purchase of other residential properties	311,070	99.92%	140	1,332	1	137
– Credit card advances	10,959	–	106	366	95	151
– Others	101,986	94.43%	126	537	81	384
Total loans for use in Hong Kong	991,457	61.86%	1,082	3,150	322	3,478
Trade financing	66,497	15.36%	569	573	372	202
Loans for use outside Hong Kong	439,910	5.29%	2,343	2,217	1,958	2,840
Gross advances to customers	1,497,864	43.18%	3,994	5,940	2,652	6,520

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

(d) Concentration of advances to customers (continued)

(i) Sectoral analysis of gross advances to customers (continued)

	2019					
	Gross advances to customers HK$'m	% covered by collateral or other security	Classified or impaired HK$'m	Overdue HK$'m	Impairment allowances – Stage 3 HK$'m	Impairment allowances – Stages 1 and 2 HK$'m
Loans for use in Hong Kong						
Industrial, commercial and financial						
– Property development	137,663	21.53%	–	9	–	695
– Property investment	49,073	81.98%	–	158	–	62
– Financial concerns	28,353	0.89%	–	–	–	53
– Stockbrokers	815	98.27%	–	–	–	1
– Wholesale and retail trade	39,880	36.86%	88	283	87	210
– Manufacturing	42,719	12.98%	193	222	95	174
– Transport and transport equipment	66,511	27.29%	325	69	–	180
– Recreational activities	2,161	1.19%	–	–	–	3
– Information technology	22,464	0.90%	–	48	–	76
– Others	125,909	47.30%	6	138	4	365
Individuals						
– Loans for the purchase of flats in Home Ownership Scheme, Private Sector Participation Scheme and Tenants Purchase Scheme	19,855	99.68%	18	161	–	10
– Loans for purchase of other residential properties	277,288	99.93%	96	1,374	–	97
– Credit card advances	14,663	–	127	579	113	159
– Others	97,380	91.08%	71	504	63	358
Total loans for use in Hong Kong	924,734	59.98%	924	3,545	362	2,443
Trade financing	75,764	14.75%	318	340	237	154
Loans for use outside Hong Kong	395,385	6.74%	1,975	1,988	1,576	2,263
Gross advances to customers	1,395,883	42.45%	3,217	5,873	2,175	4,860

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

(d) Concentration of advances to customers (continued)

(i) Sectoral analysis of gross advances to customers (continued)

For those industry sectors constitute not less than 10% of the Group's gross advances to customers, the amounts of new impairment allowances charged to the income statement, and classified or impaired loans written off during the year are shown below:

	2020		2019	
	New impairment allowances HK$'m	**Classified or impaired loans written off HK$'m**	New impairment allowances HK$'m	Classified or impaired loans written off HK$'m
Loans for use in Hong Kong				
Individuals				
– Loans for purchase of other residential properties	**52**	**–**	50	–

(ii) Geographical analysis of gross advances to customers

The following geographical analysis of advances to customers is based on the locations of the counterparties, after taking into account the transfer of risk. For an advance to customer guaranteed by a party situated in a location different from the customer, the risk will be transferred to the location of the guarantor.

Gross advances to customers

	2020 HK$'m	2019 HK$'m
Hong Kong	**1,218,633**	1,124,812
Chinese Mainland	**112,527**	126,075
Others	**166,704**	144,996
	1,497,864	1,395,883
Impairment allowances made in respect of the gross advances to customers – Stages 1 and 2		
Hong Kong	**4,551**	3,228
Chinese Mainland	**656**	492
Others	**1,313**	1,140
	6,520	4,860

4. Financial risk management (continued)

4.1 Credit risk (continued)

(B) Advances and other accounts (continued)

(d) Concentration of advances to customers (continued)

(ii) Geographical analysis of gross advances to customers (continued)

Overdue advances

	2020 HK$'m	2019 HK$'m
Hong Kong	**4,115**	4,341
Chinese Mainland	**567**	607
Others	**1,258**	925
	5,940	5,873
Impairment allowances made in respect of the overdue advances – Stage 3		
Hong Kong	**1,308**	975
Chinese Mainland	**320**	423
Others	**908**	489
	2,536	1,887

Classified or impaired advances

	2020 HK$'m	2019 HK$'m
Hong Kong	**2,194**	1,766
Chinese Mainland	**404**	507
Others	**1,396**	944
	3,994	3,217
Impairment allowances made in respect of the classified or impaired advances – Stage 3		
Hong Kong	**1,410**	1,132
Chinese Mainland	**331**	436
Others	**911**	607
	2,652	2,175

4. Financial risk management (continued)

4.1 Credit risk (continued)

(C) Repossessed assets

During the year, the Group obtained assets by taking possession of collateral held as security. The nature and carrying value of these assets held as at 31 December are summarised as follows:

	2020 HK$'m	2019 HK$'m
Industrial properties	**5**	–
Residential properties	**18**	7
	23	7

The estimated market value of repossessed assets held by the Group as at 31 December 2020 amounted to HK$67 million (2019: HK$33 million). The repossessed assets comprise properties in respect of which the Group has acquired access or control (e.g. through court proceedings or voluntary actions by the proprietors concerned) for release in full or in part of the obligations of the borrowers.

When the repossessed assets are not readily convertible into cash, the Group may consider the following alternatives:

- adjusting the selling prices
- selling the loans together with the assets
- arranging loan restructuring

4. Financial risk management (continued)

4.1 Credit risk (continued)

(D) Balances and placements with banks and other financial institutions

Balances and placements with banks and other financial institutions before impairment allowances are analysed by internal credit grade and stage classification as follows:

	2020			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Central banks				
Pass	183,571	–	–	183,571
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	183,571	–	–	183,571
Other banks and other financial institutions				
Pass	241,961	–	–	241,961
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	241,961	–	–	241,961
	425,532	–	–	425,532
Impairment allowances	(8)	–	–	(8)
	425,524	–	–	425,524

4. Financial risk management (continued)

4.1 Credit risk (continued)

(D) Balances and placements with banks and other financial institutions (continued)

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Central banks				
Pass	163,019	–	–	163,019
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	163,019	–	–	163,019
Other banks and other financial institutions				
Pass	184,785	–	–	184,785
Special mention	–	–	–	–
Substandard or below	–	–	–	–
	184,785	–	–	184,785
	347,804	–	–	347,804
Impairment allowances	(3)	–	–	(3)
	347,801	–	–	347,801

4. Financial risk management (continued)

4.1 Credit risk (continued)

(D) Balances and placements with banks and other financial institutions (continued)

Reconciliation of impairment allowances for balances and placements with banks and other financial institutions is as follows:

	2020			
	Stage 1 HK$'m	**Stage 2 HK$'m**	**Stage 3 HK$'m**	**Total HK$'m**
At 1 January 2020	**3**	**–**	**–**	**3**
Changes arising from transfer of stage	**–**	**–**	**–**	**–**
Net charge for the year	**5**	**–**	**–**	**5**
Exchange difference and others	**–**	**–**	**–**	**–**
At 31 December 2020	**8**	**–**	**–**	**8**
Charged to income statement (Note 13)				**5**

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
At 1 January 2019	15	–	–	15
Changes arising from transfer of stage	–	–	–	–
Net reversal for the year	(12)	–	–	(12)
Exchange difference and others	–	–	–	–
At 31 December 2019	3	–	–	3
Credited to income statement (Note 13)				(12)

As at 31 December 2020, there were no overdue or impaired balances and placements with banks and other financial institutions (2019: Nil).

4. Financial risk management (continued)

4.1 Credit risk (continued)

(E) Debt securities and certificates of deposit

The following tables present an analysis of the carrying value of debt securities and certificates of deposit by issue rating and stage classification. In the absence of such issue ratings, the ratings designated for the issuers are reported.

	2020 HK$'m	2019 HK$'m
Investment in securities at fair value through other comprehensive income		
– Stage 1		
Aaa	**115,426**	105,381
Aa1 to Aa3	**153,601**	171,367
A1 to A3	**438,994**	358,381
Lower than A3	**26,555**	24,952
Unrated	**19,596**	24,621
	754,172	684,702
– Stage 2	**–**	–
– Stage 3	**–**	–
	754,172	684,702
Of which: impairment allowances	**(261)**	(160)
Investment in securities at amortised cost		
– Stage 1		
Aaa	**43,082**	57,569
Aa1 to Aa3	**6,730**	4,687
A1 to A3	**39,864**	26,263
Lower than A3	**23,923**	15,956
Unrated	**6,894**	6,554
	120,493	111,029
– Stage 2	**–**	–
– Stage 3	**–**	–
	120,493	111,029
Impairment allowances	**(62)**	(46)
	120,431	110,983
Financial assets at fair value through profit or loss		
Aaa	**1,095**	3,030
Aa1 to Aa3	**22,573**	28,350
A1 to A3	**8,412**	18,779
Lower than A3	**9,846**	11,834
Unrated	**2,070**	6,111
	43,996	68,104

4. Financial risk management (continued)

4.1 Credit risk (continued)

(E) Debt securities and certificates of deposit (continued)

Reconciliation of impairment allowances for debt securities and certificates of deposit is as follows:

	2020			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Investment in securities at fair value through other comprehensive income				
At 1 January 2020	160	–	–	160
Changes arising from transfer of stage	–	–	–	–
Net charge for the year	100	–	–	100
Exchange difference and others	1	–	–	1
At 31 December 2020	261	–	–	261
Charged to income statement (Note 13)				100
Investment in securities at amortised cost				
At 1 January 2020	46	–	–	46
Changes arising from transfer of stage	–	–	–	–
Net charge for the year	16	–	–	16
At 31 December 2020	62	–	–	62
Charged to income statement (Note 13)				16

4. Financial risk management (continued)

4.1 Credit risk (continued)

(E) Debt securities and certificates of deposit (continued)

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Investment in securities at fair value through other comprehensive income				
At 1 January 2019	140	–	–	140
Changes arising from transfer of stage	–	–	–	–
Net charge for the year	20	–	–	20
Exchange difference and others	–	–	–	–
At 31 December 2019	160	–	–	160
Charged to income statement (Note 13)				20
Investment in securities at amortised cost				
At 1 January 2019	29	–	–	29
Changes arising from transfer of stage	–	–	–	–
Net charge for the year	17	–	–	17
At 31 December 2019	46	–	–	46
Charged to income statement (Note 13)				17

As at 31 December 2020, there were no overdue or impaired debt securities and certificates of deposit (2019: Nil).

4. Financial risk management (continued)

4.1 Credit risk (continued)

(F) Loan commitments and financial guarantee contracts

Loan commitments and financial guarantee contracts are analysed by internal credit grade and stage classification as follows:

	2020			
	Stage 1 HK$'m	**Stage 2 HK$'m**	**Stage 3 HK$'m**	**Total HK$'m**
Loan commitments and financial guarantee contracts				
Pass	**760,490**	**3,007**	**–**	**763,497**
Special mention	**1,640**	**1,225**	**–**	**2,865**
Substandard or below	**–**	**–**	**36**	**36**
	762,130	**4,232**	**36**	**766,398**

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
Loan commitments and financial guarantee contracts				
Pass	680,769	477	–	681,246
Special mention	1,769	749	–	2,518
Substandard or below	–	–	38	38
	682,538	1,226	38	683,802

4. Financial risk management (continued)

4.1 Credit risk (continued)

(F) Loan commitments and financial guarantee contracts (continued)

Reconciliation of impairment allowances for loan commitments and financial guarantee contracts is as follows:

	2020			
	Stage 1 HK$'m	**Stage 2 HK$'m**	**Stage 3 HK$'m**	**Total HK$'m**
At 1 January 2020	**535**	**22**	**20**	**577**
Transfer to Stage 1	**13**	**(13)**	**–**	**–**
Transfer to Stage 2	**(3)**	**3**	**–**	**–**
Transfer to Stage 3	**–**	**–**	**–**	**–**
Changes arising from transfer of stage	**(12)**	**35**	**–**	**23**
Net charge/(reversal) for the year	**57**	**(3)**	**–**	**54**
Exchange difference and others	**4**	**–**	**–**	**4**
At 31 December 2020	**594**	**44**	**20**	**658**
Charged to income statement (Note 13)				**77**

	2019			
	Stage 1 HK$'m	Stage 2 HK$'m	Stage 3 HK$'m	Total HK$'m
At 1 January 2019	375	20	43	438
Transfer to Stage 1	14	(13)	(1)	–
Transfer to Stage 2	(2)	2	–	–
Transfer to Stage 3	–	–	–	–
Changes arising from transfer of stage	(12)	11	–	(1)
Net charge/(reversal) for the year	161	1	(25)	137
Exchange difference and others	(1)	1	3	3
At 31 December 2019	535	22	20	577
Charged to income statement (Note 13)				136

4. Financial risk management (continued)

4.1 Credit risk (continued)

(G) Credit risk management in response to COVID-19 pandemic

The prolonged COVID-19 pandemic has caused significant adverse impact to the global economy during 2020. While the pandemic remains volatile, the operating and financial situations of borrowers will continue to suffer from pressure. The Group has taken a series of risk control measures in response to the adverse impact and the uncertainty from the pandemic:

– The Group coordinated with the HKMA in launching various relief measures for individuals and commercial borrowers, in order to alleviate the financial pressure and the impact of the pandemic. The underwriting standards of the loans under relief measures are consistent with other credits and the repayment terms are revised on commercial basis. Therefore, loans under relief measures do not automatically trigger the migration to Stage 2 and Stage 3, and are not classified as rescheduled advances.

– As the implementation of quarantine measures, several industries are severely hit, including Trading, Retail, Aviation, Tourism (including hospitality), Catering, Entertainment etc. The Group has conducted risk-based assessments on the borrowers within these industries. The impacts of the pandemic on the affected borrowers, their respective mitigation measures and short-term refinancing plans were also assessed, vulnerable borrowers were identified and put into the watchlist for on-going close monitoring. The loan classification and internal ratings of these borrowers were reviewed according to their latest situation.

– The Group performed stress tests of different scenarios of containment of COVID-19 pandemic regularly to assess the potential impacts on credit loss and asset quality.

– The Group reviewed and updated the forward looking macroeconomic factors used in ECL computation to reflect the uncertain economic outlook due to impact of COVID-19 pandemic. In addition, the Group performed internal rating review of major borrowers being put into watchlist due to COVID-19 pandemic impacts, resulting in downgrades of those affected borrowers hence leading to additional Stage 1 and Stage 2 impairment allowance to withstand the uncertainty of future economic conditions.

The Group will closely monitor the situation brought by the COVID-19 pandemic on the economy and will continue to adopt prudent asset quality management for avoiding significant deterioration in asset quality.

4. Financial risk management (continued)

4.2 Market risk

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

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

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

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

(A) VaR

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

4. Financial risk management (continued)

4.2 Market risk (continued)

(A) VaR (continued)

The following table sets out the VaR for all general market risk exposures[1] of the Group.

	Year	At 31 December HK$'m	Minimum for the year HK$'m	Maximum for the year HK$'m	Average for the year HK$'m
VaR for all market risk	**2020**	**27.4**	**17.5**	**50.1**	**31.1**
	2019	26.6	17.6	52.3	31.0
VaR for foreign exchange risk	**2020**	**27.8**	**6.5**	**30.8**	**21.1**
	2019	9.3	7.2	21.1	12.7
VaR for interest rate risk in the trading book	**2020**	**10.1**	**5.8**	**35.6**	**18.5**
	2019	25.3	9.8	41.6	21.3
VaR for equity risk in the trading book	**2020**	**0.8**	**0.3**	**2.9**	**1.0**
	2019	0.7	0.2	2.5	0.8
VaR for commodity risk	**2020**	**2.5**	**0.0**	**11.2**	**1.8**
	2019	1.7	0.2	43.7	16.1

Note:
1. Structural FX positions have been excluded.

Although there is a valuable guide to market risk, VaR should always be viewed in the context of its limitations. For example:

- the use of historical market data as a proxy for estimating future events may not encompass all potential events, particularly those which are extreme in nature;
- the use of a one-day holding period assumes that all positions can be liquidated or hedged in one day. This may not fully reflect the market risk arising at times of severe illiquidity, when a one-day holding period may be insufficient to liquidate or hedge all positions fully;
- the use of a 99% confidence level, by definition, does not take into account losses that might occur beyond this level of confidence; and
- VaR is calculated on the basis of exposures outstanding at the close of business and therefore does not necessarily reflect intra-day exposures.

The Group recognises these limitations by formulating stress test indicators and limits to assess and manage the market risk uncovered by VaR. The stress testing programme of the market risk includes sensitivity testing on changes in risk factors with various degrees of severity, as well as scenario analysis on historical events including the 1987 Equity Market Crash, 1994 Bond Market Crash, 1997 Asian Financial Crisis, 2001 9-11 event and 2008 Financial Tsunami, etc.

4. Financial risk management (continued)

4.2 Market risk (continued)

(B) Currency risk

The Group's assets and liabilities are denominated in major currencies, particularly HK Dollar, US Dollar and Renminbi. To ensure the currency risk exposure of the Group is kept to an acceptable level, risk limits (e.g. Position and VaR limit) are used to serve as a monitoring tool. Moreover, the Group seeks to minimise the gap between assets and liabilities in the same currency. Foreign exchange contracts (e.g. FX swaps) are usually used to manage FX risk associated with foreign currency-denominated assets and liabilities.

The following is a summary of the Group's major foreign currency exposures arising from trading, non-trading and structural positions and is prepared with reference to the completion instructions for the HKMA return of foreign currency position. The net options position is calculated based on the basis of delta-weighted positions of all foreign exchange options contracts.

