

The Exchange Fund

- Report of the Director of Audit
- Exchange Fund Financial Statements

Report of the Director of Audit



Audit Commission

The Government of the Hong Kong Special Administrative Region

Independent Auditor's Report To the Financial Secretary

Opinion

I certify that I have audited the financial statements of the Exchange Fund and its subsidiaries ("the Group") set out on pages 179 to 281, which comprise the balance sheets of the Exchange Fund and of the Group as at 31 December 2022, and their income and expenditure accounts, statements of comprehensive income, statements of changes in equity and statements of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In my opinion, the financial statements give a true and fair view of the financial position of the Fund and of the Group as at 31 December 2022, and of their financial performance and cash flows for the year then ended in accordance with Hong Kong Financial Reporting Standards ("HKFRSs") issued by the Hong Kong Institute of Certified Public Accountants ("HKICPA") and have been properly prepared in accordance with the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance (Cap. 66).

Basis for opinion

I conducted my audit in accordance with the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance and the Audit Commission auditing standards. My responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of my report. I am independent of the Group in accordance with those standards, and I have fulfilled my other ethical responsibilities in accordance with those standards. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key audit matters

Key audit matters are those matters that, in my professional judgment, were of most significance in my audit of the financial statements for the year ended 31 December 2022. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Report of the Director of Audit (continued)

Key audit matter	How the matter was addressed in my audit
Valuation of financial assets and financial liabilities at fair value <i>Refer to notes 2.5, 2.6 and 38.1 to the financial statements.</i>	
<p>As at 31 December 2022, the Group had financial assets totalling HK\$3,836,182 million and financial liabilities totalling HK\$1,207,498 million valued at fair value.</p> <p>For 87% of these financial assets and all these financial liabilities, their fair values were quoted prices in active markets for identical assets or liabilities (Level 1 inputs) or were estimated using valuation techniques with inputs based on observable market data (Level 2 inputs).</p> <p>For the remaining 13% of these financial assets, their fair values were estimated using valuation techniques with inputs not based on observable market data (Level 3 inputs). Such financial assets totalled HK\$487,694 million, including mainly unlisted investment funds.</p> <p>Given the substantial amount and the estimations involved, valuation of financial assets and financial liabilities at fair value was a key audit matter.</p>	<p>The audit procedures on valuation of financial assets and financial liabilities at fair value included:</p> <ul style="list-style-type: none"> – obtaining an understanding of the procedures, including relevant controls, for valuing different categories of financial assets and financial liabilities; – evaluating and testing the controls, including relevant application controls of the computer systems; – obtaining external confirmations on the valuation, existence, rights and obligations and completeness of the financial assets and financial liabilities; – where quoted market prices were used, verifying the prices to independent sources; – where valuation techniques with inputs based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions, and verifying the inputs to independent sources; and – where valuation techniques with inputs not based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions and inputs.
Valuation of investment properties at fair value <i>Refer to notes 2.11, 18 and 19 to the financial statements.</i>	
<p>The Group's investment properties were stated at their fair values, totalling HK\$23,394 million as at 31 December 2022. The Group also had interests in four associates and twenty two joint ventures totalling HK\$39,631 million, whose principal activities were holding overseas investment properties. The fair values of these investment properties, whether held by the Group directly or by associates or joint ventures, were mainly determined based on valuations by independent professional valuers. Such valuations involved significant judgments and estimates, including the valuation methodologies and the assumptions used.</p>	<p>The audit procedures on valuation of investment properties at fair value included:</p> <ul style="list-style-type: none"> – obtaining and reviewing the valuation reports of investment properties held by the Group directly or by associates or joint ventures, and verifying that the fair values were based on the valuations stated in the valuation reports; – assessing the independence and qualifications of the valuers; and – evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions and inputs.

Report of the Director of Audit (continued)

Other information

The Monetary Authority is responsible for the other information. The other information comprises all the information included in the 2022 Annual Report of the Hong Kong Monetary Authority, other than the financial statements and my auditor's report thereon.

My opinion on the financial statements does not cover the other information and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

Responsibilities of the Monetary Authority and the Audit Sub-Committee of the Exchange Fund Advisory Committee for the financial statements

The Monetary Authority is responsible for the preparation of the financial statements that give a true and fair view in accordance with HKFRSs issued by the HKICPA and the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance, and for such internal control as the Monetary Authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Monetary Authority is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

The Audit Sub-Committee of the Exchange Fund Advisory Committee is responsible for overseeing the Group's financial reporting process.

Auditor's responsibilities for the audit of the financial statements

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Audit Commission auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the Audit Commission auditing standards, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;

Report of the Director of Audit (continued)

- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Monetary Authority;
- conclude on the appropriateness of the Monetary Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern;
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation; and
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with the Audit Sub-Committee of the Exchange Fund Advisory Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the Audit Sub-Committee of the Exchange Fund Advisory Committee with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with the Audit Sub-Committee of the Exchange Fund Advisory Committee, I determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Prof. LAM Chi Yuen Nelson

Director of Audit

11 April 2023

Audit Commission

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Hong Kong

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Exchange Fund – Income and Expenditure Account

for the year ended 31 December 2022

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2022	2021	2022	2021
INCOME					
Interest income		53,419	21,710	49,890	20,159
Dividend income		17,439	20,371	13,367	13,983
(Loss)/Income from investment properties		(733)	1,158	–	–
Net realised and unrealised (losses)/gains		(230,761)	135,805	(205,195)	30,464
Net exchange (loss)/gain		(42,479)	15,951	(40,045)	16,817
Investment (losses)/income	4(a)	(203,115)	194,995	(181,983)	81,423
Bank licence fees		119	124	119	124
Net premiums earned	5	2,957	2,872	–	–
Other income		614	623	87	75
TOTAL INCOME		(199,425)	198,614	(181,777)	81,622
EXPENDITURE					
Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	4(b)	(48,109)	(109,850)	(48,109)	(109,850)
Other interest expense	4(c)	(16,601)	(1,645)	(14,318)	(2,720)
Operating expenses	4(d)	(6,437)	(6,640)	(5,055)	(5,323)
Note and coin expenses	4(e)	(212)	(210)	(212)	(210)
(Charge for)/Reversal of impairment allowances	4(f)	(5)	18	1	–
Net claims incurred, benefits paid and movement in policyholders’ liabilities	5	(3,578)	(4,079)	–	–
TOTAL EXPENDITURE		(74,942)	(122,406)	(67,693)	(118,103)
(DEFICIT)/SURPLUS BEFORE SHARE OF (LOSS)/PROFIT OF ASSOCIATES AND JOINT VENTURES					
		(274,367)	76,208	(249,470)	(36,481)
Share of (loss)/profit of associates and joint ventures, net of tax		(4,706)	3,812	–	–
Gain on disposal of a joint venture		–	188	–	–
(DEFICIT)/SURPLUS BEFORE TAXATION					
		(279,073)	80,208	(249,470)	(36,481)
Income tax	6	(275)	(641)	–	–
(DEFICIT)/SURPLUS FOR THE YEAR					
		(279,348)	79,567	(249,470)	(36,481)
(DEFICIT)/SURPLUS FOR THE YEAR ATTRIBUTABLE TO:					
Owner of the Fund		(278,889)	79,268	(249,470)	(36,481)
Non-controlling interests		(459)	299	–	–
		(279,348)	79,567	(249,470)	(36,481)

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Statement of Comprehensive Income

for the year ended 31 December 2022

(Expressed in millions of Hong Kong dollars)	Group		Fund	
	2022	2021	2022	2021
(DEFICIT)/SURPLUS FOR THE YEAR	(279,348)	79,567	(249,470)	(36,481)
OTHER COMPREHENSIVE LOSS				
Items that will not be reclassified to income and expenditure account				
Equity securities measured at fair value through other comprehensive income				
– fair value changes	(72)	(34)	(72)	(34)
Items that are or may be reclassified subsequently to income and expenditure account				
Debt securities measured at fair value through other comprehensive income				
– fair value changes	(18)	8	–	–
Cash flow hedges				
– fair value changes	139	–	–	–
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	(2,766)	(1,208)	–	–
OTHER COMPREHENSIVE LOSS FOR THE YEAR, NET OF TAX	(2,717)	(1,234)	(72)	(34)
TOTAL COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR	(282,065)	78,333	(249,542)	(36,515)
TOTAL COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR ATTRIBUTABLE TO:				
Owner of the Fund	(281,580)	78,040	(249,542)	(36,515)
Non-controlling interests	(485)	293	–	–
	(282,065)	78,333	(249,542)	(36,515)

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Balance Sheet

as at 31 December 2022

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2022	2021	2022	2021
ASSETS					
Cash and money at call	8	209,717	185,467	203,850	179,229
Placements with banks and other financial institutions	9	197,416	164,268	164,908	121,596
Financial assets measured at fair value through income and expenditure account	10	3,830,723	4,492,896	3,396,187	4,035,011
Financial assets measured at fair value through other comprehensive income	11	2,508	4,983	1,264	1,336
Derivative financial instruments	12(a)	2,951	4,596	1,534	3,628
Debt securities measured at amortised cost	13	13,143	11,207	–	–
Loan portfolio	14	109,391	87,412	–	–
Gold	15	945	948	945	948
Other assets	16	40,222	30,501	31,947	25,230
Interests in subsidiaries	17	–	–	204,156	200,158
Interests in associates and joint ventures	18	41,638	47,545	116	54
Investment properties	19	23,394	27,089	–	–
Property, plant and equipment	20	3,453	3,353	3,131	2,965
TOTAL ASSETS		4,475,501	5,060,265	4,008,038	4,570,155
LIABILITIES AND EQUITY					
Certificates of Indebtedness	21	605,959	592,364	605,959	592,364
Government-issued currency notes and coins in circulation	21	13,160	13,126	13,160	13,126
Balance of the banking system	22	96,251	377,516	96,251	377,516
Placements by banks and other financial institutions	23	99,455	–	99,455	–
Placements by Fiscal Reserves	24	765,189	973,303	765,189	973,303
Placements by HKSAR Government funds and statutory bodies	25	449,041	394,249	449,041	394,249
Placements by subsidiaries	26	–	–	30,588	26,237
Exchange Fund Bills and Notes issued	27	1,200,323	1,148,569	1,200,323	1,148,569
Derivative financial instruments	12(a)	7,175	2,292	2,833	1,667
Bank loans	28	14,714	16,130	–	–
Other debt securities issued	29	131,683	116,334	–	–
Other liabilities	30	222,931	274,662	187,998	236,341
Total liabilities		3,605,881	3,908,545	3,450,797	3,763,372

Exchange Fund – Balance Sheet (continued)

as at 31 December 2022

(Expressed in millions of Hong Kong dollars)	Group		Fund	
	2022	2021	2022	2021
Accumulated surplus	871,136	1,150,025	556,470	805,940
Revaluation reserve	770	860	771	843
Hedging reserve	139	–	–	–
Translation reserve	(4,042)	(1,302)	–	–
Total equity attributable to owner of the Fund	868,003	1,149,583	557,241	806,783
Non-controlling interests	1,617	2,137	–	–
Total equity	869,620	1,151,720	557,241	806,783
TOTAL LIABILITIES AND EQUITY	4,475,501	5,060,265	4,008,038	4,570,155

Eddie Yue

Monetary Authority

11 April 2023

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Statement of Changes in Equity

for the year ended 31 December 2022

(Expressed in millions of Hong Kong dollars)	Attributable to owner of the Fund				Total attributable to owner of the Fund	Non- controlling interests	Total
	Accumulated surplus	Revaluation reserve	Hedging reserve	Translation reserve			
Group							
At 1 January 2021	1,070,757	886	–	(100)	1,071,543	1,916	1,073,459
Surplus for the year	79,268	–	–	–	79,268	299	79,567
Other comprehensive loss for the year	–	(26)	–	(1,202)	(1,228)	(6)	(1,234)
Total comprehensive income for the year	79,268	(26)	–	(1,202)	78,040	293	78,333
Deemed acquisition of a subsidiary	–	–	–	–	–	27	27
Capital distribution to non-controlling interests	–	–	–	–	–	(94)	(94)
Dividends paid to non-controlling interests	–	–	–	–	–	(5)	(5)
At 31 December 2021	1,150,025	860	–	(1,302)	1,149,583	2,137	1,151,720
At 1 January 2022	1,150,025	860	–	(1,302)	1,149,583	2,137	1,151,720
Deficit for the year	(278,889)	–	–	–	(278,889)	(459)	(279,348)
Other comprehensive loss for the year	–	(90)	139	(2,740)	(2,691)	(26)	(2,717)
Total comprehensive loss for the year	(278,889)	(90)	139	(2,740)	(281,580)	(485)	(282,065)
Capital distribution to non-controlling interests	–	–	–	–	–	(32)	(32)
Dividends paid to non-controlling interests	–	–	–	–	–	(3)	(3)
At 31 December 2022	871,136	770	139	(4,042)	868,003	1,617	869,620

Exchange Fund – Statement of Changes in Equity (continued)

for the year ended 31 December 2022

(Expressed in millions of Hong Kong dollars)	Accumulated surplus	Revaluation reserve	Total attributable to owner of the Fund
Fund			
At 1 January 2021	842,421	877	843,298
Deficit for the year	(36,481)	–	(36,481)
Other comprehensive loss for the year	–	(34)	(34)
Total comprehensive loss for the year	(36,481)	(34)	(36,515)
At 31 December 2021	805,940	843	806,783
At 1 January 2022	805,940	843	806,783
Deficit for the year	(249,470)	–	(249,470)
Other comprehensive loss for the year	–	(72)	(72)
Total comprehensive loss for the year	(249,470)	(72)	(249,542)
At 31 December 2022	556,470	771	557,241

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Statement of Cash Flows

for the year ended 31 December 2022

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2022	2021	2022	2021
Cash flows from operating activities					
(Deficit)/Surplus before taxation		(279,073)	80,208	(249,470)	(36,481)
Adjustments for:					
Interest income	4(a)	(53,419)	(21,710)	(49,890)	(20,159)
Dividend income	4(a)	(17,439)	(20,371)	(13,367)	(13,983)
Change in fair value of investment properties	4(a)	2,000	123	–	–
Gain on disposal of debt securities measured at amortised cost	4(a)	–	(3)	–	–
Interest expense	4(b) & 4(c)	64,710	111,495	62,427	112,570
Depreciation	4(d)	380	377	277	260
Charge for/(Reversal of) impairment allowances	4(f)	5	(18)	(1)	–
Share of loss/(profit) of associates and joint ventures		4,706	(3,812)	–	–
Gain on disposal of a joint venture		–	(188)	–	–
Exchange differences and other non-cash items		11,039	(302)	6,894	(2,284)
Interest received		49,926	22,646	46,666	20,823
Dividends received		17,623	20,191	12,807	12,356
Interest paid		(120,708)	(95,914)	(119,369)	(95,351)
Income tax paid		(343)	(164)	–	–
		(320,593)	92,558	(303,026)	(22,249)
Change in fair value of derivatives and other debt securities issued		2,470	(7,508)	3,205	(7,194)
Change in carrying amount of:					
– placements with banks and other financial institutions		17,576	(29,927)	(9,112)	(6,006)
– financial assets measured at fair value through income and expenditure account		655,953	(105,004)	636,968	886
– loan portfolio		(21,997)	(37,950)	–	–
– gold		3	31	3	31
– other assets		(6,012)	15,031	(3,650)	17,465
– Certificates of Indebtedness, government-issued currency notes and coins in circulation		13,629	36,442	13,629	36,442
– balance of the banking system		(281,265)	(79,950)	(281,265)	(79,950)
– placements by banks and other financial institutions		99,455	(87,650)	99,455	(87,650)
– placements by Fiscal Reserves		(208,114)	91,471	(208,114)	91,471
– placements by HKSAR Government funds and statutory bodies		54,792	51,778	54,792	51,778
– placements by subsidiaries		–	–	4,351	10,768
– Exchange Fund Bills and Notes issued		51,754	79,689	51,754	79,689
– other liabilities		4,261	9,887	8,680	(6,917)
Net cash from operating activities		61,912	28,898	67,670	78,564

Exchange Fund – Statement of Cash Flows (continued)

for the year ended 31 December 2022

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2022	2021	2022	2021
Cash flows from investing activities					
Proceeds from sale or redemption of financial assets measured at fair value through other comprehensive income		2,949	767	–	–
Purchase of financial assets measured at fair value through other comprehensive income		(660)	–	–	–
Proceeds from sale or redemption of debt securities measured at amortised cost		1,845	1,364	–	–
Purchase of debt securities measured at amortised cost		(3,993)	(2,745)	–	–
Investments in subsidiaries		–	–	(2,500)	(2,500)
Net cash inflow from deemed acquisition of a subsidiary		–	64	–	–
(Increase)/Decrease in loans to subsidiaries		–	–	(1,498)	3,048
Increase in interests in associates and joint ventures		(444)	(3,182)	(62)	(54)
Proceeds from disposal of a joint venture		–	667	–	–
Additions of investment properties		(791)	(495)	–	–
Additions of property, plant and equipment		(451)	(276)	(413)	(204)
Dividends received from subsidiaries		–	–	744	1,447
Net cash (used in)/from investing activities		(1,545)	(3,836)	(3,729)	1,737
Cash flows from financing activities					
Bank loans raised	31(c)	–	1,498	–	–
Repayment of bank loans	31(c)	(22)	–	–	–
Proceeds from issue of other debt securities	31(c)	97,470	109,360	–	–
Redemption of other debt securities issued	31(c)	(77,622)	(55,533)	–	–
Principal portion of lease payments	31(c)	(121)	(115)	(83)	(77)
Capital distribution to non-controlling interests		(32)	(94)	–	–
Dividends paid to non-controlling interests		(3)	(5)	–	–
Net cash from/(used in) financing activities		19,670	55,111	(83)	(77)
Net increase in cash and cash equivalents		80,037	80,173	63,858	80,224
Cash and cash equivalents at 1 January		370,953	288,498	353,486	270,978
Effect of foreign exchange rate changes		(6,922)	2,282	(6,894)	2,284
Cash and cash equivalents at 31 December	31(a)	444,068	370,953	410,450	353,486

The notes on pages 187 to 281 form part of these financial statements.

Exchange Fund – Notes to the Financial Statements

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

1 PRINCIPAL ACTIVITIES

The Monetary Authority, under delegated authority from the Financial Secretary as Controller of the Exchange Fund (the Fund), manages the Fund in accordance with the provisions of the Exchange Fund Ordinance (Cap. 66). The principal activities of the Fund are safeguarding the exchange value of the currency of Hong Kong and maintaining the stability and integrity of Hong Kong's monetary and financial systems.