	2020							
	Equivalent in million of HK$							
	US Dollars	**Pound Sterling**	**Japanese Yen**	**Euro**	**Renminbi**	**Australian Dollars**	**Other foreign currencies**	**Total foreign currencies**
Spot assets	**1,017,375**	**30,074**	**160,779**	**45,926**	**427,394**	**36,620**	**62,008**	**1,780,176**
Spot liabilities	**(877,494)**	**(25,986)**	**(8,006)**	**(27,974)**	**(412,245)**	**(30,815)**	**(60,400)**	**(1,442,920)**
Forward purchases	**617,715**	**23,737**	**18,050**	**39,254**	**365,271**	**15,063**	**54,352**	**1,133,442**
Forward sales	**(734,480)**	**(27,641)**	**(170,914)**	**(57,474)**	**(382,383)**	**(20,758)**	**(56,136)**	**(1,449,786)**
Net options position	**650**	**7**	**–**	**(2)**	**(406)**	**(1)**	**(1)**	**247**
Net long/(short) position	**23,766**	**191**	**(91)**	**(270)**	**(2,369)**	**109**	**(177)**	**21,159**

	2019							
	Equivalent in million of HK$							
	US Dollars	Pound Sterling	Japanese Yen	Euro	Renminbi	Australian Dollars	Other foreign currencies	Total foreign currencies
Spot assets	932,480	29,513	123,344	40,611	311,496	37,785	70,914	1,546,143
Spot liabilities	(841,543)	(17,530)	(13,099)	(25,326)	(301,348)	(24,821)	(67,572)	(1,291,239)
Forward purchases	987,326	21,177	35,349	49,566	529,913	20,718	50,290	1,694,339
Forward sales	(1,076,832)	(33,139)	(145,612)	(64,801)	(538,358)	(33,632)	(54,187)	(1,946,561)
Net options position	144	56	4	(86)	(293)	(15)	(24)	(214)
Net long/(short) position	1,575	77	(14)	(36)	1,410	35	(579)	2,468

4. Financial risk management (continued)

4.2 Market risk (continued)

(B) Currency risk (continued)

	2020					
	Equivalent in million of HK$					
	US Dollars	Baht	Malaysian Ringgit	Philippine Peso	Other foreign currencies	Total foreign currencies
Net structural position	**30,042**	**2,697**	**3,024**	**1,881**	**4,677**	**42,321**

	2019					
	Equivalent in million of HK$					
	US Dollars	Baht	Malaysian Ringgit	Philippine Peso	Other foreign currencies	Total foreign currencies
Net structural position	29,052	2,625	2,903	1,737	4,523	40,840

(C) Interest rate risk

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

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

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

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

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

4. Financial risk management (continued)

4.2 Market risk (continued)

(C) Interest rate risk (continued)

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

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

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

4. Financial risk management (continued)

4.2 Market risk (continued)

(C) Interest rate risk (continued)

The Group is principally exposed to HK Dollar, US Dollar and Renminbi in terms of interest rate risk. As at 31 December 2020, if market interest rates had a 100 basis point parallel shift of the yield curve with other variables held constant, the sensitivities on net interest income over a twelve-month period and on reserves for the Group would have been as follows:

	Impact on net interest income over the next twelve months at 31 December		Impact on reserves at 31 December	
	2020 HK$'m	2019 HK$'m	**2020 HK$'m**	2019 HK$'m
100 basis point parallel up of yield curve				
Total	**2,623**	2,356	**(9,393)**	(7,589)
Of which:				
HK Dollar	**4,164**	3,594	**(677)**	(309)
US Dollar	**178**	(352)	**(5,263)**	(4,647)
Renminbi	**(1,437)**	(615)	**(2,627)**	(2,017)
100 basis point parallel down of yield curve				
Total	**(2,623)**	(2,359)	**9,393**	7,589
Of which:				
HK Dollar	**(4,164)**	(3,594)	**677**	309
US Dollar	**(178)**	352	**5,263**	4,647
Renminbi	**1,437**	615	**2,627**	2,017

4. Financial risk management (continued)

4.2 Market risk (continued)

(C) Interest rate risk (continued)

In a parallel shift up of 100 basis points of yield curve, the overall impact on net interest income of the above currencies is positive in 2020. Reserves of the Group would have been reduced because of the expected reduction in valuation of the debt securities portfolio and relevant interest rate derivatives under hedge accounting due to a parallel shift up of 100 basis points in the yield curve. The positive impact on net interest income is increased and the reduction of reserves is increased compared with 2019 because the size and duration of the debt securities portfolio in capital market increased.

In a parallel shift down of 100 basis points of yield curve, the overall impact on net interest income of the above currencies is negative in 2020. Reserves of the Group would have been increased because of the expected increase in valuation of the debt securities portfolio and relevant interest rate derivatives under hedge accounting due to a parallel shift down of 100 basis points in the yield curve. The negative impact on net interest income is increased and the reserves is increased compared with 2019 because the size and duration of the debt securities portfolio in capital market increased.

The sensitivities above are for illustration only and are based on several assumptions, including, but not limited to, the change in the correlation between interest rates of relevant currencies, parallel movement of interest rates, the absence of actions that would be taken to mitigate the impact of interest rate risk, the effectiveness of hedge accounting, all positions being assumed to run to maturity, behavioural assumptions of products in which the actual repricing date differs from the contractual repricing date or products without contractual maturity. The above exposures form only a part of the Group's overall interest rate risk exposures.

4. Financial risk management (continued)

4.2 Market risk (continued)

(C) Interest rate risk (continued)

The tables below summarise the Group's on-balance sheet exposure to interest rate risk as at 31 December. Included in the tables are the assets and liabilities at carrying amounts, categorised by the earlier of contractual repricing date and maturity date.

	2020						
	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Non-interest bearing HK$'m	Total HK$'m
Assets							
Cash and balances and placements with banks and other financial institutions	338,539	25,591	12,516	1,101	–	85,964	463,711
Financial assets at fair value through profit or loss	4,404	17,991	4,962	7,362	12,695	12,800	60,214
Derivative financial instruments	–	–	–	–	–	52,856	52,856
Hong Kong SAR Government certificates of indebtedness	–	–	–	–	–	189,550	189,550
Advances and other accounts	1,247,621	163,297	36,230	40,454	6,438	6,376	1,500,416
Investment in securities							
– At FVOCI	130,866	213,464	100,434	192,840	116,568	5,882	760,054
– At amortised cost	5,253	3,836	14,834	37,825	58,683	–	120,431
Interests in associates and joint ventures	–	–	–	–	–	1,485	1,485
Investment properties	–	–	–	–	–	18,441	18,441
Properties, plant and equipment	–	–	–	–	–	46,855	46,855
Other assets (including current and deferred tax assets)	20,813	–	–	–	–	86,155	106,968
Total assets	1,747,496	424,179	168,976	279,582	194,384	506,364	3,320,981
Liabilities							
Hong Kong SAR currency notes in circulation	–	–	–	–	–	189,550	189,550
Deposits and balances from banks and other financial institutions	226,861	565	1,322	1,243	–	96,504	326,495
Financial liabilities at fair value through profit or loss	11,551	4,346	3,690	387	362	–	20,336
Derivative financial instruments	–	–	–	–	–	60,313	60,313
Deposits from customers	1,575,155	246,117	110,992	1,715	–	249,730	2,183,709
Debt securities and certificates of deposit in issue	233	–	193	–	–	–	426
Other accounts and provisions (including current and deferred tax liabilities)	11,065	4	94	1,165	447	68,218	80,993
Insurance contract liabilities	–	–	–	–	–	139,504	139,504
Subordinated liabilities	–	–	–	–	–	–	–
Total liabilities	1,824,865	251,032	116,291	4,510	809	803,819	3,001,326
Interest sensitivity gap	(77,369)	173,147	52,685	275,072	193,575	(297,455)	319,655

4. Financial risk management (continued)

4.2 Market risk (continued)

(C) Interest rate risk (continued)

	2019						
	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Non-interest bearing HK$'m	Total HK$'m
Assets							
Cash and balances and placements with banks and other financial institutions	247,996	25,193	6,201	–	–	87,439	366,829
Financial assets at fair value through profit or loss	10,465	17,977	10,254	13,410	21,295	11,792	85,193
Derivative financial instruments	–	–	–	–	–	31,027	31,027
Hong Kong SAR Government certificates of indebtedness	–	–	–	–	–	163,840	163,840
Advances and other accounts	1,142,802	178,023	35,698	43,576	5,126	7,736	1,412,961
Investment in securities							
– At FVOCI	123,330	165,789	110,936	171,211	113,436	5,968	690,670
– At amortised cost	1,970	5,050	10,999	52,157	40,807	–	110,983
Interests in associates and joint ventures	–	–	–	–	–	1,632	1,632
Investment properties	–	–	–	–	–	20,110	20,110
Properties, plant and equipment	–	–	–	–	–	51,602	51,602
Other assets (including current and deferred tax assets)	14,170	–	–	–	–	77,039	91,209
Total assets	1,540,733	392,032	174,088	280,354	180,664	458,185	3,026,056
Liabilities							
Hong Kong SAR currency notes in circulation	–	–	–	–	–	163,840	163,840
Deposits and balances from banks and other financial institutions	236,979	1,271	897	1,628	–	27,114	267,889
Financial liabilities at fair value through profit or loss	2,843	6,046	9,202	724	391	–	19,206
Derivative financial instruments	–	–	–	–	–	32,921	32,921
Deposits from customers	1,409,054	295,979	139,866	4,577	–	159,797	2,009,273
Debt securities and certificates of deposit in issue	–	116	–	–	–	–	116
Other accounts and provisions (including current and deferred tax liabilities)	9,331	7	114	1,008	721	83,915	95,096
Insurance contract liabilities	–	–	–	–	–	117,269	117,269
Subordinated liabilities	–	12,954	–	–	–	–	12,954
Total liabilities	1,658,207	316,373	150,079	7,937	1,112	584,856	2,718,564
Interest sensitivity gap	(117,474)	75,659	24,009	272,417	179,552	(126,671)	307,492

4. Financial risk management (continued)

4.3 Liquidity risk

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

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

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

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

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

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

In accordance with the requirements of Supervisory Policy Manual LM-2 "Sound Systems and controls for Liquidity Risk Management" issued by the HKMA, the Group has implemented a behaviour model and assumptions of cash flow analysis and stress test to enhance the Group's cash flow analysis under both normal and stressed conditions. In cash flow analysis under normal circumstances, assumptions have been made relating to on-balance sheet items (such as deposits from customers) and off-balance sheet items (such as loan commitments). According to various characteristics of the assets, liabilities and off-balance sheet items, the Group forecasts the future cash flow based on the contractual maturity date and the assumptions of customer behaviour and balance sheet changes. The Group establishes the MCO indicator which predicts the future 30 days maximum cumulative net cash outflow in normal situations based on the above assumptions, to assess if the Group has sufficient financing capacity to meet the cash flow gap in order to achieve the objective of continuing operations. As at 31 December 2020, before taking the cash inflow through the sale of outstanding marketable securities into consideration, BOCHK's 30-day cumulative cash flow was a net cash inflow, amounting to HK$186,303 million (2019: HK$116,071 million) and was in compliance with the internal limit requirements.

In the liquidity stress test, institution specific, general market crisis and combined crisis scenarios have been set up, a combined crisis scenario is a combination of institution specific and general market crisis to assess the Group's capability to withstand a more severe liquidity crisis, with a more stringent set of assumptions being adopted. Stress test assumptions include the run-off rate of retail, wholesale and interbank deposits; the drawdown rate of loan commitments and trade-related contingent liabilities; the delinquency ratio and rollover rate of customer loans; and haircut of interbank placement and marketable securities. As at 31 December 2020, the Group was able to maintain a net cash inflow under the three stressed scenarios, indicating the Group has the ability to meet financing needs under stressed conditions. In addition, the Group has a policy in place to maintain a liquidity cushion which includes high quality or comparable quality marketable securities issued or guaranteed by sovereigns, central banks, public sector entities or multilateral development banks with 0% or 20% risk weight or marketable securities issued by non-financial corporate with a corresponding external credit rating of A- or above to ensure funding needs even under stressed scenarios. As at 31 December 2020, the liquidity cushion (before haircut) of BOCHK was HK$645,716 million (2019: HK$531,388 million). A contingency plan is being established which details the conditions to trigger the plan based on stress test results and early warning indicators, the action plans and relevant procedures and responsibility of relevant departments.

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

The Group, being classified as a category 1 authorised institution by the HKMA, is required to calculate the LCR and NSFR on a consolidated basis in accordance with the Banking (Liquidity) Rules. The Group is required to maintain a LCR and NSFR not less than 100% in 2020.

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

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

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

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

(A) Liquidity coverage ratio and net stable funding ratio

	2020	2019
Average value of liquidity coverage ratio		
– First quarter	**150.45%**	183.00%
– Second quarter	**131.38%**	156.57%
– Third quarter	**130.98%**	142.85%
– Fourth quarter	**132.76%**	146.53%

Average value of liquidity coverage ratio is calculated based on the arithmetic mean of the liquidity coverage ratio as at the end of each working day in the quarter and the calculation methodology and instructions set out in the HKMA return of liquidity position.

	2020	2019
Quarter-end value of net stable funding ratio		
– First quarter	**116.60%**	121.36%
– Second quarter	**117.49%**	119.15%
– Third quarter	**115.30%**	116.47%
– Fourth quarter	**125.31%**	118.00%

Quarter-end value of net stable funding ratio is calculated based on the calculation methodology and instructions set out in the HKMA return of stable funding position.

Liquidity coverage ratio and net stable funding ratio are computed on the consolidated basis which comprise the positions of BOCHK and certain subsidiaries specified by the HKMA in accordance with the Banking (Liquidity) Rules.

The additional information of liquidity coverage ratio and net stable funding ratio disclosures is available under the section "Regulatory Disclosures" on BOCHK's website at www.bochk.com.

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

(B) Maturity analysis

The tables below analyse the Group's assets and liabilities as at 31 December into relevant maturity groupings based on the remaining period at balance sheet date to the contractual maturity date.

	2020							
	On demand HK$'m	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Indefinite HK$'m	Total HK$'m
Assets								
Cash and balances and placements with banks and other financial institutions	368,078	56,425	25,217	12,134	1,857	–	–	463,711
Financial assets at fair value through profit or loss	–	4,490	17,863	4,459	7,241	12,114	14,047	60,214
Derivative financial instruments	15,506	3,614	6,190	8,887	12,101	6,558	–	52,856
Hong Kong SAR Government certificates of indebtedness	189,550	–	–	–	–	–	–	189,550
Advances and other accounts	225,736	40,664	82,601	183,549	622,363	344,001	1,502	1,500,416
Investment in securities								
– At FVOCI	–	125,613	199,644	108,713	201,587	116,176	8,321	760,054
– At amortised cost	–	5,575	4,119	14,620	36,100	58,219	1,798	120,431
Interests in associates and joint ventures	–	–	–	–	–	–	1,485	1,485
Investment properties	–	–	–	–	–	–	18,441	18,441
Properties, plant and equipment	–	–	–	–	–	–	46,855	46,855
Other assets (including current and deferred tax assets)	50,984	15,340	3,263	5,498	17,717	12,275	1,891	106,968
Total assets	849,854	251,721	338,897	337,860	898,966	549,343	94,340	3,320,981
Liabilities								
Hong Kong SAR currency notes in circulation	189,550	–	–	–	–	–	–	189,550
Deposits and balances from banks and other financial institutions	269,742	53,625	564	1,322	1,242	–	–	326,495
Financial liabilities at fair value through profit or loss	–	11,552	4,348	3,690	386	360	–	20,336
Derivative financial instruments	11,253	5,064	7,058	9,461	16,758	10,719	–	60,313
Deposits from customers	1,459,907	364,978	246,117	110,992	1,715	–	–	2,183,709
Debt securities and certificates of deposit in issue	–	233	–	193	–	–	–	426
Other accounts and provisions (including current and deferred tax liabilities)	49,267	16,950	1,960	2,988	7,146	2,682	–	80,993
Insurance contract liabilities	57,335	1,296	1,194	5,832	22,214	51,633	–	139,504
Subordinated liabilities	–	–	–	–	–	–	–	–
Total liabilities	2,037,054	453,698	261,241	134,478	49,461	65,394	–	3,001,326
Net liquidity gap	(1,187,200)	(201,977)	77,656	203,382	849,505	483,949	94,340	319,655

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

(B) Maturity analysis (continued)

	2019							
	On demand HK$'m	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Indefinite HK$'m	Total HK$'m
Assets								
Cash and balances and placements with banks and other financial institutions	244,794	90,641	24,799	5,810	785	–	–	366,829
Financial assets at fair value through profit or loss	–	10,389	17,233	9,537	12,515	21,278	14,241	85,193
Derivative financial instruments	11,662	2,593	3,574	4,996	5,212	2,990	–	31,027
Hong Kong SAR Government certificates of indebtedness	163,840	–	–	–	–	–	–	163,840
Advances and other accounts	211,627	46,455	57,860	167,062	619,292	309,478	1,187	1,412,961
Investment in securities								
– At FVOCI	–	113,646	141,953	119,015	195,027	114,737	6,292	690,670
– At amortised cost	–	2,151	5,124	10,634	51,789	40,780	505	110,983
Interests in associates and joint ventures	–	–	–	–	–	–	1,632	1,632
Investment properties	–	–	–	–	–	–	20,110	20,110
Properties, plant and equipment	–	–	–	–	–	–	51,602	51,602
Other assets (including current and deferred tax assets)	42,449	16,213	456	4,224	16,061	11,796	10	91,209
Total assets	674,372	282,088	250,999	321,278	900,681	501,059	95,579	3,026,056
Liabilities								
Hong Kong SAR currency notes in circulation	163,840	–	–	–	–	–	–	163,840
Deposits and balances from banks and other financial institutions	168,004	96,089	1,271	897	1,628	–	–	267,889
Financial liabilities at fair value through profit or loss	–	2,843	6,049	9,202	724	388	–	19,206
Derivative financial instruments	9,576	2,509	3,089	5,161	7,627	4,959	–	32,921
Deposits from customers	1,107,436	461,415	295,979	139,866	4,577	–	–	2,009,273
Debt securities and certificates of deposit in issue	–	–	116	–	–	–	–	116
Other accounts and provisions (including current and deferred tax liabilities)	45,568	35,537	2,137	3,603	8,079	172	–	95,096
Insurance contract liabilities	40,113	455	372	4,814	21,368	50,147	–	117,269
Subordinated liabilities	–	–	12,954	–	–	–	–	12,954
Total liabilities	1,534,537	598,848	321,967	163,543	44,003	55,666	–	2,718,564
Net liquidity gap	(860,165)	(316,760)	(70,968)	157,735	856,678	445,393	95,579	307,492

The analysis of debt securities by remaining period to maturity is based on contractual maturity date. The disclosure does not imply that the securities will be held to maturity.

The above analysis in respect of insurance contract liabilities represents the estimated timing of net cash outflows resulting from recognised insurance contract liabilities on the balance sheet as at 31 December.

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

(C) Analysis of undiscounted cash flows by contractual maturities

(a) Non-derivative cash flows

The tables below summarise the cash flows of the Group as at 31 December for non-derivative financial liabilities by remaining contractual maturity.