The assets of the Fund are managed as four portfolios: the Backing Portfolio, the Investment Portfolio, the Long-Term Growth Portfolio and the Strategic Portfolio. The assets of the Backing Portfolio fully match the Monetary Base, under Hong Kong's Currency Board system. The Investment Portfolio is invested primarily in the bond and equity markets of the member countries of the Organisation for Economic Co-operation and Development (OECD). The Long-Term Growth Portfolio holds private equity and real estate investments. The Strategic Portfolio holds shares in Hong Kong Exchanges and Clearing Limited acquired by the Hong Kong Special Administrative Region (HKSAR) Government for the account of the Fund for strategic purposes. Operating segment information is set out in note 32.

2 SIGNIFICANT ACCOUNTING POLICIES

2.1 Statement of compliance

These financial statements have been prepared in accordance with Hong Kong Financial Reporting Standards (HKFRSs), which is a collective term that includes all applicable individual HKFRSs, Hong Kong Accounting Standards and Interpretations issued by the Hong Kong Institute of Certified Public Accountants (HKICPA), and accounting principles generally accepted in Hong Kong. A summary of the significant accounting policies adopted by the Fund and its subsidiaries (together referred to as the Group) is set out below.

The HKICPA has issued certain new or revised HKFRSs that are first effective or available for early adoption for the current accounting period of the Group. Note 3 provides information on the changes, if any, in accounting policies resulting from initial application of these developments to the extent that they are relevant to the Group for the current and prior accounting periods reflected in these financial statements.

2.2 Basis of preparation of the financial statements

The Group financial statements include the financial statements of the Group as well as the Group's interests in associates and joint ventures. The principal activities of the principal subsidiaries, associates and joint ventures are shown in notes 17 and 18.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The measurement basis used in the preparation of the financial statements is historical cost except for the following assets and liabilities that are measured at fair value:

- derivative financial instruments (note 2.6);
- financial assets and financial liabilities measured at fair value through income and expenditure account (note 2.6);
- financial assets measured at fair value through other comprehensive income (note 2.6);
- gold (note 2.10); and
- investment properties (note 2.11).

The preparation of financial statements in conformity with HKFRSs requires management to make judgements, estimates and assumptions that affect the application of policies and the reported amounts of assets, liabilities, income and expenditure. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Judgements made by management in the application of HKFRSs that have significant effect on the financial statements and major sources of estimation uncertainty are disclosed in note 2.19.

2.3 Subsidiaries and non-controlling interests

A subsidiary is an entity controlled by the Group. The Group controls an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing whether the Group has power, only substantive rights (held by the Group and other parties) are considered.

An investment in a subsidiary is consolidated into the Group financial statements from the date that control commences until the date that control ceases.

Intra-group balances, transactions and cash flows and any unrealised profits and losses arising from intra-group transactions are eliminated in full in preparing the Group financial statements.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Non-controlling interests represent the equity in a subsidiary not attributable directly or indirectly to the Fund, and in respect of which the Group has not agreed any additional terms with the holders of those interests which would result in the Group as a whole having a contractual obligation in respect of those interests that meets the definition of a financial liability. Non-controlling interests are presented in the Group balance sheet within equity, separately from equity attributable to the owner of the Fund. Non-controlling interests in the results of the Group are presented on the face of the Group income and expenditure account and statement of comprehensive income as an allocation of the surplus or deficit and total comprehensive income or loss for the year between non-controlling interests and the owner of the Fund.

In the balance sheet of the Fund, its investments in subsidiaries are stated at cost less impairment losses, if any (note 2.14).

In an acquisition of a subsidiary, when a group of assets acquired and liabilities assumed does not constitute a business, the overall acquisition cost is allocated to the individual identifiable assets and liabilities based on their relative fair values at the date of acquisition. Such acquisition does not give rise to any goodwill.

2.4 Associates and joint ventures

An associate is an entity in which the Group has significant influence, but not control or joint control, over its management, through its power to participate in the financial and operating policy decisions.

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

An interest in an associate or a joint venture is accounted for in the Group financial statements under the equity method and is initially recorded at cost, adjusted for any excess or deficit of the Group's share of the acquisition-date fair values of the investee's identifiable net assets over the cost of the investment, if any. Thereafter, the investment is adjusted for the post acquisition change in the Group's share of the net assets of the associate or the joint venture and any impairment loss relating to the investment.

The Group income and expenditure account and statement of comprehensive income include the Group's share of the post-tax results of the associates and the joint ventures for the year. When the Group's share of losses exceeds its interest in the associates or the joint ventures, the Group's interest is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associates or the joint ventures. For this purpose, the Group's interest is the carrying amount of the investment under the equity method together with the Group's long-term interests that in substance form part of the Group's net investment in the associates or the joint ventures.

Unrealised profits and losses resulting from transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interests in the associates or the joint ventures.

When the Group ceases to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in the associate or the joint venture, with a resulting gain or loss being recognised in the Group income and expenditure account. Any interest retained in the associate or the joint venture at the date when significant influence or joint control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (note 2.6).

In the balance sheet of the Fund, interests in associates and joint ventures are stated at cost less impairment losses, if any (note 2.14).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.5 Fair value measurement

The Group measures certain financial instruments, all investment properties and gold at fair value at each reporting date. The fair values of financial instruments measured at amortised cost are disclosed in note 38.2.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- (a) in the principal market for the asset or liability; or
- (b) in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Group.

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

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

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

The Group measures fair values using the following fair value hierarchy that reflects the significance of inputs used in making the measurements:

- (a) Level 1 – fair values are quoted prices (unadjusted) in active markets for identical assets or liabilities;
- (b) Level 2 – fair values are determined involving inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices); and
- (c) Level 3 – fair values are determined with inputs that are not based on observable market data (unobservable inputs).

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

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6 Financial assets and financial liabilities

2.6.1 Initial recognition and measurement

The Group recognises financial assets and financial liabilities on the date it becomes a party to the contractual provisions of the instrument. Regular way purchases and sales of financial instruments are recognised on trade date, the date on which the Group commits to purchase or sell the instruments.

At initial recognition, financial assets and financial liabilities are measured at fair value plus or minus, in the case of a financial asset or financial liability not at fair value through income and expenditure account, transaction costs that are directly attributable to the acquisition of the financial assets or the issue of the financial liabilities. Transaction costs of financial assets and financial liabilities at fair value through income and expenditure account are expensed immediately.

2.6.2 Classification and subsequent measurement

The Group classifies its financial assets into three categories for determining the subsequent measurement methods, on the basis of both the Group's business model for managing the assets and the contractual cash flow characteristics of the assets. The three measurement categories are:

- fair value through income and expenditure account (which is equivalent to the term "fair value through profit or loss" under HKFRS 9 "Financial Instruments");
- fair value through other comprehensive income; and
- amortised cost.

The Group classifies its financial liabilities as subsequently measured at fair value through income and expenditure account, or other financial liabilities.

Financial liabilities measured at fair value through income and expenditure account include those that are irrevocably designated by the Group at initial recognition as at fair value through income and expenditure account when doing so results in more relevant information because either:

- (a) the designation eliminates or significantly reduces an accounting mismatch which would otherwise arise; or
- (b) a group of financial liabilities or financial assets and liabilities is managed and its performance is evaluated on a fair value basis in accordance with a documented risk management or investment strategy.

Financial liabilities measured at fair value through income and expenditure account also include contracts that contain embedded derivatives which significantly modify the cash flows otherwise required.

The Group reclassifies a financial asset when and only when it changes its business model for managing the asset, except for equity securities elected to be measured at fair value through other comprehensive income at initial recognition (note 2.6.2.2). A financial liability is not reclassified.

An analysis of the Group's financial assets and financial liabilities by category is set out in note 7.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.1 Debt securities

The Group classifies its debt securities as measured at (a) amortised cost, (b) fair value through other comprehensive income or (c) fair value through income and expenditure account, depending on the Group's business model in managing them and their contractual cash flow characteristics.

(a) Debt securities measured at amortised cost

Debt securities are measured at amortised cost if they are held within a business model whose objective is to hold them for collection of contractual cash flows and the contractual cash flows represent solely payments of principal and interest. Debt securities in this category are initially recognised at fair value plus directly attributable transaction costs and subsequently carried at amortised cost. Interest income on these debt securities is recognised in the income and expenditure account using the effective interest method.

The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability and of allocating and recognising the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts or payments through the expected life of the financial asset or financial liability to the gross carrying amount of the financial asset or to the amortised cost of the financial liability. When calculating the effective interest rate, the Group estimates cash flows by considering all contractual terms of the financial instrument but does not consider the expected credit losses. The calculation includes all fees received or paid between parties to the contract that are an integral part of the effective interest rate, transaction costs and all other premiums or discounts.

The measurement of loss allowances for debt securities measured at amortised cost is based on the expected credit loss model as described in note 2.9.

(b) Debt securities measured at fair value through other comprehensive income

Debt securities are measured at fair value through other comprehensive income if they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling them and the contractual cash flows represent solely payments of principal and interest. Debt securities in this category are initially recognised at fair value plus directly attributable transaction costs and subsequently carried at fair value. Movements in the carrying amount of these securities are recognised in other comprehensive income, except for interest income, foreign exchange gains or losses, and impairment losses or reversals which are recognised in the income and expenditure account. Upon derecognition, the cumulative gain or loss previously recognised in other comprehensive income is reclassified from equity to the income and expenditure account.

The measurement of loss allowances for debt securities measured at fair value through other comprehensive income is based on the expected credit loss model as described in note 2.9. The loss allowances are recognised in other comprehensive income and do not reduce the carrying amount of such debt securities in the balance sheet.

(c) Debt securities measured at fair value through income and expenditure account

Debt securities that do not meet the criteria for being measured at amortised cost or fair value through other comprehensive income are measured at fair value through income and expenditure account. Debt securities in this category are initially recognised at fair value with transaction costs immediately charged to the income and expenditure account, and subsequently carried at fair value. Changes in fair value of these securities are recognised in the income and expenditure account in the period in which they arise.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.2 Equity securities and investment funds

Equity securities are measured at fair value through income and expenditure account, unless an election is made to designate them at fair value through other comprehensive income upon initial recognition.

For equity securities measured at fair value through income and expenditure account, changes in fair value are recognised in the income and expenditure account in the period in which they arise.

The Group classifies certain equity securities, which are held for strategic or longer term investment purposes, as measured at fair value through other comprehensive income. The election of fair value through other comprehensive income is made upon initial recognition on an instrument-by-instrument basis and once made is irrevocable. Gains and losses on these equity securities are recognised in other comprehensive income, which are not reclassified subsequently to the income and expenditure account, including when they are derecognised. Dividends on such investments are recognised in the income and expenditure account unless the dividends clearly represent a recovery of part of the cost of the investment.

Investment funds are measured at fair value through income and expenditure account. Changes in fair value of these funds are recognised in the income and expenditure account in the period in which they arise.

2.6.2.3 Derivative financial instruments and hedge accounting

Derivatives are initially recognised at fair value on the date on which a derivative contract is entered into and are subsequently measured at their fair values. Fair values are obtained from market prices in active markets, including recent market transactions, and valuation techniques, including discounted cash flow models and options pricing models, as appropriate. Derivatives are carried as assets when their fair value is positive and as liabilities when their fair value is negative.

The best evidence of the fair value of a derivative at initial recognition is the transaction price (i.e. the fair value of the consideration given or received).

Certain derivatives embedded in other financial instruments are treated as separate derivatives when their economic characteristics and risks are not closely related to those of the host contract and the host contract is not carried at fair value through income and expenditure account. These embedded derivatives are measured at fair value through income and expenditure account.

The method of recognising the resulting fair value gain or loss depends on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged. The Group designates certain derivatives as either (a) hedges of the fair value of recognised assets or liabilities or unrecognised firm commitments (fair value hedge) or (b) hedges of highly probable future cash flows attributable to a recognised asset or liability, or a forecast transaction (cash flow hedge). Hedge accounting is used for derivatives designated in this way provided that certain criteria are met.

The Group documents, at the inception of the transaction, the relationship between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of hedged items.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(a) Fair value hedge

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

If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used, is amortised to the income and expenditure account over the period to maturity.

(b) Cash flow hedge

The effective portion of changes in the fair value of derivatives that are designated and qualified as cash flow hedges are recognised in other comprehensive income and accumulated in equity. The gain or loss relating to the ineffective portion is recognised immediately in the income and expenditure account.

Amounts accumulated in equity are recycled to the income and expenditure account in the periods in which the hedged item will affect the income and expenditure account.

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

(c) Derivatives not qualified as hedges for accounting purposes

Derivative instruments entered into as economic hedges that do not qualify for hedge accounting are held at fair value through income and expenditure account. Changes in the fair value of such derivative instruments are recognised in the income and expenditure account.

2.6.2.4 Other financial assets

Other financial assets are measured at amortised cost. This category includes cash and money at call, placements with banks and other financial institutions, and loan portfolio. The measurement of loss allowances for these financial assets is based on the expected credit loss model as described in note 2.9.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.5 Financial liabilities measured at fair value through income and expenditure account

The following financial liabilities are measured at fair value through income and expenditure account:

- Exchange Fund Bills and Notes (EFBN) issued which, on initial recognition, are irrevocably designated by the Group as at fair value through income and expenditure account; and
- other debt securities issued, which contain embedded derivatives that significantly modify the cash flows otherwise required.

Financial liabilities measured at fair value through income and expenditure account are initially recognised at fair value. Changes in fair value are recognised in the income and expenditure account, except for those changes arising from changes in the Group's own credit risk. Any changes in fair value of liabilities due to changes in the Group's own credit risk are recognised in other comprehensive income and the amount of such changes recognised in other comprehensive income is not reclassified subsequently to the income and expenditure account upon derecognition.

2.6.2.6 Other financial liabilities

Other financial liabilities are financial liabilities other than those measured at fair value through income and expenditure account.

Other financial liabilities repayable on demand are stated at the principal amount payable. These include Certificates of Indebtedness, government-issued currency notes and coins in circulation (note 2.6.2.7), balance of the banking system, placements by Fiscal Reserves (Operating and Capital Reserves), placements by the Bond Fund, placements by the Deposit Protection Scheme Fund and placements by The Hong Kong Mortgage Corporation Limited.

Other financial liabilities with a fixed maturity and a predetermined rate are carried at amortised cost using the effective interest method. These include placements by banks and other financial institutions, placements by HKSAR Government funds and statutory bodies (other than the Bond Fund and the Deposit Protection Scheme Fund), placements by subsidiaries (other than The Hong Kong Mortgage Corporation Limited), bank loans and other debt securities issued (other than those which contain embedded derivatives).

Placements by Fiscal Reserves (Future Fund) which are repayable on 31 December 2030 (unless otherwise directed by the Financial Secretary according to the terms of the placements) are stated at the principal amount payable. Interest payable on these placements is calculated at a composite rate determined annually (note 2.17.1) and compounded on an annual basis until maturity. If the composite rate is negative for a year, the negative return will first be offset against the balance of interest payable, with the excess portion (if any) written off against the principal amount payable. When the composite rate turns positive in subsequent years, the return will be used to recover fully or partially the amount written off.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.6.2.7 Certificates of Indebtedness and government-issued currency notes and coins in circulation

As backing for the banknote issues, each note-issuing bank is required to hold a non-interest-bearing Certificate of Indebtedness issued by the Financial Secretary, which is redeemable on demand. Payments for the issue and redemption of banknotes against these Certificates are made in US dollars at the fixed exchange rate of US\$1=HK\$7.80. Consistent with the requirement for backing banknote issues with US dollars, the issue and redemption of government-issued currency notes and coins are conducted with an agent bank against US dollars at the fixed exchange rate of US\$1=HK\$7.80.

The Group's liabilities in respect of Certificates of Indebtedness represent the US dollars payable to the note-issuing banks on redemption of the Certificates. The Group's liabilities in respect of government-issued currency notes and coins represent the US dollars payable to the agent bank when they are redeemed. Certificates of Indebtedness in issue and government-issued currency notes and coins in circulation are stated in the financial statements at the Hong Kong dollar equivalent of the US dollars required for their redemption using the closing exchange rate at the reporting date.

2.6.3 *Derecognition*

A financial asset is derecognised when the contractual rights to receive the cash flows from the financial asset expire, or where the financial asset together with substantially all the risks and rewards of ownership have been transferred.

A financial liability is derecognised when the obligation specified in the contract is discharged, is cancelled or expires.

Liabilities for EFBN in issue are derecognised when they are repurchased as a result of market making activities. The repurchase is considered as redemption of the debt.

2.6.4 *Offsetting*

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet where there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis, or realise the assets and settle the liabilities simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

2.7 **Repurchase and reverse repurchase transactions**

Securities sold subject to a simultaneous agreement to repurchase these securities at a certain later date at a fixed price (repurchase agreements) are retained on the balance sheet without changes in their measurement. The proceeds from the sale are reported as liabilities in "placements by banks and other financial institutions" and are carried at amortised cost.

Conversely, securities purchased under agreements to resell (reverse repurchase agreements) are reported as receivables in "placements with banks and other financial institutions" and are carried at amortised cost.

Interest earned on reverse repurchase agreements and interest incurred on repurchase agreements are recognised as interest income and interest expense respectively, over the life of each agreement using the effective interest method.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.8 Securities lending agreements

Where securities are loaned with the receipt of cash or other securities as collateral, they are retained on the balance sheet without changes in their measurement. Where cash collateral is received, a liability is recorded in respect of the cash received in “placements by banks and other financial institutions”. Securities received as collateral are not recognised in the financial statements.

2.9 Impairment of financial instruments

The Group applies a three-stage approach to measure expected credit losses and to recognise the corresponding loss allowances (provision in the case of loan commitments and financial guarantee contracts) and impairment losses or reversals, for financial instruments that are not measured at fair value through income and expenditure account, including mainly the following types of financial instruments:

- cash and money at call;
- placements with banks and other financial institutions;
- debt securities measured at amortised cost or fair value through other comprehensive income;
- loan portfolio;
- loan commitments; and
- financial guarantee contracts.

The change in credit risk since initial recognition determines the measurement bases for expected credit losses:

Stage 1: 12-month expected credit losses

For financial instruments for which there has not been a significant increase in credit risk since initial recognition, the portion of the lifetime expected credit losses that represent the expected credit losses that result from default events that are possible within the 12 months after the reporting date are recognised.

Stage 2: Lifetime expected credit losses – not credit impaired

For financial instruments for which there has been a significant increase in credit risk since initial recognition but that are not credit impaired, lifetime expected credit losses representing the expected credit losses that result from all possible default events over the expected life of the financial instruments are recognised.