	2020					
	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Total HK$'m
Financial liabilities						
Hong Kong SAR currency notes in circulation	189,550	–	–	–	–	189,550
Deposits and balances from banks and other financial institutions	323,387	568	1,342	1,251	–	326,548
Financial liabilities at fair value through profit or loss	11,552	4,349	3,698	409	342	20,350
Deposits from customers	1,824,955	246,406	111,817	1,754	–	2,184,932
Debt securities and certificates of deposit in issue	233	–	194	–	–	427
Subordinated liabilities	–	–	–	–	–	–
Lease liabilities	62	115	480	1,023	134	1,814
Other financial liabilities	50,820	282	144	7	6	51,259
Total financial liabilities	2,400,559	251,720	117,675	4,444	482	2,774,880

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

(C) Analysis of undiscounted cash flows by contractual maturities (continued)

(a) Non-derivative cash flows (continued)

	2019					
	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Total HK$'m
Financial liabilities						
Hong Kong SAR currency notes in circulation	163,840	–	–	–	–	163,840
Deposits and balances from banks and other financial institutions	264,111	1,275	903	1,688	–	267,977
Financial liabilities at fair value through profit or loss	2,845	6,066	9,291	777	406	19,385
Deposits from customers	1,569,226	297,100	141,446	4,696	–	2,012,468
Debt securities and certificates of deposit in issue	–	117	–	–	–	117
Subordinated liabilities	–	12,991	–	–	–	12,991
Lease liabilities	61	116	465	1,162	181	1,985
Other financial liabilities	62,267	234	243	4	6	62,754
Total financial liabilities	2,062,350	317,899	152,348	8,327	593	2,541,517

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

(C) Analysis of undiscounted cash flows by contractual maturities (continued)

(b) Derivative cash flows

The tables below summarise the cash flows of the Group by remaining contractual maturity as at 31 December for derivative financial liabilities that will be settled on a net basis, together with all derivative financial instruments that will be settled on a gross basis regardless of whether the contract is in an asset or liability position. The amounts disclosed in the tables are the contractual undiscounted cash flows, except for certain derivatives which are disclosed at fair value.

The Group's derivative financial instruments that will be settled on a net basis mainly include interest rate swaps whereas derivative financial instruments that will be settled on a gross basis mainly include currency forwards and currency swaps.

	2020					
	Up to 1 month HK$'m	**1 to 3 months HK$'m**	**3 to 12 months HK$'m**	**1 to 5 years HK$'m**	**Over 5 years HK$'m**	**Total HK$'m**
Derivative financial liabilities settled on a net basis	**(12,478)**	**(1,828)**	**(6,454)**	**(15,829)**	**(2,184)**	**(38,773)**
Derivative financial instruments settled on a gross basis						
Total inflow	**431,862**	**356,732**	**369,126**	**128,138**	**5,646**	**1,291,504**
Total outflow	**(433,394)**	**(357,868)**	**(369,544)**	**(127,575)**	**(5,573)**	**(1,293,954)**

	2019					
	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Total HK$'m
Derivative financial liabilities settled on a net basis	(10,065)	(766)	(2,531)	(7,443)	(1,614)	(22,419)
Derivative financial instruments settled on a gross basis						
Total inflow	597,812	437,128	683,988	110,867	1,163	1,830,958
Total outflow	(597,256)	(433,179)	(683,873)	(110,726)	(1,167)	(1,826,201)

4. Financial risk management (continued)

4.3 Liquidity risk (continued)

(C) Analysis of undiscounted cash flows by contractual maturities (continued)

(c) Off-balance sheet items

Loan commitments

The contractual amounts of the Group's off-balance sheet financial instruments as at 31 December 2020 that the Group commits to extend credit to customers and other facilities amounted to HK$705,866 million (2019: HK$621,402 million). Those loan commitments can be drawn within one year.

Financial guarantee contracts

Financial guarantees and other financial facilities of the Group as at 31 December 2020 amounting to HK$60,532 million (2019: HK$62,400 million) are maturing no later than one year.

4.4 Insurance risk

The Group is in the business of insuring against the risk of mortality, morbidity, disability, critical illness, accidents and related risks. The Group manages these risks through the application of its 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 the Group's underwriting procedures include screening processes, such as the review of health condition and family medical history to ensure alignment with the underwriting strategy.

Within the insurance process, concentrations of risk may arise where a particular event or a series of events could impact heavily on the Group's claim liabilities. Such concentrations may arise from a single insurance contract or through a small number of related contracts, and relate to circumstances where significant claim liabilities could arise.

For the in-force insurance contracts, most of the underlying insurance liabilities are related to endowment, universal life, annuity, whole life and unit-linked insurance products. For most of the insurance policies issued, the Group has a retention limit on any single life insured. The Group cedes the excess of the insured benefit over the limit to reinsurer under an excess of loss reinsurance arrangement. For some of the insurance business, the Group has entered into reinsurance arrangements that reinsure most of the insurance risk.

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, the Group has conducted relevant experience studies and researches regularly to identify emerging trends. Results would be taken into account in pricing and underwriting management. The results of such studies are also considered in determining the assumptions of insurance liability which include an appropriate level of prudential margins.

4. Financial risk management (continued)

4.4 Insurance risk (continued)

(A) Process used to decide on assumptions

In determining the long term business fund liabilities, the Group follows the Insurance (Determination of Long Term Liabilities) Rules and makes prudent assumptions which include appropriate margins for adverse deviation of the relevant factors. It takes account of all prospective liabilities as determined by the policy terms and conditions for each existing contract, taking credit for premiums payable after the valuation date. The determination of liability is based on current assumptions made as at the valuation date as to mortality rates and morbidity rates, and takes into account of various appropriate discount rates, and with due regard to the reasonable expectation of policyholders. A prudent margin for adverse deviations is included in the assumptions.

The assumptions adopted for the insurance liabilities disclosed in this note are summarised as follows:

Mortality and morbidity

The amount of liability in respect of any category of contract shall, where relevant, be determined on the basis of prudent rates of mortality and morbidity, plus a margin for adverse deviation. The assumptions used for the determination of future liabilities are based on population statistics or reinsurance information, adjusted where appropriate to reflect the Group's own experience and relevant reinsurance arrangements.

Interest rates adopted for valuation purposes

Homogeneous life insurance policies are grouped into segments and are matched by specific assets. The duration of liabilities under each segment is calculated for valuation purposes.

Investment guarantee of investment contract with discretionary participating feature

The amount of the liability in respect of the investment guarantee provided by the investment contract with discretionary participation feature is determined by stochastic analysis based on historical economic data to reflect the value-at-risk at 99% confidence level.

Acquisition expense

The acquisition expense assumptions used for determination of future liabilities are based on the Group's own experience. The Group has changed the acquisition expense assumptions for new business written based on updated expense experience of the Group.

(B) Change in assumptions

The Group has updated the lapse assumptions to reflect the Group's own experience, and the interest rates adopted for the valuation purposes to reflect the changes in the market interest rates and the yields of investment portfolio backing the policy liabilities. The valuation interest rate assumptions used for the year end valuation purpose were in the range of 0% to 3.04% in 2020 (2019: 0% to 3.29%).

4. Financial risk management (continued)

4.4 Insurance risk (continued)

(C) Sensitivity analysis

The following table presents the sensitivity of the long-term business fund liabilities to movements in the key assumptions used in the estimation of insurance liabilities:

Sensitivity analysis – life and annuity insurance contracts:

		Decrease in profit after tax due to changes in insurance liabilities	
Scenario	Change in variable	**2020 HK$'m**	2019 HK$'m
Worsening of mortality and morbidity	10%	**(221)**	(164)
Lowering of interest rate	50 basis points	**(1,099)**	(1,393)

The above analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated, for example, changes in interest rate and in market values; and changes in lapses and in future mortality and morbidity.

Sensitivity analysis on linked long term insurance contracts, retirement scheme management category III insurance contracts, and retirement scheme management category I investment contracts with "DPF":

The reserves on retirement scheme management category III insurance contracts, retirement scheme management category I investment contracts with "DPF" and non-unitised reserve on linked long term insurance contracts are insignificant to the whole portfolio, and no sensitivity analysis has been performed. The insurance liabilities for these three components contributed to less than 0.1% of the total insurance liabilities at the balance sheet date.

For unit-linked fund liabilities (unitised reserve), the liabilities are backed by the unit-linked fund asset values.

Among linked long term insurance contracts, there are contracts with minimum guaranteed death benefits that expose the Group to the risk arising from declines in the value of underlying investments. This may increase the Group's net exposure to mortality risk.

4.5 Capital management

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

4. Financial risk management (continued)

4.5 Capital management (continued)

The Group has developed and maintained a sound framework of policies and controls on capital management to support the development of the Group's business and to meet the statutory capital adequacy ratio. The ALCO monitors the Group's capital adequacy. The Group has complied with all the statutory capital requirements of the HKMA for the reported periods in respect of banking operation as further elaborated below.

The Group has adopted the foundation internal ratings-based ("FIRB") approach to calculate the credit risk capital charge for the majority of its non-securitisation exposures. Small residual credit exposures are remained under the standardised (credit risk) ("STC") approach. The Group has adopted the standardised credit valuation adjustment ("CVA") method to calculate the capital charge for the CVA risk of the counterparty.

The Group continues to adopt the internal models ("IMM") approach to calculate the general market risk capital charge for foreign exchange and interest rate exposures and, with the approval from the HKMA, exclude its structural FX positions in the calculation of the market risk capital charge. The Group continues to adopt the standardised (market risk) ("STM") approach to calculate the market risk capital charge for the remaining exposures.

The Group continues to adopt the standardised (operational risk) ("STO") approach to calculate the operational risk capital charge.

The Group has continued to adopt an internal capital adequacy assessment process ("ICAAP") to comply with the HKMA's requirements in the Supervisory Policy Manual "Supervisory Review Process" in 2020. Based on the HKMA's guidelines on Pillar II, ICAAP has been initiated to assess the extra capital needed to cover the material risks not captured or not adequately captured under Pillar I, and therefore minimum Common Equity Tier 1 capital ratio, minimum Tier 1 capital ratio and minimum Total capital ratio are determined. Meanwhile, operating ranges for the aforementioned capital ratios have also been established which enable the flexibility for future business growth and efficiency of capital utilisation. The Group considers this ICAAP as an on-going process for capital management and periodically reviews and adjusts its capital structure where appropriate in relation to the overall risk profile.

In addition, the capital plan of the Group is drawn up annually and then submitted to the Board for approval after endorsement of the ALCO. The plan is built up by assessing the implications of various factors upon capital adequacy such as the business strategies, return on equity, risk appetite, credit rating, as well as regulatory requirements. Hence, the future capital requirement is determined and capital sources are identified also. The plan is to ensure the Group maintains adequate capital and appropriate capital structure which align with its business development needs, thereby achieving an optimal balance among risk, return and capital adequacy.

(A) Basis of regulatory consolidation

The consolidation basis for regulatory purposes comprises the positions of BOCHK and certain subsidiaries specified by the HKMA in accordance with the Banking (Capital) Rules. For accounting purposes, subsidiaries are consolidated in accordance with HKFRSs and the list of subsidiaries is set out in "Appendix – Subsidiaries of the Company".

The Company, its subsidiaries of BOC Group Life Assurance Company Limited, BOCHK Asset Management (Cayman) Limited and BOC Insurance (International) Holdings Company Limited (including their subsidiaries), and certain subsidiaries of BOCHK are included within the accounting scope of consolidation but not included within the regulatory scope of consolidation.

4. Financial risk management (continued)

4.5 Capital management (continued)

(A) Basis of regulatory consolidation (continued)

The particulars of the above-mentioned subsidiaries of BOCHK are as follows:

Name	2020 Total assets HK$'m	2020 Total equity HK$'m	2019 Total assets HK$'m	2019 Total equity HK$'m
BOC Group Trustee Company Limited	**200**	**200**	200	200
BOCI-Prudential Trustee Limited	**553**	**498**	612	483
China Bridge (Malaysia) Sdn. Bhd.	**13**	**9**	56	36
Bank of China (Hong Kong) Nominees Limited	**–**	**–**	–	–
Bank of China (Hong Kong) Trustees Limited	**11**	**11**	12	11
BOC Financial Services (Nanning) Company Limited	**248**	**43**	173	42
BOCHK Information Technology (Shenzhen) Co., Ltd.	**387**	**265**	401	255
BOCHK Information Technology Services (Shenzhen) Co., Ltd.	**421**	**360**	418	348
Che Hsing (Nominees) Limited	**–**	**–**	1	1
Po Sang Financial Investment Services Company Limited	**364**	**345**	364	345
Po Sang Securities and Futures Limited	**952**	**375**	664	373
Sin Chiao Enterprises Corporation, Limited*	**N/A**	**N/A**	6	6
Sin Hua Trustee Limited	**5**	**5**	5	5
Billion Express Development Inc.	**–**	**–**	–	–
Billion Orient Holdings Ltd.	**–**	**–**	–	–
Elite Bond Investments Ltd.	**–**	**–**	–	–
Express Capital Enterprise Inc.	**–**	**–**	–	–
Express Charm Holdings Corp.	**–**	**–**	–	–
Express Shine Assets Holdings Corp.	**–**	**–**	–	–
Express Talent Investment Ltd.	**–**	**–**	–	–
Gold Medal Capital Inc.	**–**	**–**	–	–
Gold Tap Enterprises Inc.	**–**	**–**	–	–
Maxi Success Holdings Ltd.	**–**	**–**	–	–
Smart Linkage Holdings Inc.	**–**	**–**	–	–
Smart Union Capital Investments Ltd.	**–**	**–**	–	–
Success Trend Development Ltd.	**–**	**–**	–	–
Wise Key Enterprises Corp.	**–**	**–**	–	–

* Sin Chiao Enterprises Corporation, Limited was dissolved on 28 December 2020.

4. Financial risk management (continued)

4.5 Capital management (continued)

(A) Basis of regulatory consolidation (continued)

The principal activities of the above subsidiaries are set out in "Appendix – Subsidiaries of the Company".

There were no subsidiaries which are included within the regulatory scope of consolidation but not included within the accounting scope of consolidation as at 31 December 2020 (2019: Nil).

There were also no subsidiaries which are included within both the accounting scope of consolidation and the regulatory scope of consolidation where the methods of consolidation differ as at 31 December 2020 (2019: Nil).

The Group operates subsidiaries in different countries/regions where capital is governed by local rules and there may be restrictions on the transfer of funds or regulatory capital between the members of the Group.

(B) Capital ratio

The capital ratios are analysed as follows:

	2020	2019
CET1 capital ratio	**17.75%**	17.76%
Tier 1 capital ratio	**19.67%**	19.90%
Total capital ratio	**22.10%**	22.89%

4. Financial risk management (continued)

4.5 Capital management (continued)

(B) Capital ratio (continued)

The consolidated capital base after deductions used in the calculation of the above capital ratios is analysed as follows:

	2020 HK$'m	2019 HK$'m
CET1 capital: instruments and reserves		
Directly issued qualifying CET1 capital instruments	**43,043**	43,043
Retained earnings	**184,230**	164,113
Disclosed reserves	**45,100**	51,309
CET1 capital before regulatory deductions	**272,373**	258,465
CET1 capital: regulatory deductions		
Valuation adjustments	**(24)**	(65)
Other intangible assets (net of associated deferred tax liabilities)	**(1,502)**	–
Deferred tax assets (net of associated deferred tax liabilities)	**(91)**	(62)
Gains and losses due to changes in own credit risk on fair valued liabilities	**(21)**	237
Cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties)	**(49,413)**	(52,459)
Regulatory reserve for general banking risks	**(4,780)**	(11,077)
Total regulatory deductions to CET1 capital	**(55,831)**	(63,426)
CET1 capital	**216,542**	195,039
AT1 capital: instruments		
Qualifying AT1 capital instruments classified as equity under applicable accounting standards	**23,476**	23,476
AT1 capital	**23,476**	23,476
Tier 1 capital	**240,018**	218,515
Tier 2 capital: instruments and provisions		
Capital instruments subject to phase-out arrangements from Tier 2 capital	**–**	2,505
Collective provisions and regulatory reserve for general banking risks eligible for inclusion in Tier 2 capital	**7,322**	6,743
Tier 2 capital before regulatory deductions	**7,322**	9,248
Tier 2 capital: regulatory deductions		
Add back of cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties) eligible for inclusion in Tier 2 capital	**22,236**	23,607
Total regulatory adjustments to Tier 2 capital	**22,236**	23,607
Tier 2 capital	**29,558**	32,855
Total regulatory capital	**269,576**	251,370

4. Financial risk management (continued)

4.5 Capital management (continued)

(B) Capital ratio (continued)

The capital buffer ratios are analysed as follows:

	2020	2019
Capital conservation buffer ratio	**2.500%**	2.500%
Higher loss absorbency ratio	**1.500%**	1.500%
Countercyclical capital buffer ratio	**0.790%**	1.552%

The additional information of capital ratio disclosures is available under the section "Regulatory Disclosures" on BOCHK's website at www.bochk.com.

(C) Leverage ratio

The leverage ratio is analysed as follows:

	2020 HK$'m	2019 HK$'m
Tier 1 capital	**240,018**	218,515
Leverage ratio exposure	**3,036,425**	2,799,606
Leverage ratio	**7.90%**	7.81%

The additional information of leverage ratio disclosures is available under the section "Regulatory Disclosures" on BOCHK's website at www.bochk.com.

5. Fair values of assets and liabilities

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy as defined in HKFRS 13, "Fair value measurement". The categorisation are determined with reference to the observability and significance of the inputs used in the valuation methods and based on the lowest level input that is significant to the fair value measurement as a whole:

– Level 1: based on quoted prices (unadjusted) in active markets for identical assets or liabilities. This category includes equity securities listed on exchange, debt instruments issued by certain governments and certain exchange-traded derivative contracts.

– Level 2: based on valuation techniques for which the lowest level input that is significant to the fair value measurement is observable, either directly or indirectly. This category includes majority of the OTC derivative contracts, debt securities and certificates of deposit with quote from pricing services vendors, issued structured deposits and other debt instruments. It also includes certain foreign exchange contracts, precious metals and properties with insignificant adjustments or calibrations made to observable market inputs.

– Level 3: based on valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable. This category includes equity investment, debt instruments and certain OTC derivative contracts with significant unobservable components. It also includes properties with significant adjustments made to observable market inputs.

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by reassessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

5.1 Financial instruments measured at fair value

The Group has an established governance structure and controls framework to ensure that fair values are either determined or validated by control units independent of the front offices. Control units have overall responsibility for independent verification of valuation results from front line businesses and all other significant fair value measurements. Other specific controls include verification of observable pricing inputs; review and approval for new models and changes to models; calibration and back-testing of models against observed market transactions; analysis and investigation of significant daily valuation movements; review of significant unobservable inputs and valuation adjustments. Significant valuation issues are reported to senior management, Risk Committee and Audit Committee.

Generally, the unit of account for a financial instrument is the individual instrument. HKFRS 13 permits a portfolio exception, through an accounting policy election, to measure the fair value of a portfolio of financial assets and financial liabilities on the basis of the net open risk position when certain criteria are met. The Group applies valuation adjustments at an individual instrument level, consistent with that unit of account. According to its risk management policies and systems to manage derivative financial instruments, the fair value of certain derivative portfolios that meet those criteria is measured on the basis of the price to be received or paid for net open risk. Those portfolio-level adjustments are allocated to the individual assets and liabilities on the basis of its relative net risk exposure to the portfolio.

The Group uses valuation techniques or broker/dealer quotations to determine the fair value of financial instruments when unable to obtain the open market quotation in active markets.

5. Fair values of assets and liabilities (continued)

5.1 Financial instruments measured at fair value (continued)

The main parameters used in valuation techniques for financial instruments held by the Group include bond prices, interest rates, foreign exchange rates, equity and stock prices, commodity prices, volatilities and correlations, counterparty credit spreads and others, which are mostly observable and obtainable from open market.

The technique used to calculate the fair value of the following financial instruments is as below:

Debt securities and certificates of deposit and other debt instruments

The fair value of these instruments is determined by obtaining quoted market prices from exchange, dealer or independent pricing service vendors or using discounted cash flow technique. Discounted cash flow model is a valuation technique that measures present value using estimated expected future cash flows from the instruments and then discounts these flows using a discount rate or discount margin that reflects the credit spreads required by the market for instruments with similar risk. These inputs are observable or can be corroborated by observable or unobservable market data.

Asset backed securities

For this class of instruments, external prices are obtained from independent third parties. The valuation of these securities, depending on the nature of transaction, is estimated from market standard cash flow models with input parameter which include spreads to discount rates, default and recovery rates and prepayment rates that may be observable or compiled through matrix pricing for similar issues.

Derivatives

OTC derivative contracts include forward, swap and option contracts on foreign exchange, interest rate, equity, commodity or credit. The fair values of these contracts are mainly measured using valuation techniques such as discounted cash flow models and option pricing models. The inputs can be observable or unobservable market data. Observable inputs include interest rate, foreign exchange rates, equity and stock prices, commodity prices, credit default swap spreads, volatilities and correlations. Unobservable inputs may be used for less commonly traded option products which are embedded in structured deposits. For certain complex derivative contracts, the fair values are determined based on broker/dealer price quotations.

Credit valuation adjustments ("CVAs") and debit valuation adjustments ("DVAs") are applied to the Group's OTC derivatives. These adjustments reflect market factors movement, expectations of counterparty creditworthiness and the Group's own credit spread respectively. They are mainly determined for each counterparty and are dependent on expected future values of exposures, default probabilities and recovery rates.

Subordinated liabilities

Fair value for subordinated notes is based on market prices or broker/dealer price quotations. Own credit adjustment for subordinated notes is calculated as the difference between the market value and the net present value calculated by the latest benchmark interest rate and own credit spreads of the subordinated notes determined on the beginning of measurement period.

5. Fair values of assets and liabilities (continued)

5.1 Financial instruments measured at fair value (continued)

(A) Fair value hierarchy

	2020			
	Level 1 HK$'m	Level 2 HK$'m	Level 3 HK$'m	Total HK$'m
Financial assets				
Trading assets (Note 23)				
– Debt securities and certificates of deposit	**–**	**26,817**	**–**	**26,817**
– Equity securities	**49**	**–**	**–**	**49**
– Other debt instruments	**–**	**3,300**	**–**	**3,300**
Other financial assets mandatorily classified at fair value through profit or loss (Note 23)				
– Debt securities and certificates of deposit	**–**	**15,026**	**846**	**15,872**
– Equity securities	**3,910**	**–**	**–**	**3,910**
– Fund	**4,934**	**1,183**	**2,724**	**8,841**
Financial assets designated at fair value through profit or loss (Note 23)				
– Debt securities and certificates of deposit	**720**	**587**	**–**	**1,307**
– Other debt instruments	**–**	**118**	**–**	**118**
Derivative financial instruments (Note 24)	**33**	**52,823**	**–**	**52,856**
Investment in securities at FVOCI (Note 26)				
– Debt securities and certificates of deposit	**258,764**	**493,776**	**1,632**	**754,172**
– Equity securities	**2,441**	**1,074**	**2,367**	**5,882**
Financial liabilities				
Financial liabilities at fair value through profit or loss (Note 32)				
– Trading liabilities	**–**	**20,336**	**–**	**20,336**
Derivative financial instruments (Note 24)	**35**	**60,278**	**–**	**60,313**
Subordinated liabilities (Note 38)				
– Subordinated notes	**–**	**–**	**–**	**–**

5. Fair values of assets and liabilities (continued)

5.1 Financial instruments measured at fair value (continued)

(A) Fair value hierarchy (continued)

	2019			
	Level 1 HK$'m	Level 2 HK$'m	Level 3 HK$'m	Total HK$'m
Financial assets				
Trading assets (Note 23)				
– Debt securities and certificates of deposit	133	37,457	–	37,590
– Equity securities	37	–	–	37
– Other debt instruments	–	5,297	–	5,297
Other financial assets mandatorily classified at fair value through profit or loss (Note 23)				
– Debt securities and certificates of deposit	–	25,271	2,252	27,523
– Equity securities	2,618	–	–	2,618
– Fund	5,705	1,958	1,474	9,137
Financial assets designated at fair value through profit or loss (Note 23)				
– Debt securities and certificates of deposit	708	2,283	–	2,991
– Other debt instruments	–	–	–	–
Derivative financial instruments (Note 24)	11,674	19,342	11	31,027
Investment in securities at FVOCI (Note 26)				
– Debt securities and certificates of deposit	197,156	485,679	1,867	684,702
– Equity securities	2,680	1,134	2,154	5,968
Financial liabilities				
Financial liabilities at fair value through profit or loss (Note 32)				
– Trading liabilities	–	19,206	–	19,206
Derivative financial instruments (Note 24)	9,717	23,204	–	32,921
Subordinated liabilities (Note 38)				
– Subordinated notes	–	12,954	–	12,954

There were transfers of derivative financial assets of HK$15,498 million and derivative financial liabilities of HK$11,227 million from level 1 to level 2 for the Group during 2020 as a result of calibrations of market observable inputs on certain financial instruments. The impact arising from such calibrations was insignificant to the fair value measurement of the relevant financial instruments. There were no other significant financial asset and liability transfers between level 1 and level 2 for the Group during the year (2019: Nil).

5. Fair values of assets and liabilities (continued)

5.1 Financial instruments measured at fair value (continued)

(B) Reconciliation of level 3 items

	2020				
	Financial assets				
	Other financial assets mandatorily classified at FVPL			Investment in securities at FVOCI	
	Debt securities and certificates of deposit HK$'m	Fund HK$'m	Derivative financial instruments HK$'m	Debt securities and certificates of deposit HK$'m	Equity securities HK$'m
At 1 January 2020	2,252	1,474	11	1,867	2,154
Gains					
– Income statement					
– Net trading gain	–	–	146	–	–
– Net gain on other financial instruments at fair value through profit or loss	223	107	–	–	–
– Other comprehensive income					
– Change in fair value	–	–	–	191	213
Additions	194	1,143	–	–	–
Disposals, redemptions and maturity	(1,823)	–	–	(426)	–
Transfer into level 3	–	–	–	–	–
Transfer out of level 3	–	–	(157)	–	–
At 31 December 2020	846	2,724	–	1,632	2,367
Total unrealised gains for the year included in income statement for financial assets held as at 31 December 2020					
– Net trading gain	–	–	–	–	–
– Net gain on other financial instruments at fair value through profit or loss	49	107	–	–	–
	49	107	–	–	–

5. Fair values of assets and liabilities (continued)

5.1 Financial instruments measured at fair value (continued)

(B) Reconciliation of level 3 items (continued)

	2019				
	Financial assets				
	Other financial assets mandatorily classified at FVPL			Investment in securities at FVOCI	
	Debt securities and certificates of deposit HK$'m	Fund HK$'m	Derivative financial instruments HK$'m	Debt securities and certificates of deposit HK$'m	Equity securities HK$'m
At 1 January 2019	1,909	915	7	1,618	1,144
Gains					
– Income statement					
– Net trading gain	–	–	11	–	–
– Net gain on other financial instruments at fair value through profit or loss	382	80	–	–	–
– Other comprehensive income					
– Change in fair value	–	–	–	249	446
Additions	156	412	–	–	564
Disposals, redemptions and maturity	(195)	–	–	–	–
Transfer into level 3	–	67	–	–	–
Transfer out of level 3	–	–	(7)	–	–
At 31 December 2019	2,252	1,474	11	1,867	2,154
Total unrealised gains for the year included in income statement for financial assets held as at 31 December 2019					
– Net trading gain	–	–	11	–	–
– Net gain on other financial instruments at fair value through profit or loss	382	80	–	–	–
	382	80	11	–	–

5. Fair values of assets and liabilities (continued)

5.1 Financial instruments measured at fair value (continued)

(B) Reconciliation of level 3 items (continued)

As at 31 December 2020 and 2019, financial instruments categorised as level 3 are mainly comprised of debt securities and certificates of deposit, fund, unlisted equity shares and certain OTC derivative contracts.

For certain illiquid debt securities and certificates of deposit and fund, the Group obtains valuation quotations from counterparties which may be based on unobservable inputs with significant impact on the valuation. For certain OTC derivative contracts, the counterparty credit spreads used in valuation techniques are unobservable inputs with significant impact on valuation. Therefore, these instruments have been classified by the Group as level 3. Transfers into and out of level 3 during 2020 and 2019 were due to change of valuation observability. The Group has established internal control procedures to control the Group's exposure to such financial instruments.

The fair values of unlisted FVOCI equity shares are determined with reference to (i) latest market transaction price; or (ii) multiples of comparable listed companies, such as average of the price/sales ratios of comparables; or (iii) dividend discount model calculation of the underlying equity investments; or (iv) net asset value, if neither appropriate comparables nor dividend discount model calculation is available or applicable. The fair value is positively correlated to the market transaction price, price/sales ratios of appropriate comparables, forecasted stream of future dividend payout or net asset values, and is negatively correlated to the discount rate used in the average of price/sales ratios of comparables or dividend discount model.

Had all of the significant unobservable inputs applied on the valuation techniques favourably changed/unfavourably changed by 5% (2019: 5%), the Group's other comprehensive income would have increased/decreased by HK$55 million and HK$54 million, respectively (2019: HK$98 million and HK$93 million, respectively).

5. Fair values of assets and liabilities (continued)

5.2 Financial instruments not measured at fair value

Fair value estimates are made at a specific point in time based on relevant market information and information about various financial instruments. The following methods and assumptions have been used to estimate the fair value of each class of financial instrument as far as practicable.

Balances with/from banks and other financial institutions and trade bills

Substantially all the financial assets and liabilities mature within one year from the balance sheet date and their carrying value approximates fair value.

Advances to customers and banks and other financial institutions

Substantially all the advances to customers and banks and other financial institutions are on floating rate terms, bear interest at prevailing market interest rates and their carrying value approximates fair value.

Investment in securities at amortised cost

The fair value of securities at amortised cost is determined by using the same approach as those debt securities and certificates of deposit and asset backed securities measured at fair value as described in Note 5.1. Besides, a discounted cash flow model is used for certain securities at amortised cost based on a current yield curve appropriate for the remaining term to maturity.

Deposits from customers

Substantially all the deposits from customers mature within one year from the balance sheet date and their carrying value approximates fair value.

Debt securities and certificates of deposit in issue

The fair value of these instruments is determined by using the same approach as those debt securities and certificates of deposit measured at fair value as described in Note 5.1.

5. Fair values of assets and liabilities (continued)

5.2 Financial instruments not measured at fair value (continued)

The following tables set out the carrying values and fair values of the financial instruments not measured at fair value, except for the above with their carrying values being approximation of fair values.

	2020		2019	
	Carrying value HK$'m	**Fair value HK$'m**	Carrying value HK$'m	Fair value HK$'m
Financial assets				
Investment in securities at amortised cost (Note 26)	**120,431**	**127,060**	110,983	114,241
Financial liabilities				
Debt securities and certificates of deposit in issue (Note 34)	**426**	**426**	116	116

The following tables show the fair value hierarchy for financial instruments with fair values disclosed.

	2020			
	Level 1 HK$'m	**Level 2 HK$'m**	**Level 3 HK$'m**	**Total HK$'m**
Financial assets				
Investment in securities at amortised cost	**957**	**122,887**	**3,216**	**127,060**
Financial liabilities				
Debt securities and certificates of deposit in issue	**–**	**426**	**–**	**426**

	2019			
	Level 1 HK$'m	Level 2 HK$'m	Level 3 HK$'m	Total HK$'m
Financial assets				
Investment in securities at amortised cost	1,002	111,556	1,683	114,241
Financial liabilities				
Debt securities and certificates of deposit in issue	–	116	–	116

5. Fair values of assets and liabilities (continued)

5.3 Non-financial instruments measured at fair value

The Group uses valuation techniques or quoted market prices in active market to determine the fair value of non-financial instruments.

Investment properties and premises

The Group's properties can be divided into investment properties and premises. All of the Group's investment properties and premises were revalued as at year end. This year, the valuations were carried out by an independent firm of chartered surveyors, Knight Frank Petty Limited, who have among their staff Fellow and Members of The Hong Kong Institute of Surveyors with recent experience in the locations and categories of properties being valued. The Group's Management had discussions with the surveyors on the valuation methods, valuation assumptions and valuation results when the valuation is performed at each interim and annual reporting date. Except for a site redevelopment of investment property that has been commenced during the year using the residual approach valuation, there has been no change in valuation methods during the year and the methods used are consistent with last year.

(i) Valuation methods and inputs used in Level 2 fair value measurements

The fair value of properties classified as Level 2 is determined using either the market comparison approach by reference to recent sales price of comparable properties or the income capitalisation approach by reference to market rent and capitalisation rate, with appropriate adjustments to reflect the differences between the comparable properties and the subject properties. These adjustments are considered as insignificant to the entire measurement.

The Group's properties are located in Hong Kong, certain major cities in the mainland, Thailand and Malaysia where the property markets are considered active and transparent. Sales price, market rent and capitalisation rate of comparable properties are generally observable either directly or indirectly in these markets.

(ii) Information about Level 3 fair value measurements

The fair value of all of the Group's properties classified as Level 3, except for the bank vault, is determined using either the market comparison approach or the income capitalisation approach, adjusted for a premium or a discount specific to the features of the Group's properties compared to the comparable properties.

The fair value of the bank vault is determined using the depreciated replacement cost approach as no direct comparable is available given the specialised nature of the property. The major inputs are the market value of the existing land, the current cost of replacing the property and the depreciation rate. Appropriate adjustments are made to reflect the specialised nature of the property.

5. Fair values of assets and liabilities (continued)

5.3 Non-financial instruments measured at fair value (continued)

Investment properties and premises (continued)

(ii) Information about Level 3 fair value measurements (continued)

The valuation methods and significant unobservable inputs used in the fair value measurement of the Group's properties classified as Level 3 are as follows:

	Valuation method	Significant unobservable inputs	Weighted average	Relationship of unobservable inputs to fair value
Bank vault	Depreciated replacement cost approach	Depreciation rate	2% (2019: 2%) per year	The higher the depreciation rate, the lower the fair value.
		Premium on specialised nature of the property	+15% (2019: +15%) to building cost	The higher the premium, the higher the fair value.
Other properties	Market comparison approach or income capitalisation approach	Premium/(discount) on features of the property compared to comparable properties	-8% (2019: -11%)	The higher the premium, the higher the fair value. The higher the discount, the lower the fair value.

Premium/(discount) on features of a property is determined after taken into account various factors, such as time for market movement, location, accessibility, building age/condition, floor level, size, layout, etc., with reference to the differences in features with comparable properties.

For the fair value of the investment property with a redevelopment plan, it is measured on a redevelopment basis by adopting residual approach which is a valuation method generally used to value development of lands. Gross Development Value ("GDV") is first determined using market comparison approach by reference to recent transactions of comparable properties and adjusted for a premium or a discount specific to the quality of the Group's development compared to the comparable properties. The ultimate fair value of the redevelopment is the residual value after deducting the present value of the development costs (including professional fees, demolition cost, constructions cost etc.) and developer's profit from the present value of the GDV. The higher the GDV, the higher the fair value; the higher the development costs and the discount rate, the lower is the fair value.

Precious metals

The fair values of precious metals are determined by obtaining quoted market prices in active market or market quote with certain adjustments.

5. Fair values of assets and liabilities (continued)

5.3 Non-financial instruments measured at fair value (continued)

(A) Fair value hierarchy

	2020			
	Level 1 HK$'m	Level 2 HK$'m	Level 3 HK$'m	Total HK$'m
Non-financial assets				
Investment properties (Note 28)	–	697	17,744	18,441
Properties, plant and equipment (Note 29)				
– Premises	–	2,601	40,947	43,548
Other assets (Note 30)				
– Precious metals	–	10,697	–	10,697

	2019			
	Level 1 HK$'m	Level 2 HK$'m	Level 3 HK$'m	Total HK$'m
Non-financial assets				
Investment properties (Note 28)	–	396	19,714	20,110
Properties, plant and equipment (Note 29)				
– Premises	–	1,020	45,322	46,342
Other assets (Note 30)				
– Precious metals	6,542	2,719	–	9,261

There were transfers of HK$5,721 million of precious metals from level 1 to level 2 for the Group during 2020 as a result of calibrations of market observable inputs on precious metals. The impact arising from such calibrations was insignificant to the fair value measurement of precious metals. There were no other non-financial asset transfers between level 1 and level 2 for the Group during the year (2019: Nil).

5. Fair values of assets and liabilities (continued)

5.3 Non-financial instruments measured at fair value (continued)

(B) Reconciliation of level 3 items

	2020	
	Non-financial assets	
		Properties, plant and equipment
	Investment properties HK$'m	Premises HK$'m
At 1 January 2020	**19,714**	**45,322**
Losses		
– Income statement		
– Net loss from fair value adjustments on investment properties	**(1,622)**	**–**
– Net loss from revaluation of premises	**–**	**(57)**
– Other comprehensive income		
– Revaluation of premises	**–**	**(1,720)**
Depreciation	**–**	**(1,157)**
Additions	**9**	**87**
Transfer into level 3	**–**	**–**
Transfer out of level 3	**(277)**	**(1,608)**
Reclassification	**(80)**	**80**
Exchange difference	**–**	**–**
At 31 December 2020	**17,744**	**40,947**
Total unrealised losses for the year included in income statement for non-financial assets held as at 31 December 2020		
– Net loss from fair value adjustments on investment properties	**(1,622)**	**–**
– Net loss from revaluation of premises	**–**	**(57)**
	(1,622)	**(57)**

5. Fair values of assets and liabilities (continued)

5.3 Non-financial instruments measured at fair value (continued)

(B) Reconciliation of level 3 items (continued)

	2019	
	Non-financial assets	
		Properties, plant and equipment
	Investment properties HK$'m	Premises HK$'m
At 1 January 2019	19,316	45,349
Gains		
– Income statement		
– Net gain from fair value adjustments on investment properties	274	–
– Net gain from revaluation of premises	–	11
– Other comprehensive income		
– Revaluation of premises	–	1,023
Depreciation	–	(1,141)
Additions	32	133
Transfer into level 3	36	173
Transfer out of level 3	(136)	(35)
Reclassification	192	(192)
Exchange difference	–	1
At 31 December 2019	19,714	45,322
Total unrealised gains for the year included in income statement for non-financial assets held as at 31 December 2019		
– Net gain from fair value adjustments on investment properties	274	–
– Net gain from revaluation of premises	–	11
	274	11

The transfer of properties into and out of level 3 is due to change in the premium/(discount) on features applied between the subject and comparable properties during the year. Premium/(discount) on features is determined with reference to differences in features between the subject properties and the comparable properties recently transacted in the market. As comparable properties that come from recent market transactions may be different in each year, the premium/(discount) on features applied between the subject and comparable properties would change from year to year accordingly. As a result, the significance of adjustments made to observable market inputs may vary and lead to the transfer of properties into and out of level 3.