Stage 3: Lifetime expected credit losses – credit impaired

For financial instruments that have become credit impaired, lifetime expected credit losses are recognised and interest income is calculated by applying the effective interest rate to the amortised cost rather than the gross carrying amount.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.9.1 *Determining significant increases in credit risk*

At each reporting date, the Group assesses whether there has been a significant increase in credit risk for financial instruments since initial recognition by comparing the risk of default occurring over the remaining expected life as at the reporting date with that as at the date of initial recognition. For this purpose, the date of initial recognition of loan commitments and financial guarantee contracts is the date that the Group becomes a party to the irrevocable commitment. The assessment considers quantitative and qualitative historical information as well as forward-looking information. A financial asset is assessed to be credit impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred.

The Group assesses whether there has been a significant increase in credit risk since initial recognition on an individual or collective basis. For collective assessment, financial instruments are grouped on the basis of shared credit risk characteristics, taking into account investment type, credit risk ratings, date of initial recognition, remaining term to maturity, industry, geographical location of the counterparty or borrower and other relevant factors.

Debt securities with an external credit rating of investment grade are considered to have a low credit risk. Other financial instruments are considered to have a low credit risk if they have a low risk of default and the counterparty or borrower has a strong capacity to meet its contractual cash flow obligations in the near term. The credit risk on these financial instruments is assessed as not having increased significantly since initial recognition.

For a financial asset with lifetime expected credit losses recognised in the previous reporting period, if its credit quality improves and reverses the previously assessed significant increase in credit risk, then the loss allowance reverts from lifetime expected credit losses to 12-month expected credit losses.

When a financial asset is uncollectible, it is written off against the related loss allowance. Such assets are written off after all the necessary procedures have been completed and the amount of the loss has been determined. Subsequent recoveries of amounts previously written off are recognised in the income and expenditure account.

2.9.2 *Measurement of expected credit losses*

Expected credit losses of a financial instrument are an unbiased and probability-weighted estimate of credit losses (i.e. the present value of all cash shortfalls) over the expected life of the financial instrument:

- for financial assets, a credit loss is the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive, discounted at the effective interest rate. For a financial asset that is credit impaired at the reporting date, the Group measures the expected credit losses as the difference between the asset's gross carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate;
- for undrawn loan commitments, a credit loss is the present value of the difference between the contractual cash flows that are due to the Group if the commitment is drawn down and the cash flows that the Group expects to receive; and
- for financial guarantee contracts, a credit loss is the present value of expected payments to reimburse the holder less any amounts that the Group expects to recover.

Further details on the expected credit losses calculation are set out in note 37.3.3.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.10 Gold

Gold is carried at fair value. Changes in the fair value of gold are recognised in the income and expenditure account in the period in which they arise.

2.11 Investment properties

Properties that are held for long-term rental yields, capital appreciation or both, and that are not occupied by the Group, are classified as investment properties.

Investment properties are recognised initially at cost, including related transaction costs. After initial recognition, investment properties are measured at fair value as assessed by independent professional valuers, or by the management based on the latest valuation made by the independent professional valuers. Fair value of the investment properties is measured based on the market or income approach. Under the market approach, the value is determined based on comparable transactions. For the income approach, the fair value is determined using valuation techniques including discounted cash flow and income capitalisation methods.

Any gain or loss arising from a change in fair value or the disposal of an investment property is recognised directly in the income and expenditure account. Rental income from investment properties is recognised in accordance with the accounting policies as set out in note 2.13.2.

2.12 Property, plant and equipment

The following items of property, plant and equipment are stated in the balance sheet at cost less accumulated depreciation and any impairment losses (note 2.14):

- buildings held for own use situated on freehold land;
- leasehold land and buildings held for own use;
- plant and equipment, including plant, machinery, furniture, fixtures, equipment, motor vehicles and personal computers; and
- right-of-use assets arising from leases of premises (note 2.13.1).

Intangible assets including computer software licences and system development costs are included in property, plant and equipment.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Freehold land is not depreciated. For other items of property, plant and equipment, depreciation is calculated to write off their cost less their estimated residual value, if any, on a straight-line basis over their estimated useful lives as follows:

- leasehold land over the unexpired term of lease
- buildings situated on freehold land 39 years
- buildings situated on leasehold land over the shorter of the unexpired term of lease and their estimated useful lives
- right-of-use assets over the shorter of the lease terms and their estimated useful lives
- plant and equipment 3 to 15 years
- computer software licences and system development costs 3 to 5 years

A gain or loss arising from the disposal of an item of property, plant and equipment is determined as the difference between the net disposal proceeds and the carrying amount of the asset and is recognised in the income and expenditure account on the date of disposal.

2.13 Leases

2.13.1 As a lessee

A lease is recognised in the balance sheet as a right-of-use asset with a corresponding lease liability at the lease commencement date, except that payments associated with short-term leases having a lease term of 12 months or less and leases of low-value assets are charged to the income and expenditure account on a straight-line basis over the lease term.

A right-of-use asset, except that meeting the definition of investment property (note 2.11), is recognised as property, plant and equipment and measured at cost less accumulated depreciation and any impairment losses (note 2.12). The right-of-use asset is depreciated on a straight-line basis over the shorter of the lease term and the asset's estimated useful life. A right-of-use asset that meets the definition of investment property is presented in the balance sheet as an investment property.

The lease liability is recognised as other liabilities and is measured at the present value of the lease payments payable over the lease term, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. 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 the income and expenditure account in the accounting period in which they are incurred. The lease liability is subsequently adjusted by the effect of the interest on and the settlement of the lease liability, and the remeasurement arising from any reassessment of lease liability or lease modification.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Lease payments included in the measurement of the Group's lease liability mainly comprise:

- fixed payments, less any lease incentives receivable;
- lease payments in an optional renewal period if the Group is reasonably certain to exercise an extension option; and
- penalties for early termination of a lease unless the Group is reasonably certain not to terminate early.

2.13.2 *As a lessor*

The Group enters into contracts as a lessor with respect to some of its properties. These contracts are classified as operating leases because the Group does not transfer substantially all the risks and rewards incidental to ownership of assets to the lessees. Rental income from operating leases is recognised in the income and expenditure account as other income (note 2.17.5) on a straight-line basis over the lease term.

2.14 **Impairment of other assets**

The carrying amounts of other assets, including interests in subsidiaries, interests in associates and joint ventures, and property, plant and equipment, are reviewed at each reporting date to identify any indication of impairment.

If any such indication exists, an impairment loss is recognised in the income and expenditure account whenever the carrying amount of an asset exceeds its recoverable amount. The recoverable amount of an asset is the higher of its fair value less costs of disposal and value in use.

2.15 **Cash and cash equivalents**

Cash and cash equivalents comprise cash and money at call, placements with banks and other financial institutions, and short-term highly liquid investments that are readily convertible to known amounts of cash and subject to an insignificant risk of changes in value, having been within three months of maturity when placed or acquired.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.16 Insurance contracts

2.16.1 Life insurance contracts

Premiums are recognised as income when the cash is received from the annuitant, and the policy is issued and becomes effective after the completion of all the underwriting procedures.

Insurance contract liabilities are recognised when contracts are entered into and premiums are recognised. These liabilities are measured by using the Modified Net Level Premium Valuation method for long term business in accordance with the provisions of the Insurance (Determination of Long Term Liabilities) Rules (Cap. 41E). The movements in liabilities at each reporting date are recorded in the income and expenditure account.

Insurance claims reflect the cost of all annuity payments, surrenders, withdrawals and death claims arising during the year. Surrenders, withdrawals and death claims are recorded on the basis of notifications received. Annuity payments are recorded when due.

2.16.2 Mortgage insurance contracts

The mortgage insurance business under the Mortgage Insurance Programme of the Group is accounted for on the annual accounting basis. Under the annual accounting approach, the Group makes provisions based on credible estimates of future income and outgoings to determine the underwriting result for the current accounting period. The underwriting result includes any adjustments arising from the correction of the previous estimates.

Gross premiums represent direct business written through authorized institutions as defined under the Banking Ordinance (Cap. 155) during an accounting period. The gross premiums after deduction of discounts and refunds, include the reinsurance premiums to be paid to the approved reinsurers, the risk premiums and servicing fees earned by the Group. The net premiums are recognised as income on a time-apportioned basis during the time the insurance coverage is effective.

Unearned premiums represent that portion of net premiums written which are estimated to relate to risks and services subsequent to the reporting date.

Provisions are made for outstanding claims, claims incurred but not reported and loss reserve at the reporting date.

Reinsurance contracts refer to contracts entered into by the Group with reinsurers under which the Group is compensated for losses on one or more insurance contracts issued by the Group. Benefits to which the Group is entitled under its reinsurance contracts held are recognised as reinsurance assets. These assets consist of claims recoverable from reinsurers and receivables that are dependent on the expected claims and benefits arising under the related reinsured insurance contracts. Amounts recoverable from or due to reinsurers are measured consistently with the amounts associated with the reinsured insurance contracts and in accordance with the terms of each reinsurance contract. Reinsurance assets are primarily premiums for reinsurance contracts and are amortised as an expense.

A reinsurance asset is impaired if there is objective evidence, as a result of an event that occurred after initial recognition of the reinsurance asset, that the Group may not receive all amounts due to it under the terms of the contract, and the impact on the amounts that the Group will receive from the reinsurer can be reliably measured.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.16.3 *Other guarantee and insurance contracts*

The Group provides financial guarantees for loan facilities provided to eligible small and medium enterprises (SMEs), in return for a guarantee fee, insurance coverage on reverse mortgage loans and policy reverse mortgage loans provided to elderly people in return for an insurance premium.

In respect of insurance coverage on reverse mortgage loans, the Group entered into reinsurance contract with a reinsurer. Reinsurance contracts refer to contracts entered into by the Group with reinsurers under which the Group is compensated for losses on one or more insurance contracts issued by the Group. Benefits to which the Group is entitled under its reinsurance contracts held are recognised as reinsurance assets. Reinsurance assets are primarily premiums for reinsurance contracts and are amortised as an expense.

A reinsurance asset is impaired if there is objective evidence, as a result of an event that occurred after initial recognition of the reinsurance asset, that the Group may not receive all amounts due to it under the terms of the contract, and the impact on the amounts that the Group will receive from the reinsurer can be reliably measured.

The Group will assess if its recognised liabilities are adequate on each reporting date, using the current estimates of future cash flows under these contracts. If the assessment shows that the carrying amount of its insurance liabilities are inadequate in the light of the estimated future cash flows, the shortfall shall be recognised in the income and expenditure account.

2.17 **Revenue and expenditure recognition**

2.17.1 *Interest income and expense*

Interest on the majority of the placements by Fiscal Reserves (Operating and Capital Reserves) and placements by HKSAR Government funds and statutory bodies is payable at a fixed rate determined annually (notes 24 and 25). Interest on these placements is recognised in the income and expenditure account on an accrual basis, using the effective interest method.

Interest on the placements by Fiscal Reserves (Future Fund) is payable at a composite rate which is determined annually and linked with the performance of certain portfolios of assets under the Fund (note 24). Interest on these placements is recognised in the income and expenditure account on an accrual basis, based on the performance of those portfolios.

Interest income and expense for all other interest-bearing financial assets and financial liabilities are recognised in the income and expenditure account on an accrual basis, using the effective interest method.

Once a financial asset or a group of similar financial assets has been written down as a result of an impairment loss, interest income is thereafter recognised using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss.

2.17.2 *Dividend income*

Dividend income from listed equity securities is recognised in the income and expenditure account when the share price is quoted ex-dividend. Dividend income from unlisted equity securities is recognised when the shareholder's right to receive payment is unconditionally established.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Dividends on equity securities measured at fair value through other comprehensive income that clearly represent a recovery of part of the cost of the investment are presented in other comprehensive income.

2.17.3 *Net realised and unrealised gains/(losses)*

Realised gains or losses on financial instruments other than equity securities measured at fair value through other comprehensive income are recognised in the income and expenditure account when the financial instruments are derecognised.

Changes in fair value of financial instruments measured at fair value through income and expenditure account are recognised as unrealised gains or losses in the income and expenditure account in the period in which they arise.

2.17.4 *Bank licence fees*

Bank licence fees are fees receivable from authorized institutions under the Banking Ordinance and are accounted for in the period when the fees become receivable.

2.17.5 *Other income*

Other income includes rental income and fee income from the provision of financial market infrastructure services. Rental income is recognised in accordance with the accounting policies as set out in note 2.13.2. Other income is accounted for in the period when it becomes receivable.

2.17.6 *Contributions to staff retirement schemes*

The Group operates several defined contribution schemes, including the Mandatory Provident Fund Scheme. Under these schemes, contributions payable each year are charged to the income and expenditure account. The assets of the staff retirement schemes are held separately from those of the Group.

2.17.7 *Income tax*

The Fund is not subject to Hong Kong profits tax as it is an integral part of the government. Income tax payable on profits of subsidiaries is recognised as an expense in the period in which profits arise.

Deferred tax assets and liabilities arise from deductible and taxable temporary differences respectively, being the differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the assets can be utilised. Deferred tax liabilities are provided in full. For investment properties that are measured at fair value, the amount of deferred tax recognised is measured using the tax rates that would apply on sale of those assets at their carrying value at the reporting date on the presumption that their carrying amounts are recovered entirely through sale. In all other cases, the amount of deferred tax recognised is measured based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates enacted or substantively enacted at the reporting date. Deferred tax assets and liabilities are not discounted.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

2.18 Foreign currency translation

The financial statements are presented in Hong Kong dollars, which is the Group's and the Fund's functional currency.

Foreign currency transactions during the year are translated into Hong Kong dollars using the spot exchange rates at the transaction dates. Monetary assets and liabilities denominated in foreign currencies are translated into Hong Kong dollars using the closing exchange rate at the reporting date. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated into Hong Kong dollars using the spot exchange rates at the transaction dates. Non-monetary assets and liabilities that are measured at fair value in a foreign currency are translated into Hong Kong dollars using the closing exchange rates at the dates when the fair value is determined.

All foreign currency translation differences are presented in aggregate as "net exchange gain/(loss)" in the income and expenditure account. Although it is not practicable to disclose separately the net exchange gain/(loss) on financial assets and financial liabilities measured at fair value through income and expenditure account or on derivative financial instruments, the majority of the exchange gains/(losses) relate to these two categories of financial instruments.

The results of foreign operations are translated into Hong Kong dollars at the exchange rates approximating the foreign exchange rates ruling at the dates of the transactions. Balance sheet items are translated into Hong Kong dollars at the closing foreign exchange rates at the reporting date. The resulting exchange differences are recognised in other comprehensive income and accumulated separately in equity in the translation reserve.

On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation is reclassified from equity to the income and expenditure account when the gain or loss on disposal is recognised.

2.19 Critical accounting estimates and assumptions

The Group makes estimates and assumptions that affect the reported amounts of assets and liabilities. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

The Group has considered the impacts arising from the COVID-19 pandemic when reviewing the estimates and assumptions which are based on future economic conditions and sensitive to changes in those conditions. In particular, the economic effects of the COVID-19 pandemic increase the level of estimation uncertainty for the measurements of fair values of investment properties, fair values of certain financial assets that are derived from unobservable inputs and expected credit losses on financial instruments.

(a) Fair value of investment properties

The fair value of investment properties is revalued by independent professional valuers using property valuation techniques which involve certain assumptions of market conditions. Details of the fair value measurement of investment properties are set out in note 19.1.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Fair value of financial instruments

The majority of valuation techniques employ only observable market data. However, certain financial instruments are valued on the basis of valuation techniques that feature one or more significant market inputs that are unobservable, where the measurement of fair value is more judgemental. Details of the fair value measurement of financial instruments are set out in note 38.

(c) Impairment allowances on loan portfolio

The Group reviews its loan portfolio to assess expected credit losses on a regular basis. In determining expected credit losses, the Group makes judgements as to whether there is any significant increase in credit risk since initial recognition. It is required to exercise judgements in making assumptions and estimates to incorporate relevant information about external credit ratings, past events, current conditions and forecast of economic conditions. The methodology and assumptions used for estimating both the amount and timing of future cash flows are reviewed regularly to reduce any differences between loss estimates and actual loss experience. Information about the assumptions relating to measurement of expected credit losses is set out in note 37.3.3.

(d) Provision for outstanding claims on insurance and guarantee portfolios of general insurance business

The Group reviews the insurance and guarantee portfolios of its general insurance subsidiary to assess provision for outstanding claims, including claims of which the amounts have not been determined and claims arising out of incidents that have not been notified to the insurer and related expenses for settling such claims. In determining the provision for outstanding claims, the Group makes judgements and assumptions including but not limited to the loss severity rate applied, the economic conditions and the local property market in making estimation of the payments which the Group is required to make in fulfilling its obligations under the insurance and guarantee contracts. The methodology and assumptions used for estimating the ultimate claim amount are reviewed regularly.

(e) Insurance contract liabilities of life insurance business

The liability for insurance contracts of the Group's life insurance subsidiary is based on current assumptions with a margin for risk and adverse deviation. The main assumptions used relate to mortality, longevity, expenses and discount rates, which are reviewed regularly.

2.20 Related parties

For the purposes of these financial statements, a person or an entity is considered to be related to the Group if:

- (a) the person, or a close member of that person's family:
 - (i) has control or joint control over the Group;
 - (ii) has significant influence over the Group; or
 - (iii) is a member of the key management personnel of the Group.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

- (b) any of the following conditions applies to the entity:
- (i) the entity and the Group are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others);
 - (ii) the entity is an associate or joint venture of the Group (or an associate or joint venture of a member of a group of which the Group is a member);
 - (iii) the entity and the Group are joint ventures of the same third party;
 - (iv) the entity is a joint venture of another entity and the Group is an associate of that entity;
 - (v) the entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group;
 - (vi) the entity is controlled or jointly controlled by a person identified in (a);
 - (vii) a person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity); or
 - (viii) the entity, or any member of a group of which it is a part, provides key management personnel services to the Group.

Close members of the family of a person are those family members who may be expected to influence, or be influenced by, that person in their dealings with the entity.

2.21 Operating segments

Operating segments are reported in a manner consistent with the internal management reports provided to the chief operating decision maker. The Group comprises the following operating segments:

- management of funds under the Currency Board Operations, including the Backing Portfolio;
- management of funds representing the general reserve assets of the Fund, including the Investment Portfolio, the Long-Term Growth Portfolio and the Strategic Portfolio; and
- maintaining the stability and integrity of Hong Kong's monetary and financial systems, which includes banking supervision and monetary management, and the activities of Hong Kong FMI Services Limited, The Hong Kong Mortgage Corporation Limited and Hong Kong Note Printing Limited.