6. Net interest income

	2020 HK$'m	2019 HK$'m
Interest income		
Advances to customers, due from banks and other financial institutions	**34,744**	46,766
Investment in securities and financial assets at fair value through profit or loss	**14,960**	20,448
Others	**224**	570
	49,928	67,784
Interest expense		
Deposits from customers, due to banks and other financial institutions	**(14,743)**	(25,856)
Debt securities and certificates of deposit in issue	**(2)**	(79)
Subordinated liabilities	**(80)**	(719)
Lease liabilities	**(54)**	(55)
Others	**(311)**	(552)
	(15,190)	(27,261)
Net interest income	**34,738**	40,523

Included within interest income are HK$38,633 million (2019: HK$50,884 million) and HK$10,122 million (2019: HK$14,266 million) for financial assets measured at amortised cost and at fair value through other comprehensive income respectively.

Included within interest expense are HK$14,947 million (2019: HK$26,174 million) for financial liabilities that are not measured at fair value through profit or loss.

7. Net fee and commission income

	2020 HK$'m	2019 HK$'m
Fee and commission income		
Securities brokerage	**3,567**	2,113
Loan commissions	**2,310**	2,675
Credit card business	**1,859**	2,975
Insurance	**1,272**	2,111
Funds distribution	**897**	901
Payment services	**740**	716
Trust and custody services	**689**	651
Bills commissions	**591**	700
Safe deposit box	**306**	294
Currency exchange	**226**	599
Others	**1,058**	1,267
	13,515	15,002
Fee and commission expense		
Credit card business	**(1,179)**	(2,044)
Securities brokerage	**(415)**	(255)
Insurance	**(405)**	(849)
Others	**(674)**	(935)
	(2,673)	(4,083)
Net fee and commission income	**10,842**	10,919
Of which arise from:		
Financial assets or financial liabilities not at fair value through profit or loss		
– Fee and commission income	**2,588**	3,141
– Fee and commission expense	**(9)**	(12)
	2,579	3,129
Trust and other fiduciary activities		
– Fee and commission income	**888**	841
– Fee and commission expense	**(30)**	(28)
	858	813

8. Net trading gain

	2020 HK$'m	2019 HK$'m
Net gain/(loss) from:		
Foreign exchange and foreign exchange products	**5,282**	4,931
Interest rate instruments and items under fair value hedge	**(619)**	(578)
Commodities	**361**	366
Equity and credit derivative instruments	**150**	81
	5,174	4,800

9. Net gain on other financial instruments at fair value through profit or loss

	2020 HK$'m	2019 HK$'m
Net gain on other financial instruments mandatorily classified at fair value through profit or loss	**1,838**	2,976
Net gain on financial instruments designated at fair value through profit or loss	**121**	267
	1,959	3,243

10. Net gain on other financial assets

	2020 HK$'m	2019 HK$'m
Net gain on disposal/redemption of investment in securities at FVOCI	**4,503**	854
Net gain/(loss) on disposal/redemption of investment in securities at amortised cost	**62**	(47)
Others	**7**	17
	4,572	824

Gain on disposal of investment in securities at amortised cost due to credit deterioration amounted to HK$98 million (2019: loss of HK$6 million).

11. Other operating income

	2020 HK$'m	2019 HK$'m
Dividend income		
– From investment in securities at FVOCI derecognised during the year	**36**	18
– From investment in securities at FVOCI held at the end of the year	**199**	238
Gross rental income from investment properties	**587**	660
Less: Outgoings in respect of investment properties	**(61)**	(60)
Others	**135**	159
	896	1,015

Included in the "Outgoings in respect of investment properties" is HK$4 million (2019: HK$1 million) of direct operating expenses related to investment properties that were not let during the year.

12. Net insurance benefits and claims and movement in liabilities

	2020 HK$'m	2019 HK$'m
Gross insurance benefits and claims and movement in liabilities		
Claims, benefits and surrenders paid	**(14,036)**	(16,644)
Movement in liabilities	**(20,077)**	(13,283)
	(34,113)	(29,927)
Reinsurers' share of benefits and claims and movement in liabilities		
Reinsurers' share of claims, benefits and surrenders paid	**8,371**	5,859
Reinsurers' share of movement in liabilities	**3,575**	2,776
	11,946	8,635
Net insurance benefits and claims and movement in liabilities	**(22,167)**	(21,292)

13. Net charge of impairment allowances

	2020 HK$'m	2019 HK$'m
Net (charge)/reversal of impairment allowances on:		
Advances and other accounts	**(2,489)**	(1,852)
Balances and placements with banks and other financial institutions	**(5)**	12
Investment in securities		
– At FVOCI	**(100)**	(20)
– At amortised cost	**(16)**	(17)
	(116)	(37)
Loan commitments and financial guarantee contracts	**(77)**	(136)
Others	**(20)**	(9)
Net charge of impairment allowances	**(2,707)**	(2,022)

14. Operating expenses

	2020 HK$'m	2019 HK$'m
Staff costs (including directors' emoluments)		
– Salaries and other costs	**8,916**	8,849
– Pension cost	**545**	515
	9,461	9,364
Premises and equipment expenses (excluding depreciation)		
– Short-term leases, leases of low-value assets and variable lease payments	**11**	201
– Others	**1,224**	1,341
	1,235	1,542
Depreciation (Note 29)	**3,040**	2,881
Auditor's remuneration		
– Audit services	**29**	28
– Non-audit services	**14**	10
Other operating expenses	**2,568**	2,842
	16,347	16,667

15. Net (loss)/gain from disposal of/fair value adjustments on investment properties

	2020 HK$'m	2019 HK$'m
Net (loss)/gain from fair value adjustments on investment properties (Note 28)	**(1,622)**	282

16. Net loss from disposal/revaluation of properties, plant and equipment

	2020 HK$'m	2019 HK$'m
Net loss from disposal of equipment, fixtures and fittings	**(4)**	(7)
Net (loss)/gain from revaluation of premises (Note 29)	**(59)**	6
	(63)	(1)

17. Taxation

Taxation in the income statement represents:

	2020 **HK$'m**	2019 HK$'m
Current tax		
Hong Kong profits tax		
– Current year taxation	**5,412**	5,741
– Over-provision in prior years	**(180)**	(90)
	5,232	5,651
Overseas taxation		
– Current year taxation	**419**	643
– Over-provision in prior years	**(25)**	(135)
	5,626	6,159
Deferred tax		
Origination and reversal of temporary differences and unused tax credits (Note 36)	**(511)**	(145)
	5,115	6,014

Hong Kong profits tax has been provided at the rate of 16.5% (2019: 16.5%) on the estimated assessable profits arising in Hong Kong during the year. Taxation on overseas profits has been calculated on the estimated assessable profits for the year at the rates of taxation prevailing in the countries/regions in which the Group operates.

The taxation on the Group's profit before taxation that differs from the theoretical amount that would arise using the taxation rate of Hong Kong is as follows:

	2020 **HK$'m**	2019 HK$'m
Profit before taxation	**33,583**	40,088
Calculated at a taxation rate of 16.5% (2019: 16.5%)	**5,541**	6,615
Effect of different taxation rates in other countries/regions	**75**	166
Income not subject to taxation	**(410)**	(1,028)
Expenses not deductible for taxation purposes	**461**	592
Utilisation of previously unrecognised tax losses	**(10)**	(2)
Over-provision in prior years	**(205)**	(225)
Foreign withholding tax	**(110)**	125
Others	**(227)**	(229)
Taxation charge	**5,115**	6,014
Effective tax rate	**15.2%**	15.0%

18. Dividends

	2020		2019	
	Per share HK$	**Total HK$'m**	Per share HK$	Total HK$'m
Interim dividend paid	**0.447**	**4,726**	0.545	5,762
Proposed final dividend	**0.795**	**8,405**	0.992	10,488
	1.242	**13,131**	1.537	16,250

At a meeting held on 30 August 2020, the Board declared an interim dividend of HK$0.447 per ordinary share for the first half of 2020 amounting to approximately HK$4,726 million.

At a meeting held on 30 March 2021, the Board proposed to recommend to the Annual General Meeting on 17 May 2021 a final dividend of HK$0.795 per ordinary share for the year ended 31 December 2020 amounting to approximately HK$8,405 million. This proposed final dividend is not reflected as a dividend payable in these financial statements, but will be reflected as an appropriation of retained earnings for the year ending 31 December 2021.

19. Earnings per share

The calculation of basic earnings per share for the year ended 31 December 2020 is based on the consolidated profit for the year attributable to equity holders of the Company of approximately HK$26,487 million (2019: HK$32,184 million) and on the ordinary shares in issue of 10,572,780,266 shares (2019: 10,572,780,266 ordinary shares).

There was no dilution of earnings per share as no potential ordinary shares were in issue for the year ended 31 December 2020 (2019: Nil).

20. Retirement benefit costs

Retirement benefits are provided to eligible employees of the Group. In Hong Kong, defined contribution schemes for the Group's employees are ORSO schemes exempted under the MPF Schemes Ordinance and the BOC-Prudential Easy Choice MPF Scheme.

Under the ORSO schemes, employees make monthly contributions to the ORSO schemes equal to 5% of their basic salaries, while the employer makes monthly contributions equal to 5% to 15% of the employees' monthly basic salaries, depending on years of service. The employees are entitled to receive 100% of the employer's contributions upon retirement, early retirement or termination of employment after completing 10 years of service. Employees with 3 to 9 years of service are entitled to receive the employer's contributions at a scale ranging from 30% to 90% upon termination of employment for other reasons other than summary dismissal. All employer's contributions received by employee are subject to MPF Schemes Ordinance.

With the implementation of the MPF Schemes Ordinance on 1 December 2000, the Group also launched the MPF Scheme according to the regulatory requirement. Since 2019, employees with 5 years of service or above are entitled to employer's voluntary contribution. The trustee of the Scheme is BOCI-Prudential Trustee and the investment manager is BOCI-Prudential Asset Management, which are related parties of the Company.

The Group's total contributions made to the ORSO schemes for the year ended 31 December 2020 amounted to approximately HK$375 million (2019: approximately HK$358 million), after a deduction of forfeited contributions of approximately HK$10 million (2019: approximately HK$10 million). For the MPF Scheme, the Group contributed approximately HK$132 million (2019: approximately HK$118 million) for the year ended 31 December 2020.

21. Directors', senior management's and key personnel's emoluments

(a) Directors' and senior management's emoluments

(i) Directors' emoluments

Details of the emoluments paid to or receivable by the directors of the Company in respect of their services rendered for the Company and managing the subsidiaries within the Group during the year are as follows:

	2020				
	Directors' fee HK$'000	Basic salaries, allowances and benefits in kind HK$'000	Bonus HK$'000	Other payments# HK$'000	Total HK$'000
Executive Directors					
SUN Yu (Chief Executive) Note 1	–	140	31	–	171
GAO Yingxin (Chief Executive) Note 2	–	3,041	1,636	–	4,677
	–	3,181	1,667	–	4,848
Non-executive Directors					
LIU Liange	–	–	–	–	–
WANG Jiang Note 1	–	–	–	–	–
LIN Jingzhen	–	–	–	–	–
CHENG Eva*	600	–	–	–	600
CHOI Koon Shum*	600	–	–	–	600
KOH Beng Seng*	650	–	–	–	650
LAW Yee Kwan Quinn*	550	–	–	–	550
TUNG Savio Wai-Hok*	700	–	–	–	700
	3,100	–	–	–	3,100
	3,100	3,181	1,667	–	7,948

Note 1: Appointed during the year.
Note 2: Resigned during the year.

21. Directors', senior management's and key personnel's emoluments (continued)

(a) Directors' and senior management's emoluments (continued)

(i) Directors' emoluments (continued)

	2019				
	Directors' fee HK$'000	Basic salaries, allowances and benefits in kind HK$'000	Bonus HK$'000	Other payments# HK$'000	Total HK$'000
Executive Directors					
GAO Yingxin (Chief Executive)	–	7,142	4,247	–	11,389
LI Jiuzhong	–	1,008	533	–	1,541
	–	8,150	4,780	–	12,930
Non-executive Directors					
LIU Liange	–	–	–	–	–
LIN Jingzhen	–	–	–	–	–
CHENG Eva*	502	–	–	–	502
CHOI Koon Shum*	551	–	–	–	551
KOH Beng Seng*	601	–	–	–	601
LAW Yee Kwan Quinn*	404	–	–	–	404
TUNG Savio Wai-Hok*	651	–	–	–	651
CHEN Siqing	–	–	–	–	–
	2,709	–	–	–	2,709
	2,709	8,150	4,780	–	15,639

* Independent Non-executive Directors

\# Including the contributions to pension scheme for directors, inducement to join the Group and the compensation for the loss of office paid to or receivable by directors.

There were no directors waived emoluments for the year ended 31 December 2020 (2019: Nil).

21. Directors', senior management's and key personnel's emoluments (continued)

(a) Directors' and senior management's emoluments (continued)

(ii) Five highest paid individuals

The five individuals whose emoluments were the highest in the Group for the year do not include any (2019: one) directors. The emoluments payable to the five (2019: four) individuals during the year are as follows:

	2020 HK$'m	2019 HK$'m
Basic salaries and allowances	26	17
Bonus	10	10
Contributions to pension schemes	1	1
	37	28

Emoluments paid to or receivable by individuals during the year with reference to their tenure are within the following bands:

	Number of individuals	
	2020	2019
HK$6,500,001 to HK$7,000,000	1	2
HK$7,000,001 to HK$7,500,000	2	–
HK$7,500,001 to HK$8,000,000	1	2
HK$8,500,001 to HK$9,000,000	1	–

21. Directors', senior management's and key personnel's emoluments (continued)

(a) Directors' and senior management's emoluments (continued)

(iii) Senior management's emoluments

Emoluments paid to or receivable by individuals during the year with reference to their tenure as senior management are within the following bands:

	Number of individuals	
	2020	2019
HK$0 to HK$500,000	**1**	–
HK$500,001 to HK$1,000,000	**–**	1
HK$1,500,001 to HK$2,000,000	**–**	1
HK$2,000,001 to HK$2,500,000	**–**	1
HK$3,500,001 to HK$4,000,000	**1**	–
HK$4,500,001 to HK$5,000,000	**1**	–
HK$5,000,001 to HK$5,500,000	**2**	2
HK$5,500,001 to HK$6,000,000	**1**	2
HK$6,000,001 to HK$6,500,000	**1**	1
HK$6,500,001 to HK$7,000,000	**1**	–
HK$7,000,001 to HK$7,500,000	**1**	–
HK$7,500,001 to HK$8,000,000	**1**	1
HK$11,000,001 to HK$11,500,000	**–**	1

(b) Remuneration for Senior Management and Key Personnel under CG-5

For the purpose of disclosure, Senior Management and Key Personnel are defined as follows:

- Senior Management: The senior executives designated by the Board who are responsible for oversight of the firm-wide strategy or material business lines, including the Chief Executive, Deputy Chief Executives, Chief Financial Officer, Chief Risk Officer, Chief Operating Officer, Board Secretary and General Manager of Group Audit.

- Key Personnel: The employees whose individual business activities involve the assumption of material risk which may have significant impact on risk exposure, or whose individual responsibilities are directly and materially linked to the risk management, or those who have direct influence to the profit, including heads of material business lines, heads of major subsidiaries, senior executives of Southeast Asian entities, head of trading, as well as heads of risk control functions.

21. Directors', senior management's and key personnel's emoluments (continued)

(b) Remuneration for Senior Management and Key Personnel under CG-5 (continued)

Details of the remuneration for Senior Management and Key Personnel of the Group during the year are as follows:

(i) Remuneration awarded during financial year

	2020		2019	
	Senior Management HK$'m	**Key Personnel HK$'m**	Senior Management HK$'m	Key Personnel HK$'m
Fixed remuneration				
Cash-based	**45**	**153**	42	146
Of which: deferred	**–**	**–**	–	–
Variable remuneration				
Cash-based	**18**	**60**	19	89
Of which: deferred	***5***	***13***	*5*	*23*
Total remuneration	**63**	**213**	61	235
Number of employees				
Fixed remuneration	**13**	**58**	12	59
Variable remuneration	**13**	**57**	12	58

(ii) Special payments

	2020		2019	
	Senior Management HK$'m	**Key Personnel HK$'m**	Senior Management HK$'m	Key Personnel HK$'m
Sign-on awards	**–**	**3**	–	–
Number of employees	**–**	**2**	–	–

There were no guaranteed bonuses and severance payments to Senior Management and Key Personnel for the year ended 31 December 2020 (2019: Nil).

21. Directors', senior management's and key personnel's emoluments (continued)

(b) Remuneration for Senior Management and Key Personnel under CG-5 (continued)

(iii) Deferred remuneration

	2020				
	Total amount of outstanding deferred remuneration HK\$'m	Of which: Total amount of outstanding deferred and retained remuneration exposed to ex post explicit and/or implicit adjustment HK\$'m	Total amount of amendment during the year due to ex post explicit adjustments HK\$'m	Total amount of amendment during the year due to ex post implicit adjustments HK\$'m	Total amount of deferred remuneration paid out in the financial year HK\$'m
Senior Management					
Cash	**10**	**10**	**–**	**–**	**(5)**
Key Personnel					
Cash	**36**	**36**	**–**	**–**	**(19)**
Total	**46**	**46**	**–**	**–**	**(24)**

	2019				
	Total amount of outstanding deferred remuneration HK\$'m	Of which: Total amount of outstanding deferred and retained remuneration exposed to ex post explicit and/or implicit adjustment HK\$'m	Total amount of amendment during the year due to ex post explicit adjustments HK\$'m	Total amount of amendment during the year due to ex post implicit adjustments HK\$'m	Total amount of deferred remuneration paid out in the financial year HK\$'m
Senior Management					
Cash	10	10	–	–	(5)
Key Personnel					
Cash	42	42	–	–	(14)
Total	52	52	–	–	(19)

22. Cash and balances and placements with banks and other financial institutions

	2020 HK$'m	2019 HK$'m
Cash	**38,187**	19,028
Balances with central banks	**141,803**	150,249
Placements with central banks maturing within one month	**36,842**	9,541
Placements with central banks maturing between one and twelve months	**3,379**	2,444
Placements with central banks maturing over one year	**1,547**	785
	183,571	163,019
Balances with other banks and other financial institutions	**188,089**	75,518
Placements with other banks and other financial institutions maturing within one month	**19,588**	81,101
Placements with other banks and other financial institutions maturing between one and twelve months	**33,974**	28,166
Placements with other banks and other financial institutions maturing over one year	**310**	–
	241,961	184,785
	463,719	366,832
Impairment allowances		
– Stage 1	**(8)**	(3)
– Stage 2	**–**	–
– Stage 3	**–**	–
	463,711	366,829

23. Financial assets at fair value through profit or loss

	2020 HK$'m	2019 HK$'m
Securities		
Trading assets		
– Treasury bills	**1,349**	21,025
– Certificates of deposit	**171**	2,953
– Other debt securities	**25,297**	13,612
	26,817	37,590
– Equity securities	**49**	37
	26,866	37,627
Other financial assets mandatorily classified at fair value through profit or loss		
– Certificates of deposit	**–**	2
– Other debt securities	**15,872**	27,521
	15,872	27,523
– Equity securities	**3,910**	2,618
– Fund	**8,841**	9,137
	28,623	39,278
Financial assets designated at fair value through profit or loss		
– Certificates of deposit	**–**	–
– Other debt securities	**1,307**	2,991
	1,307	2,991
Total securities	**56,796**	79,896
Other debt instruments		
Trading assets	**3,300**	5,297
Financial assets designated at fair value through profit or loss	**118**	–
Total other debt instruments	**3,418**	5,297
	60,214	85,193

23. Financial assets at fair value through profit or loss (continued)

Total securities are analysed by place of listing as follows:

	2020 HK$'m	2019 HK$'m
Debt securities and certificates of deposit		
– Listed in Hong Kong	26,306	14,901
– Listed outside Hong Kong	8,133	14,036
– Unlisted	9,557	39,167
	43,996	68,104
Equity securities		
– Listed in Hong Kong	2,610	1,500
– Listed outside Hong Kong	1,265	1,155
– Unlisted	84	–
	3,959	2,655
Fund		
– Listed outside Hong Kong	491	–
– Unlisted	8,350	9,137
	8,841	9,137
Total securities	56,796	79,896

Total securities are analysed by type of issuer as follows:

	2020 HK$'m	2019 HK$'m
Sovereigns	26,207	30,812
Public sector entities	535	1,526
Banks and other financial institutions	20,935	33,665
Corporate entities	9,119	13,893
Total securities	56,796	79,896

24. Derivative financial instruments and hedge accounting

The Group enters into exchange rate, interest rate, commodity, equity and credit related derivative financial instrument contracts for trading and risk management purposes.

Currency forwards represent commitments to purchase and sell foreign currency on a future date. Interest rate futures are contractual obligations to receive or pay a net amount based on changes in interest rates or buy or sell interest rate financial instruments on a future date at an agreed price in the financial market under the administration of the stock exchange. Forward rate agreements are individually negotiated interest rate futures that call for a cash settlement at a future date for the difference between a contract rate of interest and the current market rate, based on a notional principal amount.

Currency, interest rate and commodity swaps are commitments to exchange one set of cash flows or commodity for another. Swaps result in an exchange of currencies, interest rates (for example, fixed rate for floating rate), or precious metals (for example, silver swaps) or a combination of all these (for example, cross-currency interest rate swaps). Except for certain currency swap contracts, no exchange of principal takes place.

Foreign currency, interest rate, precious metal and equity options are contractual agreements under which the seller (writer) grants the purchaser (holder) the right, but not the obligation, either to buy (a call option) or sell (a put option) at or by a set date or during a set period, a specific amount of the financial instrument at a predetermined price. In consideration for the assumption of foreign exchange and interest rate risk, the seller receives a premium from the purchaser. Options are negotiated over-the-counter between the Group and its counterparty or traded through the stock exchange (for example, exchange-traded stock option).

The contract/notional amounts and fair values of derivative financial instruments held by the Group are set out in the following tables. The contract/notional amounts of these instruments indicate the volume of transactions outstanding at the balance sheet dates and certain of them provide a basis for comparison with the fair values of instruments recognised on the balance sheet. However, they do not necessarily indicate the amounts of future cash flows involved or the current fair values of the instruments and, therefore, do not indicate the Group's exposure to credit or market risks. The derivative financial instruments become favourable (assets) or unfavourable (liabilities) as a result of fluctuations in foreign exchange rates, market interest rates, commodity prices or equity prices relative to their terms. The aggregate fair values of derivative financial instruments can fluctuate significantly from time to time.

(a) Derivative financial instruments

The Group trades derivative products (both exchange-traded and OTC) mainly for customer business. The Group strictly follows risk management policies and requirements in providing derivative products to our customers and in trading of derivative products in the interbank market.

Derivatives are also used to manage the interest rate risk of the banking book. A derivative instrument must be included in the approved product list before any transactions for that instrument can be made. There are limits to control the notional amount of exposure arising from derivative transactions, and the maximum tenor of the deal is set. Every derivative transaction must be input into the relevant system for settlement, mark-to-market revaluation, reporting and control.

24. Derivative financial instruments and hedge accounting (continued)

(a) Derivative financial instruments (continued)

The following tables summarise the contract/notional amounts and fair values of each class of derivative financial instrument as at 31 December:

	2020		
	Contract/ notional amounts HK$'m	Fair values	
		Assets HK$'m	Liabilities HK$'m
Exchange rate contracts			
Spot, forwards and futures	**250,999**	**13,496**	**(9,914)**
Swaps	**1,157,985**	**18,667**	**(20,759)**
Options	**21,443**	**147**	**(136)**
	1,430,427	**32,310**	**(30,809)**
Interest rate contracts			
Futures	**488**	**–**	**–**
Swaps	**1,152,857**	**17,211**	**(26,218)**
Options	**5,845**	**–**	**–**
	1,159,190	**17,211**	**(26,218)**
Commodity contracts	**42,819**	**3,282**	**(3,246)**
Equity contracts	**2,526**	**53**	**(40)**
Credit derivative contracts	**–**	**–**	**–**
	2,634,962	**52,856**	**(60,313)**

24. Derivative financial instruments and hedge accounting (continued)

(a) Derivative financial instruments (continued)

	2019		
	Contract/ notional amounts	Fair values	
		Assets	Liabilities
	HK$'m	HK$'m	HK$'m
Exchange rate contracts			
Spot, forwards and futures	315,793	11,814	(8,082)
Swaps	1,556,697	10,849	(10,108)
Options	49,544	132	(100)
	1,922,034	22,795	(18,290)
Interest rate contracts			
Futures	2,318	2	(29)
Swaps	1,223,157	7,462	(12,002)
Options	3,114	–	–
	1,228,589	7,464	(12,031)
Commodity contracts	48,446	756	(2,576)
Equity contracts	1,317	12	(15)
Credit derivative contracts	389	–	(9)
	3,200,775	31,027	(32,921)

(b) Hedge accounting

Fair value hedges

The Group uses interest rate swaps to hedge against change in fair value of financial assets and liabilities arising from movements in market interest rates. Interest rate risk to which the Group applies hedge accounting arises from fixed-rate debt securities, whose fair value fluctuates when benchmark interest rates change. The Group only designates interest rate risks to the extent of benchmark interest rates as the hedged risks because the changes in fair value of the fixed-rate debt securities are significantly influenced by the changes in the benchmark interest rates. Hedge accounting is applied where economic hedging relationships meet the hedge accounting criteria.

Possible sources of ineffectiveness are as follows:

– Increase or decrease in the amounts of hedged items or hedging instruments;

– Significant changes in counterparties' credit risk.

24. Derivative financial instruments and hedge accounting (continued)

(b) Hedge accounting (continued)

Fair value hedges (continued)

The table below summarises the contract/notional amounts of the hedging instruments as at 31 December by remaining contractual maturity.

	2020					
	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Total HK$'m
Interest rate swaps	**1,875**	**2,011**	**8,382**	**61,441**	**37,545**	**111,254**

	2019					
	Up to 1 month HK$'m	1 to 3 months HK$'m	3 to 12 months HK$'m	1 to 5 years HK$'m	Over 5 years HK$'m	Total HK$'m
Interest rate swaps	849	1,575	6,065	67,336	38,066	113,891

The amounts relating to items designated as hedging instruments are as follows:

	2020			
	Contract/ notional amounts	Fair values		Change in fair value used for recognising hedge ineffectiveness
	HK$'m	Assets HK$'m	Liabilities HK$'m	HK$'m
Derivative financial instruments				
Interest rate swaps	**111,254**	**50**	**(6,196)**	**(4,074)**

	2019			
	Contract/ notional amounts	Fair values		Change in fair value used for recognising hedge ineffectiveness
	HK$'m	Assets HK$'m	Liabilities HK$'m	HK$'m
Derivative financial instruments				
Interest rate swaps	113,891	330	(2,632)	(3,714)

24. Derivative financial instruments and hedge accounting (continued)

(b) Hedge accounting (continued)

Fair value hedges (continued)

The amounts relating to hedged items are as follows:

	2020		
	Carrying amounts HK$'m	Accumulated amount of fair value hedge adjustment included in the carrying amounts HK$'m	Change in value used for recognising hedge ineffectiveness HK$'m
Investment in securities			
Debt securities	**119,092**	**6,538**	**4,302**

	2019		
	Carrying amounts HK$'m	Accumulated amount of fair value hedge adjustment included in the carrying amounts HK$'m	Change in value used for recognising hedge ineffectiveness HK$'m
Investment in securities			
Debt securities	118,224	2,813	3,921

Hedge ineffectiveness recognised is as follows:

	2020 HK$'m	2019 HK$'m
Net trading gain	**228**	207

24. Derivative financial instruments and hedge accounting (continued)

(c) IBOR reform

The HKAS 39, HKFRS 7 and HKFRS 9 (Amendments), "Interest Rate Benchmark Reform" modify some specific hedge accounting requirements. During the period of uncertainty arising from phasing-out of interest rate benchmarks with an alternative nearly risk-free interest rate ("RFR"), the entities that apply these hedge accounting requirements can assume that the interest rate benchmarks on which the hedged cash flows and cash flows of the hedging instrument are based are not altered as a result of IBOR reform. The Group has adopted the amendments for the financial year beginning on 1 January 2020.

The Group has fair value hedge accounting relationships that are exposed to different interbank offered rates, predominantly US Dollar LIBOR. External progress on the transition to RFRs is being monitored, with the objective of ensuring a smooth transition for the Group's hedge accounting relationships. The specific issues arising will vary with the details of each hedging relationship, but may arise due to the transition of existing products included in the designation, a change in expected volumes of products to be issued, a change in contractual terms of new products issued, or a combination of these factors. Some hedges may need to be de-designated and new relationships entered into, while others may survive the market-wide benchmarks reform.

The hedged items that are affected by the adoption of the temporary exceptions in hedge accounting relationships are debt securities which are presented in the consolidated balance sheet as "Investment in securities". When identifying the hedged items that are affected by the adoption of the temporary exception, judgement has been exercised by the Group in determining when uncertainty is expected to be resolved and therefore when the temporary exceptions will cease to apply. As at 31 December 2020, the Group believed that the uncertainty continued to exist and so the temporary exceptions apply to all of the Group's hedge accounting relationships that reference benchmarks subject to reform or replacement.

The contract/notional amounts of interest rate derivatives designated in hedge accounting relationships represent the extent of the risk exposure managed by the Group that is directly affected by market-wide benchmarks reform and impacted by the temporary exceptions, which is presented as below:

	2020 Contract/ notional amounts HK$'m
Interest rate swaps	**104,022**

In October 2020, HKICPA issued HKAS 39, HKFRS 4, HKFRS 7, HKFRS 9 and HKFRS 16 (Amendments), "Interest Rate Benchmark Reform – Phase 2". The Group will adopt the amendments for the financial year beginning on 1 January 2021.

25. Advances and other accounts

	2020 HK$'m	2019 HK$'m
Personal loans and advances	**458,577**	415,874
Corporate loans and advances	**1,039,287**	980,009
Advances to customers	**1,497,864**	1,395,883
Less: Impairment allowances		
– Stage 1	**(5,405)**	(4,563)
– Stage 2	**(1,115)**	(297)
– Stage 3	**(2,652)**	(2,175)
	1,488,692	1,388,848
Trade bills	**9,826**	20,727
Less: Impairment allowances		
– Stage 1	**–**	(1)
– Stage 2	**–**	–
– Stage 3	**–**	–
	9,826	20,726
Advances to banks and other financial institutions	**1,898**	3,387
	1,500,416	1,412,961

As at 31 December 2020, advances to customers included accrued interest of HK$1,958 million (2019: HK$2,751 million).

26. Investment in securities

	2020 HK$'m	2019 HK$'m
Investment in securities at fair value through other comprehensive income		
– Treasury bills	**122,583**	234,284
– Certificates of deposit	**46,029**	51,167
– Other debt securities	**585,560**	399,251
	754,172	684,702
– Equity securities	**5,882**	5,968
	760,054	690,670
Investment in securities at amortised cost		
– Certificates of deposit	**984**	1,526
– Other debt securities	**119,509**	109,503
	120,493	111,029
– Impairment allowances		
Stage 1	**(62)**	(46)
Stage 2	**–**	–
Stage 3	**–**	–
	120,431	110,983
	880,485	801,653

26. Investment in securities (continued)

Investment in securities is analysed by place of listing as follows:

	2020 HK$'m	2019 HK$'m
Investment in securities at fair value through other comprehensive income		
Debt securities and certificates of deposit		
– Listed in Hong Kong	**195,265**	69,523
– Listed outside Hong Kong	**150,153**	187,072
– Unlisted	**408,754**	428,107
	754,172	684,702
Equity securities		
– Listed in Hong Kong	**2,777**	3,207
– Listed outside Hong Kong	**496**	607
– Unlisted	**2,609**	2,154
	5,882	5,968
	760,054	690,670
Investment in securities at amortised cost		
Debt securities and certificates of deposit		
– Listed in Hong Kong	**28,050**	19,664
– Listed outside Hong Kong	**59,685**	55,151
– Unlisted	**32,696**	36,168
	120,431	110,983
	880,485	801,653
Market value of listed securities at amortised cost	**92,341**	77,394

Investment in securities is analysed by type of issuer as follows:

	2020 HK$'m	2019 HK$'m
Sovereigns	**426,384**	357,468
Public sector entities	**26,363**	46,790
Banks and other financial institutions	**270,645**	221,098
Corporate entities	**157,093**	176,297
	880,485	801,653

26. Investment in securities (continued)

The movements in investment in securities are summarised as follows:

	2020	
	At fair value through other comprehensive income HK$'m	**At amortised cost HK$'m**
At 1 January 2020	**690,670**	**110,983**
Additions	**1,149,390**	**58,961**
Disposals, redemptions and maturity	**(1,102,401)**	**(49,850)**
Amortisation	**478**	**260**
Change in fair value/fair value hedge adjustment	**10,537**	**(15)**
Net charge of impairment allowances	**–**	**(16)**
Exchange difference	**11,380**	**108**
At 31 December 2020	**760,054**	**120,431**

	2019	
	At fair value through other comprehensive income HK$'m	At amortised cost HK$'m
At 1 January 2019	489,542	109,496
Additions	1,038,569	18,740
Disposals, redemptions and maturity	(847,685)	(16,558)
Amortisation	2,663	(90)
Change in fair value/fair value hedge adjustment	10,371	42
Net charge of impairment allowances	–	(17)
Exchange difference	(2,790)	(630)
At 31 December 2019	690,670	110,983

The Group has designated certain equity securities as equity securities at fair value through other comprehensive income. The fair value through other comprehensive income designation was made because these are held for strategic investments. Investments include subordinated Additional Tier 1 securities, listed and unlisted equity shares.

The Group derecognised certain equity securities at fair value through other comprehensive income with fair value of HK$2,289 million (2019: HK$1,076 million) during the year. The derecognition was made because of portfolio rebalancing and the redemption by issuer.

27. Interests in associates and joint ventures

	2020 HK$'m	2019 HK$'m
At 1 January	**1,632**	483
Additions	**6**	1,100
Share of results	**(126)**	94
Share of tax	**(26)**	(42)
Dividend received	**(3)**	(3)
Exchange difference	**2**	–
At 31 December	**1,485**	1,632

The particulars of the Group's associates and joint ventures, all of which are unlisted, are as follows:

Name	Place of incorporation and operation	Issued share capital	Interest held	Principal activities
BOC Services Company Limited	PRC	Registered capital RMB50,000,000	45%	Credit card back-end service support
FutureX Innovation Limited	Cayman Islands	US$1	20%	Investment holding
Golden Harvest (Cayman) Limited	Cayman Islands	US$100	49%	Investment holding
Joint Electronic Teller Services Limited	Hong Kong	HK$10,026,000	19.96%	Operation of a private inter-bank message switching network in respect of ATM services
Livi Bank Limited	Hong Kong	HK$2,500,000,000	44%	Banking business
Sunac Realtor Capital Limited	Cayman Islands	US$1	20%	Investment holding
盈進智能製造（深圳）投資中心（有限合夥）	PRC	Paid in capital RMB9,500,000	52.63%	Investment holding

None of the above associates and joint ventures is considered individually or in aggregate material to the Group.

28. Investment properties

	2020 HK$'m	2019 HK$'m
At 1 January	**20,110**	19,684
Additions	**9**	35
Fair value (loss)/gain (Note 15)	**(1,622)**	282
Reclassification (to)/from properties, plant and equipment (Note 29)	**(56)**	109
At 31 December	**18,441**	20,110

The carrying value of investment properties is analysed based on the remaining terms of the leases as follows:

	2020 HK$'m	2019 HK$'m
Held in Hong Kong		
On long-term lease (over 50 years)	**4,720**	5,005
On medium-term lease (10 to 50 years)	**13,362**	14,743
Held outside Hong Kong		
On medium-term lease (10 to 50 years)	**328**	330
On short-term lease (less than 10 years)	**31**	32
	18,441	20,110

As at 31 December 2020, investment properties were included in the balance sheet at valuation carried out at 31 December 2020 on the basis of their fair value by an independent firm of chartered surveyors, Knight Frank Petty Limited. The fair value represents the price that would be received to sell each investment property in an orderly transaction with market participants at the measurement date.