Details of the operating segments of the Group are set out in note 32.

3 CHANGES IN ACCOUNTING POLICIES

The HKICPA has issued certain new or revised HKFRSs that are first effective for the current accounting period of the Group. None of them has impact on the accounting policies of the Group.

The Group has not applied any new standard or interpretation that is not yet effective for the current accounting period (note 39).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

4 INCOME AND EXPENDITURE

(a) Investment (losses)/income

	Group		Fund	
	2022	2021	2022	2021
Interest income:				
– from derivative financial instruments	279	313	231	318
– from financial assets measured at fair value through income and expenditure account	45,219	19,635	44,792	19,246
– from financial assets measured at fair value through other comprehensive income	49	46	–	–
– from financial assets measured at amortised cost	7,872	1,716	4,867	595
	53,419	21,710	49,890	20,159
Dividend income:				
– from financial assets measured at fair value through income and expenditure account	17,427	20,346	12,611	12,511
– from financial assets measured at fair value through other comprehensive income	12	25	12	25
– from subsidiaries	–	–	744	1,447
	17,439	20,371	13,367	13,983
(Loss)/Income from investment properties:				
– rental income	1,267	1,281	–	–
– change in fair value on revaluation	(2,000)	(123)	–	–
	(733)	1,158	–	–
Net realised and unrealised (losses)/gains:				
– on derivative financial instruments	6,419	(2,092)	9,691	(2,099)
– on financial assets and financial liabilities measured at fair value through income and expenditure account	(237,177)	137,925	(214,883)	32,594
– on debt securities measured at amortised cost	–	3	–	–
– on gold	(3)	(31)	(3)	(31)
	(230,761)	135,805	(205,195)	30,464
Net exchange (loss)/gain	(42,479)	15,951	(40,045)	16,817
TOTAL	(203,115)	194,995	(181,983)	81,423

Net realised and unrealised (losses)/gains included a loss of HK\$4,235 million (2021: HK\$258 million) on hedging instruments designated as fair value hedge and a gain of HK\$4,268 million (2021: HK\$263 million) on hedged items.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies

	Group and Fund	
	2022	2021
Interest expense on placements by Fiscal Reserves:		
– at a fixed rate determined annually ¹	35,027	34,448
– at a composite rate determined annually ²	(9,020)	58,565
	26,007	93,013
Interest expense on placements by HKSAR Government funds and statutory bodies:		
– at a fixed rate determined annually ¹	22,076	16,835
– at market-based rates	26	2
	22,102	16,837
TOTAL	48,109	109,850

¹ This rate was fixed at 5.6% per annum for 2022 (2021: 4.7%) – notes 24, 25 and 30.

² The composite rate was -3.0% per annum for 2022 (2021: 17.8%) – notes 24 and 30.

(c) Other interest expense

	Group		Fund	
	2022	2021	2022	2021
Interest expense on Exchange Fund Bills and Notes issued	11,999	441	11,999	441
Interest expense on placements by subsidiaries	–	–	759	2,157
Interest expense on derivative financial instruments	45	17	45	2
Interest expense on lease liabilities	14	16	4	4
Interest expense on other financial instruments	4,543	1,171	1,511	116
TOTAL	16,601	1,645	14,318	2,720

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(d) Operating expenses

	Group		Fund	
	2022	2021	2022	2021
Staff costs				
Salaries and other staff costs	2,018	1,954	1,498	1,477
Retirement benefit costs	157	155	127	127
Premises and equipment expenses				
Depreciation	380	377	277	260
Other premises expenses	102	94	81	76
General operating costs				
Maintenance of office and computer equipment	190	172	158	142
Financial infrastructure operation	214	157	103	92
Professional, consulting and other services	170	149	94	91
Financial information and communication services	93	89	75	72
Public education and publicity	85	59	39	22
External relations	25	16	22	13
Training	8	7	5	5
Expenses relating to investment properties				
– Operating expenses	237	192	–	–
– Variable lease payment expenses	11	12	–	–
Others	58	52	97	31
Recovery of operating expenses for special 100% loan guarantee under the SME Financing Guarantee Scheme (note 14)	(128)	(87)	–	–
Investment management and custodian fees				
Management and custodian fees	1,628	1,968	1,425	1,765
Transaction costs	218	283	214	280
Withholding tax	732	756	732	756
Professional fees and others	239	235	108	114
TOTAL	6,437	6,640	5,055	5,323

The aggregate emoluments of senior staff members (Executive Directors and above) of the Group are as follows:

	Group	
	2022	2021
Fixed pay	87.4	86.8
Variable pay	22.4	22.8
Other benefits	13.7	11.7
	123.5	121.3

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Other benefits shown above included provident funds, medical and life insurance, gratuity and annual leave accrued during the year. There were no other allowances or benefits-in-kind.

The numbers of senior staff members (Executive Directors and above) of the Group whose emoluments including other benefits fell within the following bands were shown in the table below. The number of senior staff posts was 18 (2021: 18). The higher figure in 2021 reflected staff movements during that year.

HK\$	Group	
	2022	2021
1,000,000 or below	–	1
4,500,001 to 5,000,000	1	–
5,000,001 to 5,500,000	3	5
5,500,001 to 6,000,000	1	3
6,000,001 to 6,500,000	4	2
6,500,001 to 7,000,000	3	2
7,000,001 to 7,500,000	2	2
7,500,001 to 8,000,000	1	–
8,000,001 to 8,500,000	–	2
8,500,001 to 9,000,000	1	–
9,500,001 to 10,000,000	1	2
10,000,001 to 10,500,000	1	–
	18	19

(e) Note and coin expenses

These represent reimbursements to the note-issuing banks in respect of note-issuing expenses and expenses incurred directly by the Fund in issuing government-issued currency notes and coins.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(f) Charge for/(Reversal of) impairment allowances

	Group		Fund	
	2022	2021	2022	2021
Charge for/(Reversal of) impairment allowances				
Placements with banks and other financial institutions (note 37.3.3(a))	(3)	3	(1)	–
Debt securities measured at amortised cost (note 37.3.3(b))	1	1	–	–
Loan portfolio (note 37.3.3(c))	9	(4)	–	–
Provision on loan commitments (note 37.3.3(d))	(2)	(18)	–	–
TOTAL	5	(18)	(1)	–

5 REVENUE ACCOUNT FOR INSURANCE BUSINESS

	Group		
	2022		
	Non-life insurance	Life insurance	Total
Gross premiums written	2,558	2,529	5,087
Reinsurance premiums	(347)	–	(347)
Net premiums written	2,211	2,529	4,740
Movement in unearned premiums, net	(1,062)	–	(1,062)
Net commission and levy expenses	(720)	(1)	(721)
Net premiums earned	429	2,528	2,957
Net claims incurred, benefits paid and movement in policyholders' liabilities	(33)	(3,545)	(3,578)
Net premiums earned after provisions	396	(1,017)	(621)

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group		
	2021		
	Non-life insurance	Life insurance	Total
Gross premiums written	3,036	3,003	6,039
Reinsurance premiums	(197)	–	(197)
Net premiums written	2,839	3,003	5,842
Movement in unearned premiums, net	(2,008)	–	(2,008)
Net commission and levy expenses	(962)	–	(962)
Net premiums earned	(131)	3,003	2,872
Net claims incurred, benefits paid and movement in policyholders' liabilities	(28)	(4,051)	(4,079)
Net premiums earned after provisions	(159)	(1,048)	(1,207)

6 INCOME TAX

(a) Income tax charged in the income and expenditure account

	Group		Fund	
	2022	2021	2022	2021
Current tax				
Hong Kong profits tax:				
– current year	46	56	–	–
– over-provision in prior years	(22)	(22)	–	–
Taxation outside Hong Kong:				
– current year	118	216	–	–
– under-provision in prior years	23	4	–	–
Deferred tax				
Charge for current year	110	387	–	–
TOTAL	275	641	–	–

No provision for Hong Kong profits tax has been made for the Fund as it is not subject to Hong Kong tax. The provision for Hong Kong profits tax relates to the tax liabilities of the Fund's subsidiaries. For 2022, it is calculated at 16.5% (2021: 16.5%) of the estimated assessable profits for the year. Tax for overseas subsidiaries is charged at the appropriate current rates of taxation ruling in the relevant countries, which ranged from 15.0% to 19.0% (2021: 15.0% to 19.0%).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Reconciliation between tax expense and accounting profit at applicable tax rates:

	Group		Fund	
	2022	2021	2022	2021
(Deficit)/Surplus before taxation	(279,073)	80,208	(249,470)	(36,481)
Less: Deficit not subject to Hong Kong tax	249,470	36,481	249,470	36,481
(Deficit)/Surplus subject to tax	(29,603)	116,689	–	–
Tax calculated at domestic tax rates in the respective countries	(4,840)	19,488	–	–
Tax effect of:				
– non-deductible expenses	6,816	846	–	–
– non-taxable income	(1,876)	(19,753)	–	–
– utilisation of tax losses previously not recognised	–	(29)	–	–
– tax losses not recognised	62	–	–	–
– under-provision/(over-provision) in prior years	1	(18)	–	–
– effect on deferred tax balances arising from change in tax rates	5	(82)	–	–
– others	107	189	–	–
Income tax charge	275	641	–	–

(b) Tax (recoverable)/payable

	Note	Group		Fund	
		2022	2021	2022	2021
Tax recoverable	16	(44)	(24)	–	–
Tax payable	30	535	693	–	–
		491	669	–	–

(c) Deferred tax

	Note	Group		Fund	
		2022	2021	2022	2021
Deferred tax assets	16	(162)	(122)	–	–
Deferred tax liabilities	30	799	696	–	–
		637	574	–	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The major components of net deferred tax liabilities and the movements during the year are as follows:

	Group					
	Adjustments on bank loans and derivative financial instruments	Fair value changes on investment properties	Accelerated tax depreciation	Tax losses	Others	Net deferred tax liabilities
At 1 January 2021	–	417	33	(201)	(9)	240
Charged/(Credited) to the income and expenditure account	–	310	(1)	85	(7)	387
Change arising from deemed acquisition of a subsidiary	–	–	–	–	(32)	(32)
Exchange differences	–	(22)	–	1	–	(21)
At 31 December 2021	–	705	32	(115)	(48)	574
At 1 January 2022	–	705	32	(115)	(48)	574
Charged/(Credited) to the income and expenditure account	3	150	(4)	(34)	(5)	110
Exchange differences	–	(47)	–	–	–	(47)
At 31 December 2022	3	808	28	(149)	(53)	637

There was no significant unprovided deferred tax as at 31 December 2022 and 2021.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

7 CATEGORIES OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

	Group – 2022					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	209,717	–	–	–	209,717	–
Placements with banks and other financial institutions	197,416	–	–	–	197,416	–
Financial assets measured at fair value through income and expenditure account	3,830,723	–	3,830,723	–	–	–
Financial assets measured at fair value through other comprehensive income	2,508	–	–	2,508	–	–
Derivative financial instruments	2,951	2,951	–	–	–	–
Debt securities measured at amortised cost	13,143	–	–	–	13,143	–
Loan portfolio	109,391	–	–	–	109,391	–
Others	39,820	–	–	–	39,820	–
FINANCIAL ASSETS	4,405,669	2,951	3,830,723	2,508	569,487	–
Certificates of Indebtedness	605,959	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	96,251
Placements by banks and other financial institutions	99,455	–	–	–	–	99,455
Placements by Fiscal Reserves	765,189	–	–	–	–	765,189
Placements by HKSAR Government funds and statutory bodies	449,041	–	–	–	–	449,041
Exchange Fund Bills and Notes issued	1,200,323	–	1,200,323	–	–	–
Derivative financial instruments	7,175	7,175	–	–	–	–
Bank loans	14,714	–	–	–	–	14,714
Other debt securities issued	131,683	–	–	–	–	131,683
Others	214,404	–	–	–	–	214,404
FINANCIAL LIABILITIES	3,597,354	7,175	1,200,323	–	–	2,389,856

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	185,467	–	–	–	185,467	–
Placements with banks and other financial institutions	164,268	–	–	–	164,268	–
Financial assets measured at fair value through income and expenditure account	4,492,896	–	4,492,896	–	–	–
Financial assets measured at fair value through other comprehensive income	4,983	–	–	4,983	–	–
Derivative financial instruments	4,596	4,596	–	–	–	–
Debt securities measured at amortised cost	11,207	–	–	–	11,207	–
Loan portfolio	87,412	–	–	–	87,412	–
Others	30,018	–	–	–	30,018	–
FINANCIAL ASSETS	4,980,847	4,596	4,492,896	4,983	478,372	–
Certificates of Indebtedness	592,364	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	377,516
Placements by Fiscal Reserves	973,303	–	–	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	394,249	–	–	–	–	394,249
Exchange Fund Bills and Notes issued	1,148,569	–	1,148,569	–	–	–
Derivative financial instruments	2,292	2,292	–	–	–	–
Bank loans	16,130	–	–	–	–	16,130
Other debt securities issued	116,334	–	–	–	–	116,334
Others	267,334	–	–	–	–	267,334
FINANCIAL LIABILITIES	3,901,217	2,292	1,148,569	–	–	2,750,356

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	203,850	–	–	–	203,850	–
Placements with banks and other financial institutions	164,908	–	–	–	164,908	–
Financial assets measured at fair value through income and expenditure account	3,396,187	–	3,396,187	–	–	–
Financial assets measured at fair value through other comprehensive income	1,264	–	–	1,264	–	–
Derivative financial instruments	1,534	1,534	–	–	–	–
Others	31,899	–	–	–	31,899	–
FINANCIAL ASSETS	3,799,642	1,534	3,396,187	1,264	400,657	–
Certificates of Indebtedness	605,959	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	96,251
Placements by banks and other financial institutions	99,455	–	–	–	–	99,455
Placements by Fiscal Reserves	765,189	–	–	–	–	765,189
Placements by HKSAR Government funds and statutory bodies	449,041	–	–	–	–	449,041
Placements by subsidiaries	30,588	–	–	–	–	30,588
Exchange Fund Bills and Notes issued	1,200,323	–	1,200,323	–	–	–
Derivative financial instruments	2,833	2,833	–	–	–	–
Others	187,856	–	–	–	–	187,856
FINANCIAL LIABILITIES	3,450,655	2,833	1,200,323	–	–	2,247,499

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2021					
	Total	Derivative financial instruments	Financial assets and financial liabilities measured at fair value through income and expenditure account	Financial assets measured at fair value through other comprehensive income	Financial assets measured at amortised cost	Other financial liabilities
Cash and money at call	179,229	–	–	–	179,229	–
Placements with banks and other financial institutions	121,596	–	–	–	121,596	–
Financial assets measured at fair value through income and expenditure account	4,035,011	–	4,035,011	–	–	–
Financial assets measured at fair value through other comprehensive income	1,336	–	–	1,336	–	–
Derivative financial instruments	3,628	3,628	–	–	–	–
Others	25,185	–	–	–	25,185	–
FINANCIAL ASSETS	4,365,985	3,628	4,035,011	1,336	326,010	–
Certificates of Indebtedness	592,364	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	377,516
Placements by Fiscal Reserves	973,303	–	–	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	394,249	–	–	–	–	394,249
Placements by subsidiaries	26,237	–	–	–	–	26,237
Exchange Fund Bills and Notes issued	1,148,569	–	1,148,569	–	–	–
Derivative financial instruments	1,667	1,667	–	–	–	–
Others	236,195	–	–	–	–	236,195
FINANCIAL LIABILITIES	3,763,226	1,667	1,148,569	–	–	2,612,990

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

8 CASH AND MONEY AT CALL

	Group		Fund	
	2022	2021	2022	2021
At amortised cost				
Balance with central banks	3,943	9,198	3,943	9,198
Balance with banks	205,774	176,269	199,907	170,031
TOTAL	209,717	185,467	203,850	179,229

9 PLACEMENTS WITH BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group		Fund	
	2022	2021	2022	2021
At amortised cost				
Placements in respect of reverse repurchase agreements:				
– with central banks	68,454	23,762	68,454	23,762
– with banks and other financial institutions	1,115	6,932	1,115	6,932
Other placements:				
– with banks	127,852	133,582	95,341	90,905
	197,421	164,276	164,910	121,599
Less: allowances for expected credit losses	(5)	(8)	(2)	(3)
TOTAL	197,416	164,268	164,908	121,596

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

10 FINANCIAL ASSETS MEASURED AT FAIR VALUE THROUGH INCOME AND EXPENDITURE ACCOUNT

	Group		Fund	
	2022	2021	2022	2021
At fair value				
Debt securities				
Treasury bills and commercial papers				
Unlisted	1,033,689	1,175,456	1,033,689	1,175,456
Certificates of deposit				
Unlisted	141,029	180,789	141,029	180,789
Other debt securities				
Listed in Hong Kong	13,307	16,405	13,297	16,394
Listed outside Hong Kong	1,522,330	1,812,417	1,522,330	1,812,417
Unlisted	63,012	104,927	63,012	104,927
Total debt securities	2,773,367	3,289,994	2,773,357	3,289,983
Equity securities				
Listed in Hong Kong	150,413	183,189	150,413	183,189
Listed outside Hong Kong	344,843	403,313	342,961	401,446
Unlisted	137,230	173,573	129,456	160,393
Total equity securities	632,486	760,075	622,830	745,028
Investment funds				
Unlisted	424,870	442,827	–	–
TOTAL	3,830,723	4,492,896	3,396,187	4,035,011

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

11 FINANCIAL ASSETS MEASURED AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	Group		Fund	
	2022	2021	2022	2021
At fair value				
Debt securities				
Listed in Hong Kong	548	754	–	–
Listed outside Hong Kong	696	1,604	–	–
Unlisted	–	1,289	–	–
	1,244	3,647	–	–
Equity securities				
Unlisted	1,264	1,336	1,264	1,336
TOTAL	2,508	4,983	1,264	1,336

The Group's investment in unlisted equity securities as at 31 December 2022 represents a holding of 4,285 shares (2021: 4,285 shares) in the Bank for International Settlements. As at 31 December 2022 and 2021, the nominal value of each share is 5,000 Special Drawing Rights (SDRs) and is 25% paid up (note 35(a)).

12 DERIVATIVE FINANCIAL INSTRUMENTS

Derivative financial instruments refer to financial contracts whose value depends on the value of one or more underlying assets or indices with settlement at a future date.