29. Properties, plant and equipment

	Premises HK$'m	Equipment, fixtures and fittings HK$'m	Right-of-use assets HK$'m	Total HK$'m
Net book value at 1 January 2020	46,342	3,331	1,929	51,602
Additions	91	1,232	561	1,884
Disposals	(2)	(13)	(10)	(25)
Revaluation	(1,766)	–	–	(1,766)
Depreciation for the year (Note 14)	(1,173)	(1,107)	(760)	(3,040)
Reclassification from investment properties (Note 28)	56	–	–	56
Transfer to other assets (Note 30)	–	(1,862)	–	(1,862)
Exchange difference	–	1	5	6
Net book value at 31 December 2020	43,548	1,582	1,725	46,855
At 31 December 2020				
Cost or valuation	43,548	7,006	3,001	53,555
Accumulated depreciation and impairment	–	(5,424)	(1,276)	(6,700)
Net book value at 31 December 2020	43,548	1,582	1,725	46,855
The analysis of cost or valuation of the above assets is as follows:				
At 31 December 2020				
At cost	–	7,006	3,001	10,007
At valuation	43,548	–	–	43,548
	43,548	7,006	3,001	53,555

Application software with net book value of HK$1,862 million, representing cost of HK$5,101 million and accumulated amortisation of HK$3,239 million, was transferred to other assets and presented as intangible assets on 31 December 2020.

29. Properties, plant and equipment (continued)

	Premises HK$'m	Equipment, fixtures and fittings HK$'m	Right-of-use assets HK$'m	Total HK$'m
Net book value at 1 January 2019	46,390	3,045	1,757	51,192
Additions	147	1,303	877	2,327
Disposals	–	(8)	–	(8)
Revaluation	1,070	–	–	1,070
Depreciation for the year (Note 14)	(1,157)	(1,013)	(711)	(2,881)
Reclassification to investment properties (Note 28)	(109)	–	–	(109)
Exchange difference	1	4	6	11
Net book value at 31 December 2019	46,342	3,331	1,929	51,602
At 31 December 2019				
Cost or valuation	46,342	11,487	2,640	60,469
Accumulated depreciation and impairment	–	(8,156)	(711)	(8,867)
Net book value at 31 December 2019	46,342	3,331	1,929	51,602
The analysis of cost or valuation of the above assets is as follows:				
At 31 December 2019				
At cost	–	11,487	2,640	14,127
At valuation	46,342	–	–	46,342
	46,342	11,487	2,640	60,469

29. Properties, plant and equipment (continued)

The carrying value of premises is analysed based on the remaining terms of the leases as follows:

	2020 HK$'m	2019 HK$'m
Held in Hong Kong		
On long-term lease (over 50 years)	**12,904**	13,735
On medium-term lease (10 to 50 years)	**30,292**	32,243
Held outside Hong Kong		
On long-term lease (over 50 years)	**75**	75
On medium-term lease (10 to 50 years)	**277**	289
	43,548	46,342

As at 31 December 2020, premises were included in the balance sheet at valuation carried out at 31 December 2020 on the basis of their fair value by an independent firm of chartered surveyors, Knight Frank Petty Limited. The fair value represents the price that would be received to sell each premises in an orderly transaction with market participants at the measurement date.

As a result of the above-mentioned revaluations, changes in value of the premises were recognised as follows:

	2020 HK$'m	2019 HK$'m
(Decrease)/increase in valuation (charged)/credited to income statement (Note 16)	**(59)**	6
(Decrease)/increase in valuation (charged)/credited to other comprehensive income	**(1,707)**	1,064
	(1,766)	1,070

As at 31 December 2020, the net book value of premises that would have been included in the Group's balance sheet had the premises been carried at cost less accumulated depreciation and impairment losses was HK$8,748 million (2019: HK$8,715 million).

30. Other assets

	2020 HK$'m	2019 HK$'m
Repossessed assets	**23**	7
Precious metals	**10,697**	9,261
Intangible assets	**1,862**	–
Reinsurance assets	**55,672**	48,614
Accounts receivable and prepayments	**38,481**	33,148
	106,735	91,030

31. Hong Kong SAR currency notes in circulation

The Hong Kong SAR currency notes in circulation are secured by deposit of funds in respect of which the Hong Kong SAR Government certificates of indebtedness are held.

32. Financial liabilities at fair value through profit or loss

	2020 HK$'m	2019 HK$'m
Trading liabilities		
– Short positions in Exchange Fund Bills and Notes	**20,336**	19,206

33. Deposits from customers

	2020 HK$'m	2019 HK$'m
Demand deposits and current accounts		
– Corporate	**222,286**	138,646
– Personal	**87,940**	68,367
	310,226	207,013
Savings deposits		
– Corporate	**499,740**	400,903
– Personal	**649,295**	499,106
	1,149,035	900,009
Time, call and notice deposits		
– Corporate	**454,852**	517,080
– Personal	**269,596**	385,171
	724,448	902,251
	2,183,709	2,009,273

34. Debt securities and certificates of deposit in issue

	2020 HK$'m	2019 HK$'m
At amortised cost		
– Certificates of deposit	**233**	116
– Other debt securities	**193**	–
	426	116

35. Other accounts and provisions

	2020 HK$'m	2019 HK$'m
Other accounts payable	**68,682**	78,197
Lease liabilities	**1,710**	1,850
Impairment allowances on loan commitments and financial guarantee contracts		
– Stage 1	**594**	535
– Stage 2	**44**	22
– Stage 3	**20**	20
	71,050	80,624

36. Deferred taxation

Deferred tax is recognised in respect of the temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements and unused tax credits in accordance with HKAS 12 "Income Taxes".

The major components of deferred tax (assets)/liabilities recorded in the balance sheet, and the movements during the year are as follows:

	2020					
	Accelerated tax depreciation HK$'m	Property revaluation HK$'m	Losses HK$'m	Impairment allowances HK$'m	Others HK$'m	Total HK$'m
At 1 January 2020	**756**	**6,997**	**–**	**(804)**	**(532)**	**6,417**
Charged/(credited) to income statement (Note 17)	**41**	**(140)**	**(15)**	**(349)**	**(48)**	**(511)**
(Credited)/charged to other comprehensive income	**–**	**(297)**	**–**	**–**	**253**	**(44)**
Release upon disposal of equity instruments at fair value through other comprehensive income	**–**	**–**	**(31)**	**–**	**32**	**1**
Release upon redemption of financial liabilities designated at fair value through profit or loss	**–**	**–**	**–**	**–**	**6**	**6**
At 31 December 2020	**797**	**6,560**	**(46)**	**(1,153)**	**(289)**	**5,869**

	2019					
	Accelerated tax depreciation HK$'m	Property revaluation HK$'m	Losses HK$'m	Impairment allowances HK$'m	Others HK$'m	Total HK$'m
At 1 January 2019	706	6,991	–	(724)	(1,478)	5,495
Charged/(credited) to income statement (Note 17)	50	(127)	–	(80)	12	(145)
Charged to other comprehensive income	–	133	–	–	927	1,060
Release upon disposal of equity instruments at fair value through other comprehensive income	–	–	–	–	7	7
At 31 December 2019	756	6,997	–	(804)	(532)	6,417

36. Deferred taxation (continued)

Deferred tax assets and liabilities are offset on an individual entity basis when there is a legal right to set off current tax assets against current tax liabilities and when the deferred taxation relates to the same authority. The following amounts, determined after appropriate offsetting, are shown in the balance sheet:

	2020 HK$'m	2019 HK$'m
Deferred tax assets	**(95)**	(63)
Deferred tax liabilities	**5,964**	6,480
	5,869	6,417

	2020 HK$'m	2019 HK$'m
Deferred tax assets to be recovered after more than twelve months	**(112)**	(43)
Deferred tax liabilities to be settled after more than twelve months	**6,244**	6,971
	6,132	6,928

As at 31 December 2020, the Group has no unrecognised deferred tax assets in respect of tax losses (2019: the Group has not recognised deferred tax assets in respect of tax losses amounting to HK$9 million). All of the amount for the Group has no expiry date under the current tax legislation in different countries/regions.

37. Insurance contract liabilities

	2020 HK$'m	2019 HK$'m
At 1 January	**117,269**	104,723
Benefits paid	**(13,288)**	(15,373)
Claims incurred and movement in liabilities	**35,523**	27,919
At 31 December	**139,504**	117,269

The insurance contract liabilities that are covered by reinsurance arrangements amounted to HK$45,615 million (2019: HK$40,130 million) and the associated reinsurance assets of HK$55,672 million (2019: HK$48,614 million) are included in "Other assets" (Note 30).

38. Subordinated liabilities

	2020 HK$'m	2019 HK$'m
Subordinated notes		
– designated at fair value through profit or loss	–	12,954

Listed subordinated notes with aggregate principal amount of USD1,623 million, interest rate at 5.55% per annum payable semi-annually, has been fully repaid in February 2020. Amounts qualified as Tier 2 capital instruments for regulatory purposes are shown in Note 4.5(B). The carrying amount of subordinated notes designated at fair value through profit or loss as at 31 December 2019 was more than the amount that the Group would be contractually required to pay at maturity to the holders by HK$41 million.

39. Share capital

	2020 HK$'m	2019 HK$'m
Issued and fully paid:		
10,572,780,266 ordinary shares	**52,864**	52,864

40. Other equity instruments

	2020 HK$'m	2019 HK$'m
Undated non-cumulative subordinated Additional Tier 1 capital securities	**23,476**	23,476

In September 2018, BOCHK issued USD3,000 million undated non-cumulative subordinated Additional Tier 1 capital securities. The capital securities are perpetual securities in respect of which there is no fixed redemption date and are not callable within the first 5 years. They have an initial rate of distribution of 5.90% per annum payable semi-annually which may be cancelled at the sole discretion of BOCHK. Dividend paid to other equity instrument holders in 2020 amounted to HK$1,376 million (2019: HK$1,390 million).

41. Notes to consolidated cash flow statement

(a) Reconciliation of operating profit to operating cash inflow/(outflow) before taxation

	2020 HK$'m	2019 HK$'m
Operating profit	**35,420**	39,755
Depreciation	**3,040**	2,881
Net charge of impairment allowances	**2,707**	2,022
Unwind of discount on impairment allowances	**(8)**	(4)
Advances written off net of recoveries	**(425)**	(249)
Interest expense on lease liabilities	**54**	55
Change in subordinated liabilities	**–**	370
Change in balances and placements with banks and other financial institutions with original maturity over three months	**3,800**	9,276
Change in financial assets at fair value through profit or loss	**21,655**	(16,657)
Change in derivative financial instruments	**5,563**	5,926
Change in advances and other accounts	**(89,591)**	(131,579)
Change in investment in securities	**(49,999)**	(201,861)
Change in other assets	**(13,863)**	(12,466)
Change in deposits and balances from banks and other financial institutions	**58,606**	(109,091)
Change in financial liabilities at fair value through profit or loss	**1,130**	3,671
Change in deposits from customers	**174,436**	113,477
Change in debt securities and certificates of deposit in issue	**310**	(9,337)
Change in other accounts and provisions	**(9,527)**	19,025
Change in insurance contract liabilities	**22,235**	12,546
Effect of changes in exchange rates	**(13,269)**	4,264
Operating cash inflow/(outflow) before taxation	**152,274**	(267,976)
Cash flows from operating activities included		
– interest received	**51,764**	67,383
– interest paid	**17,674**	26,168
– dividend received	**235**	256

41. Notes to consolidated cash flow statement (continued)

(b) Reconciliation of liabilities arising from financing activities

	2020 HK$'m	2019 HK$'m
Subordinated liabilities		
At 1 January	**12,954**	13,246
Cash flows:		
Payment for redemption of subordinated liabilities	**(12,603)**	–
Interest paid for subordinated liabilities	**(350)**	(707)
	(12,953)	(707)
Non-cash changes:		
Change in fair value of own credit risk (credited)/charged to other comprehensive income	**(1)**	45
Exchange difference	**(39)**	(72)
Other changes	**39**	442
At 31 December	**–**	12,954

	2020 HK$'m	2019 HK$'m
Lease liabilities		
At 1 January	**1,850**	1,743
Cash flows:		
Payment of lease liabilities	**(733)**	(644)
Non-cash changes:		
Additions	**549**	696
Disposal	**(10)**	–
Other changes	**54**	55
At 31 December	**1,710**	1,850

41. Notes to consolidated cash flow statement (continued)

(c) Analysis of the balances of cash and cash equivalents

	2020 HK$'m	2019 HK$'m
Cash and balances and placements with banks and other financial institutions with original maturity within three months	**423,563**	322,876
Treasury bills, certificates of deposit and other debt instruments with original maturity within three months		
– financial assets at fair value through profit or loss	**3,303**	6,627
– investment in securities	**29,192**	2,149
	456,058	331,652

42. Contingent liabilities and commitments

The following is a summary of the contractual amounts of each significant class of contingent liability and commitment and the aggregate credit risk-weighted amount and is prepared with reference to the completion instructions for the HKMA return of capital adequacy ratio.

	2020 HK$'m	2019 HK$'m
Direct credit substitutes	**2,487**	5,455
Transaction-related contingencies	**30,215**	29,080
Trade-related contingencies	**27,830**	27,865
Commitments that are unconditionally cancellable without prior notice	**511,975**	447,055
Other commitments with an original maturity of		
– up to one year	**20,416**	13,772
– over one year	**173,475**	160,575
	766,398	683,802
Credit risk-weighted amount	**87,517**	76,911

The credit risk-weighted amount is calculated in accordance with the Banking (Capital) Rules. The amount is dependent upon the status of the counterparty and the maturity characteristics of each type of contract.

43. Capital commitments

The Group has the following outstanding capital commitments not provided for in the financial statements:

	2020 HK$'m	2019 HK$'m
Authorised and contracted for but not provided for	**274**	188
Authorised but not contracted for	**70**	72
	344	260

The above capital commitments mainly relate to commitments to purchase computer equipment and software, and to renovate the Group's premises.

44. Operating lease commitments

As lessor

The Group has contracted with tenants for the following future minimum lease receivables under non-cancellable operating leases:

	2020 HK$'m	2019 HK$'m
Properties and equipment		
– Not later than one year	**520**	552
– One to two years	**313**	389
– Two to three years	**101**	187
– Three to four years	**14**	33
– Four to five years	**10**	1
– Later than five years	**–**	–
	958	1,162

The Group leases its investment properties under operating lease arrangements, with leases typically for a period from one to three years. The terms of the leases generally require the tenants to pay security deposits and provide for rent adjustments according to the prevailing market conditions upon the lease renewal.

45. Litigation

The Group has been served a number of claims and counterclaims by various independent parties. These claims and counterclaims are in relation to the normal commercial activities of the Group.

No material provision was made against these claims and counterclaims because the directors believe that the Group has meritorious defences against the claimants or the amounts involved in these claims are not expected to be material.

46. Segmental reporting

The Group manages the business mainly from a business segment perspective and over 90% of the Group's revenues, profits before tax and assets are derived from Hong Kong. Currently, four operating segments are identified: Personal Banking, Corporate Banking, Treasury and Insurance. The classification of the Group's operating segments is based on customer segment and product type, which is aligned with the RPC (relationship, product and channel) management model of the Group.

Both Personal Banking and Corporate Banking provide general banking services including various deposit products, overdrafts, loans, credit cards, trade related products and other credit facilities, investment and insurance products, and foreign currency and derivative products. Personal Banking mainly serves retail customers and small enterprises, while Corporate Banking mainly deals with corporate customers. Treasury manages the funding and liquidity, and the interest rate and foreign exchange positions of the Group in addition to proprietary trades. The Insurance segment represents business mainly relating to life insurance products, including individual life insurance and group life insurance products. "Others" mainly represents the Group's holdings of premises, investment properties, equity investments, certain interests in associates and joint ventures and the businesses of the Southeast Asian entities.

Measurement of segment assets, liabilities, income, expenses, results and capital expenditure is based on the Group's accounting policies. The segment information includes items directly attributable to a segment as well as those that can be allocated on a reasonable basis. Inter-segment funding is charged according to the internal funds transfer pricing mechanism of the Group, which is primarily based on market rates with the consideration of specific features of the product.

As the Group derives a majority of revenue from interest and the senior management relies primarily on net interest income in managing the business, interest income and expense for all reportable segments are presented on a net basis. Under the same consideration, insurance premium income and insurance benefits and claims are also presented on a net basis.

46. Segmental reporting (continued)

	Personal Banking HK$'m	Corporate Banking HK$'m	Treasury HK$'m	Insurance HK$'m	Others HK$'m	Subtotal HK$'m	Eliminations HK$'m	Consolidated HK$'m
Year ended 31 December 2020								
Net interest income/(expense)								
– External	2,014	14,846	12,623	3,437	1,818	34,738	–	34,738
– Inter-segment	10,955	(1,352)	(8,840)	(13)	(750)	–	–	–
	12,969	13,494	3,783	3,424	1,068	34,738	–	34,738
Net fee and commission income/(expense)	7,092	3,522	253	(626)	1,262	11,503	(661)	10,842
Net insurance premium income	–	–	–	18,482	–	18,482	(22)	18,460
Net trading gain	1,004	1,311	2,012	259	435	5,021	153	5,174
Net gain/(loss) on other financial instruments at fair value through profit or loss	–	–	208	1,743	(3)	1,948	11	1,959
Net gain on other financial assets	–	7	4,376	189	–	4,572	–	4,572
Other operating income	18	5	80	123	2,055	2,281	(1,385)	896
Total operating income	21,083	18,339	10,712	23,594	4,817	78,545	(1,904)	76,641
Net insurance benefits and claims and movement in liabilities	–	–	–	(22,167)	–	(22,167)	–	(22,167)
Net operating income before impairment allowances	21,083	18,339	10,712	1,427	4,817	56,378	(1,904)	54,474
Net charge of impairment allowances	(421)	(1,877)	(87)	(36)	(286)	(2,707)	–	(2,707)
Net operating income	20,662	16,462	10,625	1,391	4,531	53,671	(1,904)	51,767
Operating expenses	(9,684)	(3,427)	(1,269)	(537)	(3,334)	(18,251)	1,904	(16,347)
Operating profit	10,978	13,035	9,356	854	1,197	35,420	–	35,420
Net loss from disposal of/fair value adjustments on investment properties	–	–	–	–	(1,622)	(1,622)	–	(1,622)
Net loss from disposal/revaluation of properties, plant and equipment	(3)	–	–	–	(60)	(63)	–	(63)
Share of results after tax of associates and joint ventures	42	–	5	–	(199)	(152)	–	(152)
Profit/(loss) before taxation	11,017	13,035	9,361	854	(684)	33,583	–	33,583
At 31 December 2020								
ASSETS								
Segment assets	491,213	985,638	1,538,239	179,865	159,589	3,354,544	(35,048)	3,319,496
Interests in associates and joint ventures	603	–	9	–	873	1,485	–	1,485
	491,816	985,638	1,538,248	179,865	160,462	3,356,029	(35,048)	3,320,981
LIABILITIES								
Segment liabilities	1,159,255	1,013,145	601,497	168,463	94,014	3,036,374	(35,048)	3,001,326
Year ended 31 December 2020								
Other information								
Capital expenditure	29	8	1	52	1,803	1,893	–	1,893
Depreciation	1,274	281	107	64	1,349	3,075	(35)	3,040
Amortisation of securities	–	–	406	162	170	738	–	738