The Group uses derivative financial instruments to manage its exposures to market risk and facilitate the implementation of investment strategies. The principal derivative financial instruments used are interest rate and currency swap contracts, and forward foreign exchange contracts, which are primarily over-the-counter derivatives, as well as exchange-traded futures contracts.

Market risk arising from derivative financial instruments is included as part of the overall market risk exposure. The credit risk arising from these transactions is marked against the overall credit exposure to individual counterparties. The financial risk management approaches are outlined in note 37.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(a) Fair values of derivative financial instruments

An analysis of the fair values of derivative financial instruments held by product type is set out below:

	Group				Fund			
	2022		2021		2022		2021	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Derivatives categorised as held for trading								
Interest rate derivatives								
Interest rate swap contracts	1,494	954	941	284	549	954	745	235
Interest rate futures contracts	7	–	1	1	7	–	1	1
Equity derivatives								
Equity index futures contracts	86	81	147	54	86	81	147	54
Total return swap contracts	17	50	19	15	17	50	19	15
Currency derivatives								
Forward foreign exchange contracts	745	1,827	2,523	1,376	728	1,636	2,523	1,135
Currency swap contracts	55	38	–	95	–	–	–	–
Bond derivatives								
Bond futures contracts	27	51	46	35	27	51	46	35
Commodity derivatives								
Commodity futures contracts	120	61	147	192	120	61	147	192
	2,551	3,062	3,824	2,052	1,534	2,833	3,628	1,667
Derivatives designated as hedging instruments in fair value hedges								
Interest rate derivatives								
Interest rate swap contracts	30	1,961	214	122	–	–	–	–
Currency derivatives								
Currency swap contracts	370	2,112	485	118	–	–	–	–
	400	4,073	699	240	–	–	–	–
Derivatives designated as hedging instruments in cash flow hedges								
Currency derivatives								
Currency swap contracts	–	40	73	–	–	–	–	–
TOTAL	2,951	7,175	4,596	2,292	1,534	2,833	3,628	1,667

The fair value hedges consist of currency and interest rate swap contracts that are used to protect against changes in the fair value of certain fixed-rate debt securities issued due to movements in market interest rates and foreign exchange rates. The currency swap contracts under cash flow hedges are used to hedge the portion of foreign exchange risks arising from variability of cash flows from foreign currency denominated debt securities issued.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Notional amounts of derivative financial instruments

An analysis of the notional amounts of derivative financial instruments held at the reporting date based on the remaining periods to settlement is set out below. The notional amounts of these instruments indicate the volume of outstanding transactions and do not represent the amounts at risk.

	Group									
	Notional amounts with remaining life of									
	2022					2021				
		1 year or less	5 years or less				1 year or less	5 years or less		
	3 months Total	but over or less	but over 3 months	but over 1 year	Over 5 years	Total	3 months or less	but over 3 months	but over 1 year	Over 5 years
Derivatives categorised as held for trading										
Interest rate derivatives										
Interest rate swap contracts	43,144	611	6,906	25,033	10,594	52,358	2,440	2,863	32,340	14,715
Interest rate futures contracts	21,129	3,761	17,368	–	–	13,300	566	4,607	8,127	–
Equity derivatives										
Equity index futures contracts	35,147	35,147	–	–	–	66,415	66,415	–	–	–
Total return swap contracts	3,902	–	3,902	–	–	2,339	–	2,339	–	–
Currency derivatives										
Forward foreign exchange contracts	154,972	151,726	888	2,241	117	224,622	222,583	836	1,203	–
Currency swap contracts	6,613	220	1,578	4,815	–	4,637	218	775	3,572	72
Bond derivatives										
Bond futures contracts	67,977	67,977	–	–	–	77,601	77,601	–	–	–
Commodity derivatives										
Commodity futures contracts	20,280	14,420	5,860	–	–	37,483	22,869	14,614	–	–
	353,164	273,862	36,502	32,089	10,711	478,755	392,692	26,034	45,242	14,787
Derivatives designated as hedging instruments in fair value hedges										
Interest rate derivatives										
Interest rate swap contracts	68,784	3,726	29,520	33,494	2,044	48,053	2,767	17,387	25,855	2,044
Currency derivatives										
Currency swap contracts	44,325	8,368	9,658	23,584	2,715	41,498	9,748	21,358	9,590	802
	113,109	12,094	39,178	57,078	4,759	89,551	12,515	38,745	35,445	2,846
Derivatives designated as hedging instruments in cash flow hedges										
Currency derivatives										
Currency swap contracts	2,998	–	–	2,998	–	3,385	387	–	2,998	–
TOTAL	469,271	285,956	75,680	92,165	15,470	571,691	405,594	64,779	83,685	17,633

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund									
	Notional amounts with remaining life of									
	2022					2021				
	1 year or less		5 years or less		Over 5 years	1 year or less		5 years or less		Over 5 years
	3 months or less	but over 3 months	but over 1 year	but over 5 years		3 months or less	but over 3 months	but over 1 year	but over 5 years	
Total						Total				
Derivatives categorised as held for trading										
Interest rate derivatives										
Interest rate swap contracts	24,109	600	2,447	12,550	8,512	30,922	1,340	2,105	19,251	8,226
Interest rate futures contracts	21,129	3,761	17,368	–	–	13,300	566	4,607	8,127	–
Equity derivatives										
Equity index futures contracts	35,147	35,147	–	–	–	66,415	66,415	–	–	–
Total return swap contracts	3,902	–	3,902	–	–	2,339	–	2,339	–	–
Currency derivatives										
Forward foreign exchange contracts	147,119	146,890	229	–	–	221,667	221,170	497	–	–
Bond derivatives										
Bond futures contracts	67,977	67,977	–	–	–	77,601	77,601	–	–	–
Commodity derivatives										
Commodity futures contracts	20,280	14,420	5,860	–	–	37,483	22,869	14,614	–	–
TOTAL	319,663	268,795	29,806	12,550	8,512	449,727	389,961	24,162	27,378	8,226

13 DEBT SECURITIES MEASURED AT AMORTISED COST

	Group		Fund	
	2022	2021	2022	2021
At amortised cost				
Debt securities				
Listed in Hong Kong	6,902	6,858	–	–
Listed outside Hong Kong	3,336	2,411	–	–
Unlisted	2,910	1,942	–	–
	13,148	11,211	–	–
Less: allowances for expected credit losses	(5)	(4)	–	–
TOTAL	13,143	11,207	–	–

Fair value information of the above debt securities is provided in note 38.2.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

14 LOAN PORTFOLIO

	Group		Fund	
	2022	2021	2022	2021
At amortised cost				
Loans with special 100% guarantee under the SME Financing Guarantee Scheme ¹	90,162	71,063	–	–
Mortgage loans	3,781	3,623	–	–
Other loans	15,617	12,886	–	–
	109,560	87,572	–	–
Less: allowances for expected credit losses	(169)	(160)	–	–
TOTAL	109,391	87,412	–	–

¹ The Hong Kong Mortgage Corporation Limited, a wholly-owned subsidiary of the Fund, launched the special 100% loan guarantee under the SME Financing Guarantee Scheme (SFGS) through a subsidiary, HKMC Insurance Limited, in April 2020. The loans, which are fully guaranteed by the HKSAR Government, are originated by the participating lenders and sold to The Hong Kong Mortgage Corporation Limited without recourse upon origination. Accordingly, the default losses of these loans are covered by the HKSAR Government's guarantee and no impairment allowance is recognised in view of the minimal default risk of the HKSAR Government.

15 GOLD

	Group and Fund	
	2022	2021
At fair value		
Gold		
66,798 ounces (2021: 66,798 ounces)	945	948

The fair value of gold is based on quoted price in an active market. It is classified under Level 1 of the fair value hierarchy.

16 OTHER ASSETS

	Group		Fund	
	2022	2021	2022	2021
Unsettled sales and redemption of securities	14,826	12,783	13,841	11,021
Interest and dividends receivable	14,151	10,502	12,818	9,751
Prepayments, receivables and other assets	10,090	6,295	5,073	4,174
Staff housing loans	181	197	181	197
Loan to the International Monetary Fund	34	87	34	87
Reinsurance assets	734	491	–	–
Tax recoverable	44	24	–	–
Deferred tax assets	162	122	–	–
TOTAL	40,222	30,501	31,947	25,230

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

17 INTERESTS IN SUBSIDIARIES

	Fund	
	2022	2021
Unlisted shares, at cost	12,462	9,962
Loans to subsidiaries	191,694	190,196
TOTAL	204,156	200,158

The following is a list of the principal subsidiaries which are wholly owned by the Fund (except for Hong Kong Note Printing Limited¹) as at 31 December 2022:

Name of company	Principal activities	Issued equity capital
The Hong Kong Mortgage Corporation Limited	Investment in mortgages and loans	HK\$12,000,000,000
HKMC Annuity Limited ²	Long term insurance	HK\$10,000,000,000
HKMC Insurance Limited ²	General insurance	HK\$3,000,000,000
HKMC Mortgage Management Limited ²	Loan purchase, origination and servicing	HK\$1,000,000
Hong Kong Note Printing Limited	Banknote printing	HK\$255,000,000
Hong Kong FMI Services Limited	Performance of financial market infrastructure related operations	HK\$167,000,000
Hong Kong Academy of Finance Limited	Financial leadership development	HK\$150,000,000
BNR Finance Company Limited	Investment holding	HK\$1
BNR Investment Company Limited	Investment holding	HK\$1
Debt Capital Solutions Company Limited	Investment holding	HK\$1
Drawbridge Investment Limited	Investment holding	HK\$1
Eight Finance Investment Company Limited	Investment holding	HK\$1
Green 2021 Investment Company Limited	Investment holding	HK\$1
Pine Gate Investment Company Limited	Investment holding	HK\$1
Stewardship Investment Company Limited	Investment holding	HK\$1
Stratosphere Finance Company Limited	Investment holding	HK\$1
Real Avenue Investment Company Limited	Investment properties holding	HK\$1
Real Boulevard Investment Company Limited	Investment properties holding	HK\$1
Real Gate Investment Company Limited	Investment properties holding	HK\$1
Real Horizon Investment Company Limited	Investment properties holding	HK\$1
Real Plaza Investment Company Limited	Investment properties holding	HK\$1
Real Summit Investment Company Limited	Investment properties holding	HK\$1
Real Zenith Investment Company Limited	Investment properties holding	HK\$1

¹ 55% equity interest held by the Fund.

² Subsidiaries indirectly held by the Fund through The Hong Kong Mortgage Corporation Limited.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The place of incorporation and operation of the above subsidiaries are in Hong Kong.

The Fund has committed to inject additional funds up to HK\$20 billion (2021: HK\$20 billion) to The Hong Kong Mortgage Corporation Limited as equity for the purpose of financing The Hong Kong Mortgage Corporation Limited's additional capital injection to HKMC Annuity Limited for maintaining its margin of solvency above a certain level. During the year, capital injection of HK\$2.5 billion (2021: HK\$2.5 billion) to The Hong Kong Mortgage Corporation Limited was made under this arrangement and the outstanding commitment as at 31 December 2022 was HK\$15 billion (2021: HK\$17.5 billion).

The Fund has provided The Hong Kong Mortgage Corporation Limited with a revolving credit facility of HK\$80 billion (2021: HK\$80 billion) at prevailing market interest rates. As at 31 December 2022, there was no outstanding balance due from The Hong Kong Mortgage Corporation Limited under this facility (2021: Nil).

Loans to other subsidiaries are unsecured, interest-free and repayable on demand.

Placements by subsidiaries are disclosed in note 26.

The financial statements of the Fund's subsidiaries are audited by firms other than the Audit Commission. The aggregate assets and liabilities of these subsidiaries not audited by the Audit Commission amounted to approximately 15% (2021: 14%) and 5% (2021: 4%) of the Group's total assets and total liabilities, respectively.

18 INTERESTS IN ASSOCIATES AND JOINT VENTURES

	Group		Fund	
	2022	2021	2022	2021
Associates ¹	3,620	3,320	116	54
Joint ventures ²	38,018	44,225	–	–
TOTAL	41,638	47,545	116	54

¹ Investment in an associate, comprising unlisted shares, is held directly by the Fund. In the Fund's balance sheet, the investment is stated at cost of HK\$5,000 (2021: HK\$5,000).

² The Fund does not directly hold investment in joint ventures.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

18.1 Interests in associates

The Group holds investments in six associates. One associate, incorporated in Hong Kong, provides interbank clearing services. The other five associates, incorporated outside Hong Kong, hold overseas investment properties and investment funds. The Group holds equity interests in these associates ranging from 16% to 50%.

Aggregate information of the Group's associates, which are not individually material, is summarised below:

	Group	
	2022	2021
Share of (loss)/profit for the year	(117)	340
Share of other comprehensive loss	(337)	(30)
Share of total comprehensive (loss)/income	(454)	310
Aggregate carrying amount of interests in associates	3,620	3,320

As at 31 December 2022, the Group has no outstanding investment commitments to associates (2021: Nil).

The Fund has provided an associate with a non-revolving credit facility of HK\$116 million (2021: HK\$116 million) for developing a financial infrastructure. The loan facility, which will expire in October 2023, is unsecured, interest-free and repayable by 6 October 2023. A loan of HK\$62 million (2021: HK\$54 million) was drawn during the year and there was no outstanding commitment under the loan facility as at 31 December 2022 (2021: HK\$62 million).

18.2 Interests in joint ventures

The Group holds investments in 22 joint ventures, which are all incorporated outside Hong Kong. The principal activities of these joint ventures are holding overseas investment properties. The Group holds equity interests in these joint ventures ranging from 25% to 51%. Although the Group's equity interest in some of these joint ventures exceeds 50%, they are categorised as joint ventures because important business decisions relating to these joint ventures are required to be made with the consent of all parties. As at 31 December 2022, the aggregate interest in these joint ventures amounted to 0.85% (2021: 0.87%) of the Group's total assets.

Aggregate information of the Group's joint ventures, which are not individually material, is summarised below:

	Group	
	2022	2021
Share of (loss)/profit for the year	(4,589)	3,472
Share of other comprehensive loss	(1,161)	(505)
Share of total comprehensive (loss)/income	(5,750)	2,967
Aggregate carrying amount of interests in joint ventures	38,018	44,225

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Group's share of outstanding investment commitments to joint ventures is shown below:

	Group	
	2022	2021
Commitments to contribute funds	5,943	3,008

19 INVESTMENT PROPERTIES

	Group		Fund	
	2022	2021	2022	2021
At fair value				
At 1 January	27,089	23,135	–	–
Additions	791	495	–	–
Additions through deemed acquisition of a subsidiary	–	4,198	–	–
Change in fair value on revaluation	(2,000)	(123)	–	–
Exchange differences	(2,486)	(616)	–	–
At 31 December	23,394	27,089	–	–

The carrying amount of the Group's investment properties is analysed as follows:

	Group		Fund	
	2022	2021	2022	2021
Held outside Hong Kong				
on freehold	11,720	13,045	–	–
on long-term lease (over 50 years)	11,674	14,044	–	–
TOTAL	23,394	27,089	–	–

The Group's investment properties are leased to third parties under operating leases. The gross rental income received and receivable by the Group and the related expenses in respect of these investment properties are summarised as follows:

	Group		Fund	
	2022	2021	2022	2021
Gross rental income	1,267	1,281	–	–
Direct expenses	(248)	(204)	–	–
Net rental income	1,019	1,077	–	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Group's total future minimum lease payments receivable under non-cancellable operating leases are as follows:

	Group		Fund	
	2022	2021	2022	2021
Within one year	967	1,143	–	–
After one year but not later than five years	2,263	3,077	–	–
After five years but not later than ten years	414	611	–	–
After ten years but not later than fifteen years	59	127	–	–
TOTAL	3,703	4,958	–	–

As at 31 December 2022, investment properties with a fair value of HK\$22,822 million (2021: HK\$26,398 million) were pledged to secure general banking facilities granted to the Group (note 28).

19.1 Fair value measurement of investment properties

The Group's investment properties are revalued by independent professional valuers on an open market value basis at each reporting date. The valuers have valued the Group's investment properties based on income approach with reference to comparable market evidence. The market value which is considered as the fair value of each investment property reflects, among other things, rental income from current leases and assumptions about rental income from future leases in light of the current market conditions. The fair value also reflects, on a similar basis, any cash outflows that could be expected in respect of the property. For all properties, their current use equates to the highest and best use. There has been no change to the valuation technique during the year.

Under the income approach, fair value is estimated using assumptions regarding the benefits and liabilities of ownership over the asset's life including the terminal value. This method involves the projection of a series of cash flows on a real property interest. To this projected cash flow series, a market-derived discount rate is applied to establish the present value of the income stream associated with the asset. The significant unobservable inputs used in the income approach are the selection of discount rates which ranged from 4.20% to 7.90% (2021: 4.25% to 7.25%), equivalent yields which ranged from 4.46% to 6.48% (2021: 4.06% to 5.62%) and terminal capitalisation rates which ranged from 3.20% to 6.35% (2021: 2.90% to 6.20%). Significant increases or decreases in any of those inputs in isolation would result in significantly lower or higher fair value measurements, respectively.