46. Segmental reporting (continued)

	Personal Banking HK$'m	Corporate Banking HK$'m	Treasury HK$'m	Insurance HK$'m	Others HK$'m	Subtotal HK$'m	Eliminations HK$'m	Consolidated HK$'m
Year ended 31 December 2019								
Net interest income/(expense)								
- External	7	16,406	18,551	3,265	2,294	40,523	–	40,523
- Inter-segment	13,300	(1,665)	(9,995)	(18)	(1,622)	–	–	–
	13,307	14,741	8,556	3,247	672	40,523	–	40,523
Net fee and commission income/(expense)	7,077	3,939	457	(1,322)	1,166	11,317	(398)	10,919
Net insurance premium income	–	–	–	18,433	–	18,433	(21)	18,412
Net trading gain/(loss)	789	1,389	3,098	(911)	371	4,736	64	4,800
Net (loss)/gain on other financial instruments at fair value through profit or loss	(1)	–	346	2,889	1	3,235	8	3,243
Net gain on other financial assets	–	17	754	53	–	824	–	824
Other operating income	101	2	45	126	2,083	2,357	(1,342)	1,015
Total operating income	21,273	20,088	13,256	22,515	4,293	81,425	(1,689)	79,736
Net insurance benefits and claims and movement in liabilities	–	–	–	(21,292)	–	(21,292)	–	(21,292)
Net operating income before impairment allowances	21,273	20,088	13,256	1,223	4,293	60,133	(1,689)	58,444
Net charge of impairment allowances	(351)	(1,385)	(9)	(7)	(270)	(2,022)	–	(2,022)
Net operating income	20,922	18,703	13,247	1,216	4,023	58,111	(1,689)	56,422
Operating expenses	(9,820)	(3,394)	(1,186)	(515)	(3,441)	(18,356)	1,689	(16,667)
Operating profit	11,102	15,309	12,061	701	582	39,755	–	39,755
Net gain from disposal of/fair value adjustments on investment properties	–	–	–	–	282	282	–	282
Net (loss)/gain from disposal/revaluation of properties, plant and equipment	(5)	–	–	–	4	(1)	–	(1)
Share of results after tax of associates and joint ventures	137	–	3	–	(88)	52	–	52
Profit before taxation	11,234	15,309	12,064	701	780	40,088	–	40,088
At 31 December 2019								
ASSETS								
Segment assets	442,694	947,164	1,354,356	153,116	155,953	3,053,283	(28,859)	3,024,424
Interests in associates and joint ventures	559	–	1	–	1,072	1,632	–	1,632
	443,253	947,164	1,354,357	153,116	157,025	3,054,915	(28,859)	3,026,056
LIABILITIES								
Segment liabilities	1,079,821	907,381	521,210	143,011	96,000	2,747,423	(28,859)	2,718,564
Year ended 31 December 2019								
Other information								
Capital expenditure	48	4	2	45	2,263	2,362	–	2,362
Depreciation	1,205	233	102	57	1,284	2,881	–	2,881
Amortisation of securities	–	–	2,547	59	(33)	2,573	–	2,573

47. Offsetting financial instruments

The following tables present details of the Group's financial instruments subject to offsetting, enforceable master netting arrangements and similar agreements.

	2020					
				Related amounts not set off in the balance sheet		
	Gross amounts of recognised financial assets HK$'m	Gross amounts of recognised financial liabilities set off in the balance sheet HK$'m	Net amounts of financial assets presented in the balance sheet HK$'m	Financial instruments HK$'m	Cash collateral received HK$'m	Net amount HK$'m
Assets						
Derivative financial instruments	35,570	–	35,570	(28,032)	(3,314)	4,224
Reverse repurchase agreements	1,284	–	1,284	(1,284)	–	–
Securities borrowing agreements	3,300	–	3,300	(3,300)	–	–
Other assets	19,737	(14,300)	5,437	–	–	5,437
	59,891	(14,300)	45,591	(32,616)	(3,314)	9,661

	2020					
				Related amounts not set off in the balance sheet		
	Gross amounts of recognised financial liabilities HK$'m	Gross amounts of recognised financial assets set off in the balance sheet HK$'m	Net amounts of financial liabilities presented in the balance sheet HK$'m	Financial instruments HK$'m	Cash collateral pledged HK$'m	Net amount HK$'m
Liabilities						
Derivative financial instruments	48,805	–	48,805	(28,032)	(16,858)	3,915
Repurchase agreements	210	–	210	(210)	–	–
Other liabilities	15,454	(14,300)	1,154	–	–	1,154
	64,469	(14,300)	50,169	(28,242)	(16,858)	5,069

47. Offsetting financial instruments (continued)

	2019					
				Related amounts not set off in the balance sheet		
	Gross amounts of recognised financial assets HK$'m	Gross amounts of recognised financial liabilities set off in the balance sheet HK$'m	Net amounts of financial assets presented in the balance sheet HK$'m	Financial instruments HK$'m	Cash collateral received HK$'m	Net amount HK$'m
Assets						
Derivative financial instruments	30,995	–	30,995	(22,120)	(2,271)	6,604
Reverse repurchase agreements	3,138	–	3,138	(3,138)	–	–
Securities borrowing agreements	2,900	–	2,900	(2,900)	–	–
Other assets	12,622	(11,547)	1,075	–	–	1,075
	49,655	(11,547)	38,108	(28,158)	(2,271)	7,679

	2019					
				Related amounts not set off in the balance sheet		
	Gross amounts of recognised financial liabilities HK$'m	Gross amounts of recognised financial assets set off in the balance sheet HK$'m	Net amounts of financial liabilities presented in the balance sheet HK$'m	Financial instruments HK$'m	Cash collateral pledged HK$'m	Net amount HK$'m
Liabilities						
Derivative financial instruments	32,748	–	32,748	(22,120)	(7,159)	3,469
Repurchase agreements	562	–	562	(562)	–	–
Other liabilities	13,427	(11,547)	1,880	–	–	1,880
	46,737	(11,547)	35,190	(22,682)	(7,159)	5,349

For master netting agreements of OTC derivative, sale and repurchase and securities lending and borrowing transactions entered into by the Group, related amounts with the same counterparty can be offset if an event of default or other predetermined events occur.

48. Assets pledged as security

As at 31 December 2020, the liabilities of the Group amounting to HK$15,293 million (2019: HK$15,862 million) were secured by assets deposited with central depositories to facilitate settlement operations. In addition, the liabilities of the Group amounting to HK$210 million (2019: HK$60,562 million) were secured by debt securities related to sale and repurchase arrangements. The amount of assets pledged by the Group to secure these liabilities was HK$15,570 million (2019: HK$76,656 million) mainly included in "Financial assets at fair value through profit or loss" and "Investment in securities".

49. Transfers of financial assets

The transferred financial assets of the Group below that do not qualify for derecognition are debt securities held by counterparties as collateral under sale and repurchase agreements.

	2020		2019	
	Carrying amount of transferred assets HK$'m	**Carrying amount of associated liabilities HK$'m**	Carrying amount of transferred assets HK$'m	Carrying amount of associated liabilities HK$'m
Repurchase agreements	**231**	**210**	590	562

50. Loans to directors

Particulars of loans made to directors of the Company pursuant to section 383 of the Hong Kong Companies Ordinance and Part 3 of the Companies (Disclosure of Information about Benefits of Directors) Regulation are as follows:

	2020 HK$'m	2019 HK$'m
Aggregate amount of relevant transactions outstanding at year end	**–**	–
Maximum aggregate amount of relevant transactions outstanding during the year	**–**	–

51. Significant related party transactions

The Group is subject to the control of the State Council of the PRC Government through China Investment Corporation ("CIC"), its wholly-owned subsidiary Central Huijin Investment Ltd. ("Central Huijin"), and BOC in which Central Huijin has controlling equity interests.

51. Significant related party transactions (continued)

(a) Transactions with the parent companies and the other companies controlled by the parent companies

General information of the parent companies:

The Group is controlled by BOC. Central Huijin is the controlling entity of BOC, and it is a wholly-owned subsidiary of CIC which is a wholly state-owned company engaging in foreign currency investment management.

Central Huijin has controlling equity interests in certain other entities in the PRC.

The Group enters into banking and other transactions with these entities in the normal course of business which include loans, investment securities, money market and reinsurance transactions.

The majority of transactions with BOC arise from money market activities. As at 31 December 2020, the related aggregate amounts due from and to BOC of the Group were HK$188,781 million (2019: HK$98,066 million) and HK$110,389 million (2019: HK$56,995 million) respectively. The aggregate amounts of income and expenses of the Group arising from these transactions with BOC for the year ended 31 December 2020 were HK$1,037 million (2019: HK$1,971 million) and HK$157 million (2019: HK$478 million) respectively. The related party transactions above constitute connected transactions as defined in Chapter 14A of the Listing Rules but under exemption from its disclosure requirement.

Transactions with other companies controlled by BOC are not considered material.

(b) Transactions with government authorities, agencies, affiliates and other state controlled entities

The Group is subject to the control of the State Council of the PRC Government through CIC and Central Huijin, which also directly or indirectly controls a significant number of entities through its government authorities, agencies, affiliates and other state controlled entities. The Group enters into banking transactions with government authorities, agencies, affiliates and other state controlled entities in the normal course of business at commercial terms.

These transactions include, but are not limited to, the following:

- lending, provision of credits and guarantees, and deposit taking;
- inter-bank balance taking and placing;
- sales, purchases, underwriting and redemption of bonds issued by other state controlled entities;
- rendering of foreign exchange, remittance and investment related services;
- provision of fiduciary activities; and
- purchase of utilities, transport, telecommunication and postage services.

51. Significant related party transactions (continued)

(c) Summary of transactions entered into during the ordinary course of business with associates, joint ventures and other related parties

The aggregate income/expenses and balances arising from related party transactions with associates, joint ventures and other related parties of the Group are summarised as follows:

	2020 HK$'m	2019 HK$'m
Income statement items		
Associates and joint ventures		
– Fee and commission income	**43**	4
– Interest expenses	**1**	17
– Fee and commission expenses	**–**	6
– Other operating expenses	**80**	84
Other related parties		
– Fee and commission income	**12**	11
Balance sheet items		
Associates and joint ventures		
– Other assets	**11**	–
– Deposits and balances from banks and other financial institutions	**38**	96
– Deposits from customers	**124**	–
– Other accounts and provisions	**7**	1

The related party transactions in respect of the other operating expenses arising from associates and joint ventures above constitute connected transactions as defined in Chapter 14A of the Listing Rules and the required disclosures are provided in "Connected transactions" on pages 291 to 292.

(d) Key management personnel

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Group, directly or indirectly, including directors and senior management. The Group accepts deposits from and grants loans and credit facilities to key management personnel in the ordinary course of business. During both the current and prior years, no material transaction was conducted with key management personnel of the Company and its holding companies, as well as parties related to them.

The compensation of key management personnel for the year ended 31 December is detailed as follows:

	2020 HK$'m	2019 HK$'m
Salaries and other short-term employee benefits	**55**	53

52. International claims

The below analysis is prepared with reference to the completion instructions for the HKMA return of international banking statistics. International claims are exposures to counterparties on which the ultimate risk lies based on the locations of the counterparties after taking into account the transfer of risk, and represent the sum of cross-border claims in all currencies and local claims in foreign currencies. For a claim guaranteed by a party situated in a location different from the counterparty, the risk will be transferred to the location of the guarantor. For a claim on an overseas branch of a bank whose head office is located in another location, the risk will be transferred to the location where its head office is located.

Claims on individual countries/regions, after risk transfer, amounting to 10% or more of the aggregate international claims of the Group are shown as follows:

	2020				
			Non-bank private sector		
	Banks HK$'m	**Official sector HK$'m**	**Non-bank financial institutions HK$'m**	**Non-financial private sector HK$'m**	**Total HK$'m**
Chinese Mainland	**384,517**	**134,057**	**24,283**	**151,545**	**694,402**
Hong Kong	**7,263**	**185**	**46,394**	**341,442**	**395,284**
United States	**10,575**	**136,361**	**16,957**	**21,578**	**185,471**

	2019				
			Non-bank private sector		
	Banks HK$'m	Official sector HK$'m	Non-bank financial institutions HK$'m	Non-financial private sector HK$'m	Total HK$'m
Chinese Mainland	290,330	110,229	21,988	154,714	577,261
Hong Kong	6,842	96	44,230	362,148	413,316
United States	17,219	106,473	22,908	22,146	168,746

53. Non-bank Mainland exposures

The analysis of non-bank Mainland exposures is based on the categories of non-bank counterparties and the types of direct exposures with reference to the completion instructions for the HKMA return of Mainland activities, which includes the Mainland exposures extended by BOCHK's Hong Kong office only.

		2020		
	Items in the HKMA return	On-balance sheet exposure HK$'m	Off-balance sheet exposure HK$'m	Total exposure HK$'m
Central government, central government-owned entities and their subsidiaries and joint ventures	1	**349,405**	**36,110**	**385,515**
Local governments, local government-owned entities and their subsidiaries and joint ventures	2	**69,104**	**11,230**	**80,334**
PRC nationals residing in Mainland or other entities incorporated in Mainland and their subsidiaries and joint ventures	3	**109,921**	**23,386**	**133,307**
Other entities of central government not reported in item 1 above	4	**32,628**	**4,765**	**37,393**
Other entities of local governments not reported in item 2 above	5	**1,002**	**–**	**1,002**
PRC nationals residing outside Mainland or entities incorporated outside Mainland where the credit is granted for use in Mainland	6	**83,664**	**8,477**	**92,141**
Other counterparties where the exposures are considered to be non-bank Mainland exposures	7	**1,849**	**10**	**1,859**
Total	8	**647,573**	**83,978**	**731,551**
Total assets after provision	9	**3,067,224**		
On-balance sheet exposures as percentage of total assets	10	**21.11%**		

53. Non-bank Mainland exposures (continued)

	2019			
	Items in the HKMA return	On-balance sheet exposure HK$'m	Off-balance sheet exposure HK$'m	Total exposure HK$'m
Central government, central government-owned entities and their subsidiaries and joint ventures	1	310,795	43,519	354,314
Local governments, local government-owned entities and their subsidiaries and joint ventures	2	65,697	13,247	78,944
PRC nationals residing in Mainland or other entities incorporated in Mainland and their subsidiaries and joint ventures	3	102,300	21,580	123,880
Other entities of central government not reported in item 1 above	4	32,086	3,735	35,821
Other entities of local governments not reported in item 2 above	5	500	2	502
PRC nationals residing outside Mainland or entities incorporated outside Mainland where the credit is granted for use in Mainland	6	80,635	13,988	94,623
Other counterparties where the exposures are considered to be non-bank Mainland exposures	7	1,770	–	1,770
Total	8	593,783	96,071	689,854
Total assets after provision	9	2,800,915		
On-balance sheet exposures as percentage of total assets	10	21.20%		

54. Balance sheet and statement of changes in equity

(a) Balance sheet

As at 31 December	2020 HK$'m	2019 HK$'m
ASSETS		
Bank balances with a subsidiary	**1,474**	1,754
Investment in securities	**1,412**	1,483
Investment in subsidiaries	**55,322**	55,322
Amounts due from a subsidiary	**7,403**	10,114
Investment in associates and joint ventures	**1,100**	1,100
Other assets	**2**	4
Total assets	**66,713**	69,777
LIABILITIES		
Amounts due to a subsidiary	**2**	3
Total liabilities	**2**	3
EQUITY		
Share capital	**52,864**	52,864
Reserves	**13,847**	16,910
Total equity	**66,711**	69,774
Total liabilities and equity	**66,713**	69,777

Approved by the Board of Directors on 30 March 2021 and signed on behalf of the Board by:

LIU Liange
Director

SUN Yu
Director

54. Balance sheet and statement of changes in equity (continued)

(b) Statement of changes in equity

		Reserves		
	Share capital HK$'m	Reserve for fair value changes HK$'m	Retained earnings HK$'m	Total equity HK$'m
At 1 January 2019	52,864	(1,863)	14,330	65,331
Profit for the year	–	–	20,604	20,604
Other comprehensive income:				
Equity instruments at fair value through other comprehensive income	–	(640)	–	(640)
Total comprehensive income	–	(640)	20,604	19,964
Dividends	–	–	(15,521)	(15,521)
At 31 December 2019	52,864	(2,503)	19,413	69,774
At 1 January 2020	**52,864**	**(2,503)**	**19,413**	**69,774**
Profit for the year	**–**	**–**	**12,222**	**12,222**
Other comprehensive income:				
Equity instruments at fair value through other comprehensive income	**–**	**(71)**	**–**	**(71)**
Total comprehensive income	**–**	**(71)**	**12,222**	**12,151**
Dividends	**–**	**–**	**(15,214)**	**(15,214)**
At 31 December 2020	**52,864**	**(2,574)**	**16,421**	**66,711**

55. Principal subsidiaries

The particulars of all direct and indirect subsidiaries of the Company are set out in "Appendix – Subsidiaries of the Company". The following is a list of principal subsidiaries as at 31 December 2020:

Name	Place of incorporation and operation	Issued share capital	Interest held	Principal activities
Bank of China (Hong Kong) Limited	Hong Kong	HK$43,042,840,858	*100%	Banking business
BOC Group Life Assurance Company Limited	Hong Kong	HK$3,538,000,000	*51%	Life insurance business
BOC Credit Card (International) Limited	Hong Kong	HK$565,000,000	100%	Credit card services
Bank of China (Malaysia) Berhad	Malaysia	RM760,518,480	100%	Banking business
Bank of China (Thai) Public Company Limited	Thailand	Baht10,000,000,000	100%	Banking business
Po Sang Securities and Futures Limited	Hong Kong	HK$335,000,000	100%	Securities and futures brokerage

* Shares held directly by the Company

The particulars of a subsidiary with significant non-controlling interests are as follows:

BOC Group Life Assurance Company Limited

	2020	2019
Proportion of ownership interests and voting rights held by non-controlling interests	**49%**	49%

	2020 HK$'m	2019 HK$'m
Profit attributable to non-controlling interests	**424**	332
Accumulated non-controlling interests	**5,587**	4,951
Summarised financial information:		
– total assets	**179,865**	153,116
– total liabilities	**168,463**	143,011
– profit for the year	**866**	678
– total comprehensive income for the year	**1,349**	1,853

56. Ultimate holding company

The Group is subject to the control of the State Council of the PRC Government through China Investment Corporation, its wholly-owned subsidiary Central Huijin Investment Ltd. ("Central Huijin"), and BOC in which Central Huijin has controlling equity interests.

57. Approval of financial statements

The financial statements were approved and authorised for issue by the Board of Directors on 30 March 2021.