All of the Group's investment properties are classified under Level 3 of the fair value hierarchy. There were no transfers into or out of Level 3 during the year. The net losses recognised in the income and expenditure account relating to revaluation of investment properties held at the reporting date were HK\$2,000 million (2021: HK\$123 million).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

20 PROPERTY, PLANT AND EQUIPMENT

	Group				
	Owned assets			Right-of-use assets	Total
	Premises	Plant and equipment	Computer software licences and system development costs	Premises	
Cost					
At 1 January 2021	3,854	1,683	535	738	6,810
Additions	–	198	78	13	289
Disposals/write-offs	–	(32)	–	(21)	(53)
At 31 December 2021	3,854	1,849	613	730	7,046
At 1 January 2022	3,854	1,849	613	730	7,046
Additions	3	175	273	30	481
Disposals/write-offs	–	(1)	–	(3)	(4)
At 31 December 2022	3,857	2,023	886	757	7,523
Accumulated depreciation					
At 1 January 2021	1,515	1,270	420	164	3,369
Charge for the year	88	135	27	127	377
Written back on disposals/write-offs	–	(32)	–	(21)	(53)
At 31 December 2021	1,603	1,373	447	270	3,693
At 1 January 2022	1,603	1,373	447	270	3,693
Charge for the year	88	141	32	119	380
Written back on disposals/write-offs	–	(1)	–	(2)	(3)
At 31 December 2022	1,691	1,513	479	387	4,070
Net book value					
At 31 December 2022	2,166	510	407	370	3,453
At 31 December 2021	2,251	476	166	460	3,353

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund				
	Owned assets			Right-of-use assets	Total
	Premises	Plant and equipment	Computer software licences and system development costs	Premises	
Cost					
At 1 January 2021	3,843	782	535	526	5,686
Additions	–	126	78	5	209
Disposals/write-offs	–	(1)	–	(4)	(5)
At 31 December 2021	3,843	907	613	527	5,890
At 1 January 2022	3,843	907	613	527	5,890
Additions	–	140	273	30	443
At 31 December 2022	3,843	1,047	886	557	6,333
Accumulated depreciation					
At 1 January 2021	1,505	605	420	140	2,670
Charge for the year	87	69	27	77	260
Written back on disposals/write-offs	–	(1)	–	(4)	(5)
At 31 December 2021	1,592	673	447	213	2,925
At 1 January 2022	1,592	673	447	213	2,925
Charge for the year	88	76	32	81	277
At 31 December 2022	1,680	749	479	294	3,202
Net book value					
At 31 December 2022	2,163	298	407	263	3,131
At 31 December 2021	2,251	234	166	314	2,965

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The net book value of owned premises comprises:

	Group		Fund	
	2022	2021	2022	2021
In Hong Kong				
Leasehold land and the building situated thereon (leasehold between 10 and 50 years)	2,145	2,230	2,142	2,230
Outside Hong Kong				
Freehold land and the building situated thereon	21	21	21	21
TOTAL	2,166	2,251	2,163	2,251

21 CERTIFICATES OF INDEBTEDNESS, GOVERNMENT-ISSUED CURRENCY NOTES AND COINS IN CIRCULATION

	Group and Fund			
	Certificates of Indebtedness		Government-issued currency notes and coins in circulation	
	2022	2021	2022	2021
Carrying amount	605,959	592,364	13,160	13,126
Reconciliation with face value:				
Hong Kong dollar face value	605,575	592,645	13,151	13,132
Linked exchange rate for calculating the US dollars required for redemption	US\$1=HK\$7.80	US\$1=HK\$7.80	US\$1=HK\$7.80	US\$1=HK\$7.80
US dollars required for redemption	US\$77,638 million	US\$75,980 million	US\$1,686 million	US\$1,684 million
Market exchange rate for translation into Hong Kong dollars	US\$1=HK\$7.80495	US\$1=HK\$7.7963	US\$1=HK\$7.80495	US\$1=HK\$7.7963
Carrying amount	605,959	592,364	13,160	13,126

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

22 BALANCE OF THE BANKING SYSTEM

Under the interbank payment system based on Real Time Gross Settlement principles, all licensed banks maintain a Hong Kong dollar clearing account with the Hong Kong Monetary Authority (HKMA) for the account of the Fund. The aggregate amount in these clearing accounts, which must not have a negative balance, represents the total level of liquidity in the interbank market.

Under the weak-side Convertibility Undertaking, the HKMA undertakes to convert Hong Kong dollars in these clearing accounts into US dollars at the fixed exchange rate of US\$1=HK\$7.85. Likewise, under the strong-side Convertibility Undertaking, licensed banks can convert US dollars into Hong Kong dollars in these accounts, as the HKMA undertakes to buy US dollars at the fixed exchange rate of US\$1=HK\$7.75. Within the Convertibility Zone bounded by the two Convertibility Undertakings, the HKMA may choose to conduct market operations in a manner consistent with Currency Board principles. Such operations can result in matching changes in the balances of these accounts.

The balance of the banking system is repayable on demand and non-interest-bearing.

23 PLACEMENTS BY BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group and Fund	
	2022	2021
At amortised cost		
Placements by central banks	22,455	–
Placements by banks	77,000	–
TOTAL	99,455	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

24 PLACEMENTS BY FISCAL RESERVES

	Group and Fund	
	2022	2021
Placements by Operating and Capital Reserves		
(i) with interest payable at a fixed rate determined annually		
General Revenue Account	167,032	392,933
Capital Works Reserve Fund	208,017	239,948
Civil Service Pension Reserve Fund	53,864	48,813
Innovation and Technology Fund	29,278	27,328
Lotteries Fund	23,404	22,481
Capital Investment Fund	20,429	21,257
Loan Fund	7,886	2,785
Disaster Relief Fund	48	88
	509,958	755,633
(ii) with interest payable at market-based rates		
General Revenue Account	4	3
	509,962	755,636
Placements by Future Fund with interest payable at a composite rate determined annually		
Land Fund	250,427	212,867
General Revenue Account	4,800	4,800
	255,227	217,667
TOTAL	765,189	973,303

Fiscal Reserves comprise Operating and Capital Reserves and the Future Fund.

Placements by Operating and Capital Reserves are repayable on demand. Interest on the majority of these placements is payable at a fixed rate determined in January each year. The rate is the average annual investment return of the Fund's Investment Portfolio for the past six years or the average annual yield of three-year Government Bond for the previous year subject to a minimum of zero percent, whichever is the higher. This rate was fixed at 5.6% per annum for 2022 (2021: 4.7%).

The Future Fund was established on 1 January 2016. Placements by Future Fund comprise an initial endowment from the balance of the Land Fund, periodic top-ups from the General Revenue Account and ad-hoc transfers from the Land Fund as directed by the Financial Secretary. These placements are divided into two portions: one linked with the performance of the Investment Portfolio and another linked with the performance of the Long-Term Growth Portfolio. Interest on these placements is payable at a composite rate which is computed annually, on a weighted average basis, with reference to the above-mentioned fixed rate determined for placements by Operating and Capital Reserves and the annual rate of return linked with the performance of the Long-Term Growth Portfolio. The composite rate for 2022 was -3.0% (2021: 17.8%). In accordance with the directive made by the Financial Secretary in October 2022, the repayment date of placements by Future Fund and the interest thereon (note 30) was extended from 31 December 2025 to 31 December 2030 unless otherwise directed by the Financial Secretary according to the terms of the placements.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

25 PLACEMENTS BY HKSAR GOVERNMENT FUNDS AND STATUTORY BODIES

	Group and Fund	
	2022	2021
Placements with interest payable at a fixed rate¹ determined annually		
Bond Fund	266,392	208,067
Community Care Fund	6,399	6,060
Elite Athletes Development Fund	9,519	10,684
Employees Retraining Board	12,227	11,578
Environment and Conservation Fund	6,226	6,055
Hong Kong Housing Authority	38,846	34,887
Hospital Authority	16,601	16,263
Language Fund	6,947	6,732
Research Endowment Fund	52,267	50,914
Samaritan Fund	7,127	6,749
Trading Funds	10,611	10,048
West Kowloon Cultural District Authority	–	8,306
Other funds ²	14,261	13,719
	447,423	390,062
Placements with interest payable at market-based rates		
Deposit Protection Scheme Fund	1,618	4,187
TOTAL	449,041	394,249

¹ The rate is the average annual investment return of the Fund's Investment Portfolio for the past six years or the average annual yield of three-year Government Bond for the previous year subject to a minimum of zero percent, whichever is the higher. This rate was fixed at 5.6% per annum for 2022 (2021: 4.7%).

² This is a collective placement by 15 HKSAR Government funds (2021: 15 HKSAR Government funds).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

26 PLACEMENTS BY SUBSIDIARIES

	Fund	
	2022	2021
Placements by:		
HKMC Annuity Limited ¹	23,690	18,251
HKMC Insurance Limited ²	3,507	3,321
The Hong Kong Mortgage Corporation Limited ³	3,391	4,665
TOTAL	30,588	26,237

¹ Placements by HKMC Annuity Limited are unsecured, interest-bearing and have fixed repayment terms from 6 to 10 years.

² Placements by HKMC Insurance Limited are unsecured, interest-bearing and have a fixed repayment term of 6 years.

³ Placements by The Hong Kong Mortgage Corporation Limited are unsecured, interest-bearing and repayable on demand.

27 EXCHANGE FUND BILLS AND NOTES ISSUED

	Group and Fund	
	2022	2021
At fair value		
Exchange Fund Bills and Notes issued		
Exchange Fund Bills	1,179,895	1,124,908
Exchange Fund Notes	20,527	23,861
	1,200,422	1,148,769
Exchange Fund Bills held	(99)	(200)
TOTAL	1,200,323	1,148,569

Exchange Fund Bills and Notes (EFBN) issued are unsecured obligations of the Fund and are one of the components of the Monetary Base in the Currency Board Account. Exchange Fund Bills are issued by the Fund for maturities not exceeding one year. Exchange Fund Notes are issued by the Fund with maturities of 2 years or more.

Since January 2015, the Fund has ceased to issue Exchange Fund Notes with tenors of three years or above to avoid overlapping with Government Bonds of the same tenors. To maintain the overall size of Exchange Fund paper, the Fund has issued additional Exchange Fund Bills to replace maturing Exchange Fund Notes of those tenors.

Exchange Fund Bills held by the Fund as a result of market making activities are considered as redemption of the bills issued and are netted off.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

An analysis of the nominal value of EFBN issued at the beginning and the end of year is set out below:

	Group and Fund			
	2022		2021	
	Exchange Fund Bills	Exchange Fund Notes	Exchange Fund Bills	Exchange Fund Notes
Issued by the Currency Board Operations segment				
Nominal value at 1 January	1,125,217	23,400	1,043,130	25,000
Issuance	3,813,938	4,800	3,399,074	4,800
Redemption	(3,752,857)	(7,000)	(3,316,987)	(6,400)
Nominal value at 31 December	1,186,298	21,200	1,125,217	23,400
Long positions held by the Financial Stability and Other Activities segment				
Nominal value at 31 December	(100)	–	(200)	–
Total nominal value	1,186,198	21,200	1,125,017	23,400
Carrying amount, at fair value	1,179,796	20,527	1,124,708	23,861
Difference	6,402	673	309	(461)

The fair value changes of EFBN issued are attributable to changes in benchmark interest rates.

28 BANK LOANS

	Group		Fund	
	2022	2021	2022	2021
At amortised cost				
Bank loans repayable:				
Within one year	45	24	–	–
After one year but not later than two years	2,632	48	–	–
After two years but not later than five years	12,037	8,798	–	–
After five years but not later than ten years	–	7,260	–	–
TOTAL	14,714	16,130	–	–

As at 31 December 2022, the banking facilities of the Group were secured by mortgage over the investment properties with a fair value of HK\$22,822 million (2021: HK\$26,398 million) (note 19).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

29 OTHER DEBT SECURITIES ISSUED

	Group		Fund	
	2022	2021	2022	2021
Debt securities issued, carried at amortised cost	24,068	25,609	–	–
Debt securities issued, designated as hedged items under fair value hedge	104,796	87,272	–	–
Debt securities issued, designated as hedged items under cash flow hedge	2,819	3,453	–	–
TOTAL	131,683	116,334	–	–

An analysis of the nominal value of other debt securities issued at the beginning and the end of year is set out below:

	Group		Fund	
	2022	2021	2022	2021
Total debt securities issued				
Nominal value at 1 January	115,960	61,953	–	–
Issuance	97,594	109,470	–	–
Redemption	(77,622)	(55,533)	–	–
Exchange differences	(324)	70	–	–
Nominal value at 31 December	135,608	115,960	–	–
Carrying amount	131,683	116,334	–	–
Difference	3,925	(374)	–	–

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

30 OTHER LIABILITIES

	Group		Fund	
	2022	2021	2022	2021
Accrued interest on placements by Fiscal Reserves (Future Fund) ¹	135,233	169,253	135,233	169,253
Accrued interest on placements by a subsidiary	–	–	2,211	2,396
Other interest payable	2,149	849	407	93
Unsettled purchases of securities	44,540	33,882	44,540	33,882
Accrued charges and other liabilities	18,048	28,516	5,323	7,301
Insurance liabilities	20,855	16,784	–	–
Lease liabilities	751	887	284	337
Housing Reserve ²	–	23,079	–	23,079
Tax payable	535	693	–	–
Deferred tax liabilities	799	696	–	–
Provision for expected credit losses on loan commitments	21	23	–	–
TOTAL	222,931	274,662	187,998	236,341

¹ In accordance with the directives made by the Financial Secretary in December 2015 and October 2022, the accrued interest on placements by Future Fund should be rolled over and compounded at the composite rate (note 24) on an annual basis and shall only be paid upon maturity of the placements (i.e. 31 December 2030) unless otherwise directed by the Financial Secretary according to the terms of the placements.

² In accordance with the directives made by the Financial Secretary in December 2014 and December 2015, the accrued interest on placements by Fiscal Reserves earned for 2014 and 2015 with a total of HK\$72,642 million were not paid on 31 December of the respective years but were set aside for the Housing Reserve which was established for the purpose of financing the development of public housing and public housing-related projects and infrastructure. The Housing Reserve earns interest at the fixed rate (note 24) on an annual basis. As announced by the Financial Secretary in his 2019-20 Budget Speech in February 2019, the Housing Reserve will be paid and brought back to the Fiscal Reserves over four financial years ending 31 March 2020 to 2023. As at 31 December 2022, the balance of the Housing Reserve had been fully paid and brought back to the Fiscal Reserves.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

31 CASH AND CASH EQUIVALENTS AND OTHER CASH FLOW INFORMATION

(a) Components of cash and cash equivalents

	Group		Fund	
	2022	2021	2022	2021
Cash and money at call	209,717	185,467	203,850	179,229
Placements with banks and other financial institutions	176,271	125,550	148,520	114,321
Treasury bills and commercial papers	49,212	59,936	49,212	59,936
Certificate of deposit	8,868	–	8,868	–
TOTAL	444,068	370,953	410,450	353,486

(b) Reconciliation of cash and cash equivalents

	Note	Group		Fund	
		2022	2021	2022	2021
Amounts shown in the balance sheet					
Cash and money at call	8	209,717	185,467	203,850	179,229
Placements with banks and other financial institutions	9	197,421	164,276	164,910	121,599
Treasury bills and commercial papers	10	1,033,689	1,175,456	1,033,689	1,175,456
Certificates of deposit	10	141,029	180,789	141,029	180,789
		1,581,856	1,705,988	1,543,478	1,657,073
Less: Amounts with original maturity beyond 3 months		(1,137,788)	(1,335,035)	(1,133,028)	(1,303,587)
Cash and cash equivalents in the statement of cash flows		444,068	370,953	410,450	353,486

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(c) Reconciliation of liabilities arising from financing activities

The table below shows changes in the liabilities arising from financing activities, which are liabilities for which cash flows were, or future cash flows will be, classified in the statement of cash flows as cash flows from financing activities.

	Group			Fund
	Bank loans (note 28)	Other debt securities issued (note 29)	Lease liabilities (note 30)	Lease liabilities (note 30)
At 1 January 2021	12,050	62,587	990	409
Changes from financing cash flows				
Bank loans raised	1,498	–	–	–
Proceeds from issue of other debt securities	–	109,360	–	–
Redemption of other debt securities issued	–	(55,533)	–	–
Principal portion of lease payments	–	–	(115)	(77)
Non-cash changes				
Increase in lease liabilities relating to new leases	–	–	13	5
Increase in bank loans arising from deemed acquisition of a subsidiary	2,975	–	–	–
Amortisation	16	112	16	4
Exchange differences	(409)	71	(1)	–
Change in fair value	–	(263)	–	–
Other changes				
Interest portion of lease payments	–	–	(16)	(4)
At 31 December 2021	16,130	116,334	887	337
At 1 January 2022	16,130	116,334	887	337
Changes from financing cash flows				
Repayment of bank loans	(22)	–	–	–
Proceeds from issue of other debt securities	–	97,470	–	–
Redemption of other debt securities issued	–	(77,622)	–	–
Principal portion of lease payments	–	–	(121)	(83)
Non-cash changes				
Increase in lease liabilities relating to new leases	–	–	30	30
Amortisation	25	92	14	4
Exchange differences	(1,419)	(323)	(45)	–
Change in fair value	–	(4,268)	–	–
Other changes				
Interest portion of lease payments	–	–	(14)	(4)
At 31 December 2022	14,714	131,683	751	284

The total cash outflows for leases of the Group and the Fund in 2022 were HK\$147 million (2021: HK\$143 million) and HK\$87 million (2021: HK\$81 million) respectively.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

32 OPERATING SEGMENT INFORMATION

The Group determines its operating segments based on the reports reviewed by the chief operating decision maker. As a central banking institution, the HKMA is responsible for managing the Fund and maintaining the monetary and banking stability of Hong Kong. The Group comprises operating segments as stated in note 2.21.

	Group							
	Currency Board Operations (note (a))		Reserves Management		Financial Stability and Other Activities		Total	
	2022	2021	2022	2021	2022	2021	2022	2021
Income								
Interest and dividend income	30,029	5,658	37,831	35,194	2,998	1,229	70,858	42,081
Investment (losses)/gains	(43,007)	1,624	(226,442)	149,642	(4,524)	1,648	(273,973)	152,914
Other income	–	–	66	128	3,624	3,491	3,690	3,619
	(12,978)	7,282	(188,545)	184,964	2,098	6,368	(199,425)	198,614
Expenditure								
Interest expense	11,999	441	49,951	110,431	2,760	623	64,710	111,495
Other expenses	1,605	1,798	1,994	2,150	6,633	6,963	10,232	10,911
	13,604	2,239	51,945	112,581	9,393	7,586	74,942	122,406
(Deficit)/Surplus before share of (loss)/ profit of associates and joint ventures	(26,582)	5,043	(240,490)	72,383	(7,295)	(1,218)	(274,367)	76,208
Share of (loss)/profit of associates and joint ventures, net of tax	–	–	(4,767)	3,773	61	39	(4,706)	3,812
Gain on disposal of a joint venture	–	–	–	188	–	–	–	188
(Deficit)/Surplus before taxation	(26,582)	5,043	(245,257)	76,344	(7,234)	(1,179)	(279,073)	80,208

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group									
	Currency Board Operations (note (a))		Reserves Management		Financial Stability and Other Activities		Re-allocation (notes (b) & (c))		Total	
	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Assets										
Backing Assets										
Investment in designated										
US dollar assets	2,120,691	2,347,389	–	–	–	–	–	–	2,120,691	2,347,389
Interest receivable on designated										
US dollar assets	5,217	2,412	–	–	–	–	–	–	5,217	2,412
Net accounts (payable)/receivable	(15,942)	–	–	–	–	–	22,966	–	7,024	–
Other investments	–	–	2,077,372	2,473,375	230,911	201,251	(99)	(200)	2,308,184	2,674,426
Other assets	–	–	22,687	27,020	11,698	8,415	–	603	34,385	36,038
TOTAL ASSETS	2,109,966	2,349,801	2,100,059	2,500,395	242,609	209,666	22,867	403	4,475,501	5,060,265
Liabilities										
Monetary Base										
Certificates of Indebtedness	605,959	592,364	–	–	–	–	–	–	605,959	592,364
Government-issued currency notes										
and coins in circulation	13,160	13,126	–	–	–	–	–	–	13,160	13,126
Balance of the banking system	96,251	377,516	–	–	–	–	–	–	96,251	377,516
Exchange Fund Bills and Notes issued	1,200,422	1,148,769	–	–	–	–	(99)	(200)	1,200,323	1,148,569
Interest payable on Exchange Fund Notes	99	92	–	–	–	–	–	–	99	92
Net accounts payable/(receivable)	518	(603)	–	–	–	–	–	603	518	–
Placements by banks and other										
financial institutions	–	–	77,000	–	22,455	–	–	–	99,455	–
Placements by Fiscal Reserves	–	–	765,189	973,303	–	–	–	–	765,189	973,303
Placements by HKSAR Government										
funds and statutory bodies	–	–	447,423	390,062	1,618	4,187	–	–	449,041	394,249
Bank loans	–	–	14,714	16,130	–	–	–	–	14,714	16,130
Other debt securities issued	–	–	608	681	131,075	115,653	–	–	131,683	116,334
Other liabilities	–	–	165,888	236,790	40,635	40,072	22,966	–	229,489	276,862
TOTAL LIABILITIES	1,916,409	2,131,264	1,470,822	1,616,966	195,783	159,912	22,867	403	3,605,881	3,908,545

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(a) Currency Board Operations

Starting from 1 October 1998, specific US dollar assets of the Fund have been designated to back the Monetary Base, which comprises Certificates of Indebtedness, government-issued currency notes and coins in circulation, balance of the banking system and EFBN issued. While specific assets of the Fund have been earmarked for backing the Monetary Base, all the Fund's assets are available for the purpose of supporting the Hong Kong dollar exchange rate under the Linked Exchange Rate system.

In accordance with an arrangement approved by the Financial Secretary in January 2000, assets can be transferred between the Backing Portfolio and general reserves when the Backing Ratio reaches either the upper trigger point (112.5%) or the lower trigger point (105%). This arrangement allows transfer of excess assets out of the Backing Portfolio to maximise their earning potential while ensuring that there are sufficient liquid assets in the Backing Portfolio. Notwithstanding the deficit or surplus recorded in 2022 and 2021, the Backing Ratio did not reach the above trigger points. It stood at 110.12% as at 31 December 2022 (2021: 110.24%).

(b) Re-allocation of assets and liabilities

For the purpose of the Currency Board Operations segment, certain liabilities of the Fund are deducted from the Backing Assets and certain assets are deducted from the Monetary Base in order to allow proper computation of the Backing Ratio. The following items are re-allocation adjustments to reconcile the segmental information to the Group balance sheet:

- (i) the Backing Assets are presented on a net basis in the Currency Board Operations. Accounts payable for unsettled purchases of securities and redemption of Certificates of Indebtedness are included in "net accounts (payable)/receivable" to offset corresponding investments in the Backing Assets. As at 31 December 2022, deductions from the Backing Assets comprised "other liabilities" of HK\$22,966 million (2021: Nil); and
- (ii) the Monetary Base is also presented on a net basis. As Hong Kong dollar interest rate swaps have been used as a means to manage the cost of issuing Exchange Fund Notes, interest receivable and unrealised gains on these interest rate swaps are included in "net accounts payable/(receivable)" to reduce the Monetary Base. As at 31 December 2022, there were no "other assets" (2021: HK\$603 million, comprised interest receivable of HK\$27 million and unrealised gains of HK\$576 million) deducted from the Monetary Base.

(c) Exchange Fund Bills and Notes held

EFBN held by the Financial Stability and Other Activities segment are treated as redemption of EFBN issued in the Currency Board Operations segment.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

33 PLEDGED ASSETS

Assets are pledged as margin for futures contracts, over-the-counter derivative financial instruments and securities lending agreements and as collateral for securing general banking facilities. Securities lent do not include EFBN in issue. There are no financial assets pledged against contingent liabilities.

		Group		Fund	
	Note	2022	2021	2022	2021
Assets pledged					
Cash and money at call		6,830	3,084	6,830	3,084
Financial assets measured at fair value through income and expenditure account		5,133	8,349	5,133	8,349
Equity interests in associates		1,519	1,826	–	–
Equity interests in joint ventures		2,953	3,029	–	–
Investment properties	19	22,822	26,398	–	–
Secured liabilities					
Derivative financial instruments		1,394	45	1,394	45
Bank loans	28	14,714	16,130	–	–
Other debt securities issued		608	681	–	–

During the year, the Group entered into collateralised reverse repurchase agreements, repurchase agreements and securities lending transactions that may result in credit exposure in the event that the counterparty to the transaction is unable to fulfil its contractual obligations. The Group controls credit risk associated with these activities by monitoring counterparty credit exposure and collateral values on a daily basis and requiring additional collateral to be deposited with or returned to the Group when deemed necessary.

These transactions are conducted under terms that are usual and customary to standard lending, and securities borrowing and lending activities.

34 COMMITMENTS

(a) Capital commitments

Capital expenditure authorised but not provided for in the financial statements at the reporting date is as follows:

	Group		Fund	
	2022	2021	2022	2021
Contracted for	62	33	59	30
Authorised but not yet contracted for	1,129	1,417	999	1,342
TOTAL	1,191	1,450	1,058	1,372

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Credit facility to the International Monetary Fund

The Fund has participated in the New Arrangements to Borrow (NAB), a standby credit facility provided to the International Monetary Fund (IMF) for the purpose of managing instability in the international monetary system. The facility is subject to periodic review and renewal. As at 31 December 2022, the Fund had an undertaking under the NAB to lend foreign currencies to the IMF up to HK\$7,086 million equivalent (2021: HK\$7,433 million equivalent), in the form of a loan bearing prevailing market interest rates. The outstanding principal due from the IMF under the NAB amounted to HK\$34 million equivalent (2021: HK\$87 million equivalent) (note 16).

(c) Credit facility to the Hong Kong Deposit Protection Board

The Fund has provided the Hong Kong Deposit Protection Board (HKDPB) with a standby credit facility of HK\$120 billion (2021: HK\$120 billion) at prevailing market interest rates for meeting the necessary liquidity required for payment of compensation in the event of a bank failure. As at 31 December 2022, there was no outstanding balance due from the HKDPB under this facility (2021: Nil).

(d) Repurchase agreements with other central banks

The Fund has entered into bilateral repurchase agreements with various central banks in Asia and Australasia amounting up to HK\$44,878 million equivalent (2021: HK\$44,829 million equivalent). The arrangement allows each organisation to enhance the liquidity of its foreign reserve portfolio with minimal additional risk. As at 31 December 2022, there was no outstanding transaction with any central bank under this arrangement (2021: Nil).

(e) Chiang Mai Initiative Multilateralisation Agreement

The Chiang Mai Initiative Multilateralisation (CMIM) was established under the aegis of the 10 Association of Southeast Asian Nations (ASEAN) member countries together with China, Japan and Korea (ASEAN+3) to provide short-term US dollars through currency swap transactions to participants facing balance-of-payments and liquidity difficulties with a total size of US\$240 billion (2021: US\$240 billion). Hong Kong, through the HKMA, participates in the CMIM and has undertaken to commit up to US\$8.4 billion (2021: US\$8.4 billion) out of the Fund. Hong Kong has the right to request liquidity support up to US\$8.4 billion (2021: US\$8.4 billion) from the CMIM in case of emergency. Up to 31 December 2022, there had been no request to activate the CMIM (2021: Nil).

(f) Bilateral swap agreement

The People's Bank of China and the HKMA announced in July 2022 enhancements to the existing bilateral currency swap agreement. Its size has been expanded from RMB500 billion/HK\$590 billion to RMB800 billion/HK\$940 billion. It has also become a long-standing arrangement with no need for renewal. The arrangement helps enhance renminbi liquidity in Hong Kong to support the continued development of Hong Kong's offshore renminbi market. As at 31 December 2022, the amount drawn under the arrangement was RMB20 billion (2021: Nil).

(g) Investment commitments

The Group's subsidiaries with principal activities of holding investments, including properties, had outstanding investment commitment of HK\$284,234 million equivalent as at 31 December 2022 (2021: HK\$232,215 million equivalent).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(h) Other commitments

A subsidiary of the Group, The Hong Kong Mortgage Corporation Limited, had outstanding undrawn loan commitments of HK\$2,110 million as at 31 December 2022 (2021: HK\$2,847 million).

35 CONTINGENT LIABILITIES

(a) Uncalled portion of investment in the Bank for International Settlements

As at 31 December 2022, the Fund had a contingent liability of up to 16.1 million SDRs or HK\$167 million equivalent (2021: 16.1 million SDRs or HK\$176 million equivalent), in respect of the uncalled portion of its 4,285 shares (2021: 4,285 shares) in the Bank for International Settlements (note 11).

SDR is an international reserve asset created by the IMF. Its value is based on a basket of five major currencies comprising US dollar, euro, renminbi, yen and pound sterling. As at 31 December 2022, SDR 1 was valued at US\$1.33520 (2021: US\$1.40203).

(b) Financial guarantees

The Group has provided guarantees in respect of bank loans granted to joint ventures. The maximum liability as at 31 December 2022 was HK\$4,728 million equivalent (2021: HK\$1,024 million equivalent).

36 MATERIAL RELATED PARTY TRANSACTIONS

Transactions with related parties are conducted at rates determined by the Monetary Authority taking into account the nature of each transaction on a case-by-case basis.

All the material related party transactions and balances, including commitments, are disclosed in notes 4(b), 4(d), 14, 17, 18, 24, 25, 26, 30 and 34(c).

The Exchange Fund Advisory Committee (EFAC) and its Sub-Committees advise the Financial Secretary in his control of the Fund. Members of the EFAC and its Sub-Committees are appointed in a personal capacity by the Financial Secretary for the expertise and experience that they can bring to the Committees. Transactions with companies related to members of the EFAC and its Sub-Committees, if any, have been conducted as a normal part of the operation of the Group and on terms consistent with its ongoing operations.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37 FINANCIAL RISK MANAGEMENT

This note presents information about the nature and extent of risks to which the Group is exposed, in particular those arising from financial instruments, and the risk management framework of the Group. The principal financial risks the Group is exposed to are credit risk, market risk and liquidity risk.

37.1 Governance

The Financial Secretary is advised by the EFAC in his control of the Fund. The EFAC is established under section 3(1) of the Exchange Fund Ordinance, which requires the Financial Secretary to consult the Committee in his exercise of control of the Fund. Members of the EFAC are appointed in a personal capacity by the Financial Secretary under the delegated authority of the Chief Executive of the HKSAR for the expertise and experience that they can bring to the Committee. Such expertise and experience include knowledge of monetary, financial, investment management and economic affairs, as well as of accounting, management, business and legal matters.

The EFAC is assisted in its work by five Sub-Committees, which monitor specific areas of the HKMA's work and report and make recommendations to the Financial Secretary through the EFAC.

Among these Sub-Committees, the Investment Sub-Committee (ISC) monitors the HKMA's investment management work and makes recommendations on the investment policy and strategy of the Fund and on risk management and other related matters. Operating within the policies and guidelines endorsed by the EFAC or its delegated authority, the Exchange Fund Investment Office (EFIO) of the HKMA conducts the day-to-day management of the Fund's investment activities, with the Risk and Compliance Department, which is independent of the front office functions of the EFIO, carrying out the risk management activities of the Fund.

37.2 Investment management and control

Investment activities of the Fund are conducted in accordance with the investment benchmark derived from the Fund's investment objectives. The investment benchmark directs the strategic asset allocation of the Fund and is reviewed on a regular basis to ensure that it consistently meets the investment objectives. Changes to the investment benchmark, if required, must be endorsed by the EFAC.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Fund's target asset and currency mix are as follows:

	2022	2021
Asset type		
Bonds	70%	73%
Equities and related investments	30%	27%
	100%	100%
Currency		
US dollar and Hong Kong dollar	81%	84%
Others ¹	19%	16%
	100%	100%

¹ Other currencies included mainly euro, renminbi, pound sterling and yen.

In addition to the investment benchmark, the EFAC determines the risk tolerance level governing the extent to which the Fund's asset and currency mix may deviate from the investment benchmark, taking into account the risk volatility of and correlation across the asset classes and markets that the Fund is allowed to invest in. Authority to take medium term investment decisions is delegated to senior management of the EFIO.

The Risk and Compliance Department is responsible for risk management and compliance monitoring regarding the investments of the Fund. It monitors the risk exposure of the Fund, checks compliance of investment activities against established guidelines and reports and follows up any identified breaches.

37.3 Credit risk

Credit risk is the risk of financial loss when a counterparty or a borrower fails to meet its contractual obligations. The Group's credit risk arises principally from the investments of the Fund and the loan portfolio held by the subsidiaries.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.3.1 *Management of credit risk*

The HKMA maintains effective credit risk management over the investments of the Fund. Based on the delegated authority of the EFAC, the Credit, Rules and Compliance Committee (CRCC) was established within the HKMA with the following responsibilities: (i) to establish and maintain the Credit Exposure Policy to govern the investments of the Fund; (ii) to review the adequacy of the existing credit risk management practices and, where necessary, formulate proposals for amendments; (iii) to conduct analysis of credit risk issues; (iv) to establish and review credit limits for the approved issuers and counterparties; (v) to review and consider proposals of amendments to the Operational Rules for Exchange Fund Investments as appropriate, and make recommendations to the Monetary Authority for endorsement; and (vi) to monitor the compliance of the investments of the Fund with the established policies and limits, and report and follow up any identified breaches. The CRCC is chaired by the Deputy Chief Executive (Monetary) whose responsibilities are independent of the day-to-day investment activities of the Fund, and includes representatives from the EFIO, the Risk and Compliance Department, the Monetary Management Department, and the Research Department of the HKMA.

In light of the rapidly evolving risk environment, the HKMA will remain vigilant in monitoring and managing the Fund's credit risk exposure, and will sustain the impetus for better credit risk management practices to support the investment activities of the Fund.

Credit limits are established in accordance with in-house methodologies as set out in the Operational Rules for Exchange Fund Investments and the Credit Exposure Policy to limit exposures to counterparty, issuer and geographical risks arising from the investments of the Fund.

(a) *Counterparty risk*

The Fund selects its counterparties in lending, placement, derivatives and trading transactions prudently and objectively. Since the Fund conducts transactions with a counterparty for a range of financial instruments, credit limits are established to limit the overall exposure to each authorised counterparty based on its credit ratings, financial strength and other relevant information.

Counterparty credit exposures are measured according to the risk nature of financial products involved in the transaction. Counterparty credit exposures of derivatives include an estimate for the potential future credit exposure of the derivative contracts, in addition to their positive mark-to-market replacement value.

(b) *Issuer risk*

Issuer risk arises from investments in debt securities. Credit limits for approved issuers are set on both individual and group levels to control the risk of loss arising from the default of debt securities issuers and to prevent undue risk concentration.

Moreover, to be qualified as an approved investment, a new market or financial instrument must meet the minimum credit, security and liquidity requirements of the Fund.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(c) Geographical risk

Geographical risk is broadly defined to include both the sovereign risk and the transfer risk. Sovereign risk denotes a government's ability and willingness to repay its obligations. Transfer risk is the risk that a borrower may not be able to secure foreign exchange to service its external obligations, for example, due to an action by the government to impose restrictions on the transfer of funds from local debtors to foreign creditors. Under the existing framework, geographical concentration limits are established to control the Fund's overall credit risk exposures to the economies endorsed by the CRCC.

The above credit limits are reviewed regularly. Credit exposure is monitored against these limits on a daily basis. To ensure prompt identification, proper approval and consistent monitoring of credit risk, the Fund has implemented a unified automated credit monitoring system which provides fully-integrated straight-through-processing linking the front, middle and back office functions. The pre-deal checking takes place in the front office prior to the commitment of any transaction to ensure that the intended transaction will not exceed the credit limits. The end-of-day compliance checking further verifies that the Fund complies with the established credit policies and procedures.

Any breaches of credit limits are reported to the CRCC and the ISC, and are followed up by the Risk and Compliance Department in a timely manner. The approval authorities to sanction these breaches are set out in the Credit Exposure Policy.

To manage the exposure to credit risk arising from the loan portfolio and mortgage insurance business, a prudent risk management framework is established to (i) select Approved Sellers carefully, (ii) adopt prudent mortgage purchasing criteria and insurance eligibility criteria, (iii) conduct effective and in-depth due diligence reviews, (iv) implement robust project structures and financing documentation, (v) perform an ongoing monitoring and reviewing mechanism, and (vi) ensure adequate protection for higher-risk mortgages.

37.3.2 Exposure to credit risk

The maximum exposure to credit risk of the financial assets of the Group and the Fund at the reporting date is equal to their carrying amounts. The maximum exposures to credit risk of off-balance sheet exposures are as follows:

	Note	Group		Fund	
		2022	2021	2022	2021
Risk in force – mortgage insurance	37.6	110,633	88,917	–	–
Risk in force – other guarantees and insurance	37.6	23,321	18,661	–	–
Loan commitments, guarantees and other credit related commitments		246,690	244,462	317,492	317,815
TOTAL		380,644	352,040	317,492	317,815

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.3.3 Credit quality and expected credit losses measurement

In general, expected credit losses are calculated using three main parameters, i.e. probability of default, loss given default and exposure at default. The 12-month expected credit losses are calculated by multiplying the 12-month probability of default, loss given default and exposure at default. Lifetime expected credit losses are calculated using the lifetime probability of default instead. The probability of default represents the expected point-in-time probability of a default over either (i) the next 12 months (i.e. 12-month probability of default) or (ii) the remaining lifetime of the financial instrument (i.e. lifetime probability of default), based on conditions existing at the reporting date and forward-looking information that affect credit risk. The exposure at default represents the expected balance at default, taking into account the repayment of principal and interest from the reporting date to the default event together with any expected drawdown of a committed loan. The loss given default represents expected losses on the exposure at default given the event of default, taking into account, among other attributes, the mitigating effect of collateral value at the time it is expected to be realised and the time value of money.

While cash and money at call, loans and loan commitments with special 100% guarantee under the SFGS and financial guarantee contracts are subject to the impairment requirements, the Group has estimated that their expected credit losses are minimal and considers that no loss allowance is required. Credit quality and expected credit losses measurement for other financial instruments are analysed below.

(a) Placements with banks and other financial institutions

The Group has established an expected credit losses calculation methodology that is based on the probability of default assigned to each counterparty according to their external credit ratings and the related historical credit losses experience, adjusted for forward-looking information, to determine the amounts of loss allowances.

These financial assets are considered to have a low credit risk. The loss allowances are measured at amounts equal to 12-month expected credit losses.

The credit quality of placements with banks and other financial institutions is analysed below:

	Group		Fund	
	2022	2021	2022	2021
Credit rating¹				
AA- to AA+	130,692	72,274	125,139	65,267
A- to A+	56,036	78,889	33,843	48,551
Lower than A- or un-rated ²	10,693	13,113	5,928	7,781
Gross carrying amount	197,421	164,276	164,910	121,599
Less: allowances for expected credit losses	(5)	(8)	(2)	(3)
Carrying amount	197,416	164,268	164,908	121,596

¹ This is the lowest of ratings designated by Moody's, Standard & Poor's and Fitch.

² This included mainly balance with central banks which is not rated.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The movements in loss allowances for placements with banks and other financial institutions during the year are as follows:

	Group	Fund
At 1 January 2021	5	3
Increase in loss allowances recognised in the income and expenditure account	3	–
At 31 December 2021	8	3
At 1 January 2022	8	3
Decrease in loss allowances recognised in the income and expenditure account	(3)	(1)
At 31 December 2022	5	2

(b) Debt securities

The Group predominantly invests in liquid OECD member countries' government bonds and other quasi-government debt securities issues. As at 31 December 2022, approximately 63% (2021: 64%) of the debt securities held by the Group were rated "double-A" or above by Moody's, Standard & Poor's or Fitch.

For debt securities measured at amortised cost or fair value through other comprehensive income, the Group has established an expected credit losses calculation methodology that is based on the probability of default assigned to each issuer according to their external credit ratings and the related historical credit losses experience, adjusted for forward-looking information, to determine the amounts of loss allowances.

These debt securities are considered to have a low credit risk. The loss allowances are measured at amounts equal to 12-month expected credit losses.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The credit quality of debt securities is analysed below:

(i) Debt securities measured at fair value

	Group		Fund	
	2022	2021	2022	2021
Credit rating¹				
Debt securities measured at fair value through income and expenditure account				
AAA	294,210	493,424	294,210	493,424
AA- to AA+	1,442,748	1,624,181	1,442,748	1,624,181
A- to A+	444,358	543,022	444,358	543,022
Lower than A- or un-rated ²	592,051	629,367	592,041	629,356
TOTAL	2,773,367	3,289,994	2,773,357	3,289,983
Debt securities measured at fair value through other comprehensive income				
AAA	–	138	–	–
AA- to AA+	1,048	2,458	–	–
A- to A+	196	1,051	–	–
TOTAL	1,244	3,647	–	–

¹ This is the lowest of ratings designated by Moody's, Standard & Poor's and Fitch.

² This included mainly debt securities issued by the Bank for International Settlements which are not rated.

(ii) Debt securities measured at amortised cost

	Group	
	2022	2021
Credit rating¹		
AAA	405	776
AA- to AA+	4,398	2,170
A- to A+	8,345	8,265
Gross carrying amount	13,148	11,211
Less: allowances for expected credit losses	(5)	(4)
Carrying amount	13,143	11,207

¹ This is the lowest of ratings designated by Moody's, Standard & Poor's and Fitch.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

There were no movements in loss allowances for debt securities measured at fair value through other comprehensive income in 2022 and 2021. The movements in loss allowances for debt securities measured at amortised cost during the year are as follows:

	Group	
	2022	2021
At 1 January	4	3
Increase in loss allowances recognised in the income and expenditure account	1	1
At 31 December	5	4

(c) Loan portfolio

The Group uses three categories for loans which reflect their credit risk and how the loss allowances are determined for each of those categories. These categories do not apply to loans with special 100% guarantee under the SFGS because their expected credit losses are minimal in view of the full guarantee provided by the HKSAR Government.

A summary of the assumptions underpinning the Group's expected credit loss model on loans is as follows:

Category	Group definition of category	Basis for calculation of expected credit losses
Stage 1	Loans that have a low credit risk with borrowers having a strong capacity to meet the contractual obligations at the reporting date or there have not been significant increases in credit risk since initial recognition	12-month expected credit losses
Stage 2	Loans for which there have been significant increases in credit risk since initial recognition, where significant increases in credit risk are presumed when contractual payments are more than 30 days past due	Lifetime expected credit losses – not credit impaired
Stage 3	Loans that have objective evidence of impairment including those that exhibit characteristics of non-repayment or those with contractual payments that are 90 days past due	Lifetime expected credit losses – credit impaired

Loans will be written off when there is no reasonable expectation of recovery on the delinquent interest and/or principal repayments.

Over the term of the loans, the Group accounts for its credit risk by appropriately providing for expected credit losses on a timely basis. In determining the expected credit losses, the Group considers historical credit risk information with reference to external or internal credit ratings and applies forward-looking factors, such as macroeconomic data and credit outlook of the borrowers, to perform multi-scenario analysis.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The credit quality of loan portfolio is analysed below:

	Group – 2022			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating¹				
BBB- to BBB+	722	–	–	722
BB- to BB+	2,829	–	–	2,829
Lower than BB-	3,818	410	149	4,377
Gross carrying amount	7,369	410	149	7,928
Less: allowances for expected credit losses	(56)	(13)	(86)	(155)
	7,313	397	63	7,773
Loan portfolio with internal credit rating				
Gross carrying amount	11,452	10	8	11,470
Less: allowances for expected credit losses	(13)	–	(1)	(14)
	11,439	10	7	11,456
TOTAL	18,752	407	70	19,229

	Group – 2021			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating¹				
BBB- to BBB+	886	–	–	886
BB- to BB+	2,712	–	–	2,712
Lower than BB-	3,603	474	258	4,335
Gross carrying amount	7,201	474	258	7,933
Less: allowances for expected credit losses	(41)	(20)	(93)	(154)
	7,160	454	165	7,779
Loan portfolio with internal credit rating				
Gross carrying amount	8,560	8	8	8,576
Less: allowances for expected credit losses	(5)	–	(1)	(6)
	8,555	8	7	8,570
TOTAL	15,715	462	172	16,349

¹ These are equivalent ratings of Moody's, Standard & Poor's or Fitch provided by an external institution.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The movements in loss allowances for loan portfolio during the year are as follows:

	Group			
	Stage 1	Stage 2	Stage 3	Total
At 1 January 2021	37	23	104	164
Increase/(Decrease) in loss allowances for change in net exposures	13	–	(2)	11
(Decrease)/Increase in loss allowances for change in credit risk	(16)	(3)	4	(15)
Transfers into Stage 1	13	–	(13)	–
Transfers into Stage 2	(1)	1	–	–
Exchange differences	–	(1)	1	–
At 31 December 2021	46	20	94	160
At 1 January 2022	46	20	94	160
Increase/(Decrease) in loss allowances for change in net exposures	11	(1)	–	10
(Decrease)/Increase in loss allowances for change in credit risk	(3)	(17)	19	(1)
Transfers into Stage 1	18	(18)	–	–
Transfers into Stage 2	(3)	29	(26)	–
At 31 December 2022	69	13	87	169

(d) Loan commitments

The movements in provision for expected credit losses on loan commitments during the year are as follows:

	Group			
	Stage 1	Stage 2	Stage 3	Total
At 1 January 2021	26	13	2	41
Decrease in provision for expected credit losses recognised in the income and expenditure account	(6)	(12)	–	(18)
Transfers into Stage 1	2	–	(2)	–
At 31 December 2021	22	1	–	23
At 1 January 2022	22	1	–	23
Decrease in provision for expected credit losses recognised in the income and expenditure account	(2)	–	–	(2)
Transfers into Stage 1	1	(1)	–	–
At 31 December 2022	21	–	–	21

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.3.4 Concentration of credit risk

The majority of the Group's credit risk exposures are from the holding of highly liquid debt securities issued or guaranteed by OECD member countries' governments and other quasi-government entities. The maximum credit risk exposure by industry group is analysed below:

	Group		Fund	
	2022	2021	2022	2021
Governments and government agencies	2,085,908	2,344,877	1,992,744	2,270,949
Supra-nationals	185,613	239,712	185,139	239,331
States, provinces and public-sector entities	188,983	221,806	267,929	300,542
Financial institutions	500,276	530,555	452,312	471,913
Others ¹	767,092	791,871	786,728	844,954
TOTAL	3,727,872	4,128,821	3,684,852	4,127,689

¹ These included debt securities issued by the Bank for International Settlements.

37.4 Market risk

Market risk is the risk that changes in market variables such as interest rates, exchange rates and equity prices may affect the fair values or cash flows of investments.

37.4.1 Types of market risk

(a) Interest rate risk

Interest rate risk refers to the risk of loss arising from changes in market interest rates. This can be further classified into fair value interest rate risk and cash flow interest rate risk.

Fair value interest rate risk is the risk that the fair value of a financial instrument will fluctuate because of changes in market interest rates. The Group is exposed to fair value interest rate risk since a substantial portion of its investments is in fixed-rate debt securities. These securities are subject to interest rate risk as their fair values will fall when market interest rates increase. Other significant financial assets and financial liabilities with a fixed interest rate, and therefore subject to interest rate risk, include placements with banks and other financial institutions and EFBN issued.

Cash flow interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Because the Group has no significant floating-rate investments and liabilities, the Group's future cash flows are not materially affected by potential changes in market interest rates.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Currency risk

Currency risk is the risk of loss arising from changes in foreign exchange rates. A large portion of the Group's foreign currency assets is held in US dollars with the remaining mainly in other major international currencies. When the exchange rates of the relevant foreign currencies against the Hong Kong dollar fluctuate, the value of these foreign currency assets expressed in Hong Kong dollar will vary accordingly.

Due to the linked exchange rate of the US dollar relative to the Hong Kong dollar, the Group's currency risk principally arises from its assets and liabilities denominated in foreign currencies other than the US dollar.

(c) Equity price risk

Equity price risk is the risk of loss arising from changes in prices or valuation. The Group's equity and related investments are subject to price risk since the value of these investments will decline if market prices or valuation fall.

The majority of the equity securities held by the Group are constituent stocks of major stock market indexes and companies with large market capitalisation.

37.4.2 *Management of market risk*

The market risk of the Fund as a whole is regularly measured and monitored to prevent excessive risk exposure. The investment benchmark and tracking error limit of the Fund govern the asset allocation strategies. These, together with the volatility of asset markets, will affect the Fund's market risk exposure. The Fund uses derivative financial instruments to manage its exposures to market risk and facilitate the implementation of investment strategies. The market risk of the Fund is mainly measured and monitored using a Value-at-Risk (VaR) methodology.

VaR is calculated using the parametric approach based on a 95% confidence level and one-month time horizon. The result represents the maximum expected loss of the Fund over a one-month period under normal market conditions, with a 5% chance that the actual loss may exceed the calculated VaR. The Fund's absolute VaR and the relative VaR (i.e. the VaR of the Fund relative to its investment benchmark), expressed in dollar amounts, are measured by the Risk and Compliance Department and reported to management, the ISC and the EFAC on a regular basis.

The relative VaR of the Fund is also used to calculate the actual tracking error of the Fund against its investment benchmark. This is regularly monitored against the tracking error limit endorsed by the EFAC to ensure that the market risk exposure of the Fund is within its limit. The tracking error of a portfolio indicates how well the portfolio tracks its investment benchmark. The smaller the tracking error, the closer the portfolio tracks its benchmark. The tracking error limit is established to prevent the Fund from taking unduly large market risk with respect to its investment benchmark. The actual tracking error of the Fund is regularly reported to the ISC and the EFAC, and any breach of the limit is followed up in a timely manner.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

VaR is a widely accepted measure of market risk within the financial services industry. It provides users with a single amount to measure market risk and takes into account multiple risks. VaR should however be assessed in the context of some of its inherent limitations. The calculation of VaR involves a number of assumptions that may or may not be valid in a real life scenario, in particular in extreme market conditions. The calculation of VaR assumes that future events can be predicted by historical data, and that changes in risk factors follow a normal distribution. The end-of-day basis does not reflect intraday exposures. In addition, the confidence level on which calculation of VaR is based needs to be taken into account as it indicates the possibility that a larger loss could be realised.

To compensate for some of the limitations of VaR, the HKMA also conducts stress tests to estimate the potential losses under extremely adverse market conditions. This serves to identify the major attributes of market risk under extreme market conditions, and helps to prevent the Fund from being exposed to excessive market risk. The results of the stress tests are also reported to the ISC and the EFAC on a regular basis.

To manage the interest rate risk arising from the fixed-rate debt securities issued by the Group to fund the purchase of portfolios of loans, a major portion of the risk is hedged using fair value hedges in the form of interest rate swaps by swapping into floating-rate funding to better match the floating-rate assets.

The Fund's investment in less liquid assets (i.e. private equity and real estate) is grouped under the Long-Term Growth Portfolio. The investment risks of the less liquid assets are managed at the aggregate level through such measures as asset class approval, allocation limit and aggregate general partner exposure. The target asset allocation of the Long-Term Growth Portfolio is determined concurrently with that of other asset classes, subject to prudent risk management principles and portfolio diversification strategy.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.4.3 Exposure to market risk

(a) Interest rate risk

The interest rate gap position in respect of the Group's major interest-bearing assets and liabilities, including the net repricing effect of interest rate derivatives is shown below. The assets and liabilities are stated at carrying amounts at the reporting date and categorised by the earlier of contractual repricing dates or maturity dates.

	Group – 2022							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments						Total	
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years		
Assets								
Cash and money at call	207,850	–	–	–	–	–	207,850	1,867
Placements with banks and other financial institutions	162,417	32,523	2,456	–	–	–	197,396	20
Financial assets measured at fair value through income and expenditure account	473,776	408,343	842,962	563,215	366,067	101,593	2,755,956	1,074,767
Financial assets measured at fair value through other comprehensive income	–	290	–	692	263	–	1,245	1,263
Debt securities measured at amortised cost	78	–	2,510	6,363	4,192	–	13,143	–
Loan portfolio	96,434	4,649	3,755	3,375	1,178	–	109,391	–
Interest-bearing assets	940,555	445,805	851,683	573,645	371,700	101,593	3,284,981	
Liabilities								
Placements by banks and other financial institutions	99,455	–	–	–	–	–	99,455	–
Placements by Fiscal Reserves with interest payable at market-based rates ¹	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	1,618	–	–	–	–	–	1,618	–
Exchange Fund Bills and Notes issued	327,020	627,986	232,272	10,824	2,221	–	1,200,323	–
Bank loans	5,094	3,580	–	6,040	–	–	14,714	–
Other debt securities issued	3,950	29,339	38,442	55,905	4,047	–	131,683	–
Interest-bearing liabilities	437,141	660,905	270,714	72,769	6,268	–	1,447,797	
Net interest-bearing assets/(liabilities)	503,414	(215,100)	580,969	500,876	365,432	101,593	1,837,184	
Interest rate derivatives (net position, notional amounts)	(1,508)	(25,825)	10,645	13,479	922	367	(1,920)	
Interest rate sensitivity gap	501,906	(240,925)	591,614	514,355	366,354	101,960	1,835,264	

¹ Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24 and 25). As at 31 December 2022, such placements amounted to HK\$1,212,608 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021							Non- interest- bearing financial instruments
	Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	
Assets								
Cash and money at call	176,950	–	–	–	–	–	176,950	8,517
Placements with banks and other financial institutions	119,149	41,601	3,499	–	–	–	164,249	19
Financial assets measured at fair value through income and expenditure account	465,881	479,296	1,120,233	683,105	390,681	131,437	3,270,633	1,222,263
Financial assets measured at fair value through other comprehensive income	–	1,845	1,239	247	316	–	3,647	1,336
Debt securities measured at amortised cost	184	221	2,137	3,493	5,172	–	11,207	–
Loan portfolio	77,332	3,005	6,593	3	154	325	87,412	–
Interest-bearing assets	839,496	525,968	1,133,701	686,848	396,323	131,762	3,714,098	
Liabilities								
Placements by Fiscal Reserves with interest payable at market-based rates ¹	3	–	–	–	–	–	3	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	4,187	–	–	–	–	–	4,187	–
Exchange Fund Bills and Notes issued	301,076	595,914	234,742	13,088	3,749	–	1,148,569	–
Bank loans	5,723	2,389	–	4,800	3,218	–	16,130	–
Other debt securities issued	5,283	20,566	41,497	43,506	3,184	2,298	116,334	–
Interest-bearing liabilities	316,272	618,869	276,239	61,394	10,151	2,298	1,285,223	
Net interest-bearing assets/(liabilities)	523,224	(92,901)	857,462	625,454	386,172	129,464	2,428,875	
Interest rate derivatives (net position, notional amounts)	2,589	(30,793)	17,526	9,739	1,518	(282)	297	
Interest rate sensitivity gap	525,813	(123,694)	874,988	635,193	387,690	129,182	2,429,172	

¹ Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24 and 25). As at 31 December 2021, such placements amounted to HK\$1,363,362 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	
Assets								
Cash and money at call	203,620	–	–	–	–	–	203,620	230
Placements with banks and other financial institutions	153,201	9,366	2,341	–	–	–	164,908	–
Financial assets measured at fair value through income and expenditure account	473,776	408,343	842,962	563,215	366,067	101,593	2,755,956	640,231
Interest-bearing assets	830,597	417,709	845,303	563,215	366,067	101,593	3,124,484	
Liabilities								
Placements by banks and other financial institutions	99,455	–	–	–	–	–	99,455	–
Placements by Fiscal Reserves with interest payable at market-based rates ¹	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	1,618	–	–	–	–	–	1,618	–
Exchange Fund Bills and Notes issued	327,020	627,986	232,272	10,824	2,221	–	1,200,323	–
Interest-bearing liabilities	428,097	627,986	232,272	10,824	2,221	–	1,301,400	
Net interest-bearing assets/(liabilities)	402,500	(210,277)	613,031	552,391	363,846	101,593	1,823,084	
Interest rate derivatives (net position, notional amounts)	3,870	(10,356)	3,536	1,463	1,120	367	–	
Interest rate sensitivity gap	406,370	(220,633)	616,567	553,854	364,966	101,960	1,823,084	

¹ Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies, and subsidiaries with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24, 25 and 26). As at 31 December 2022, such placements amounted to HK\$1,243,196 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2021							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	
Assets								
Cash and money at call	172,626	–	–	–	–	–	172,626	6,603
Placements with banks and other financial institutions	106,004	15,592	–	–	–	–	121,596	–
Financial assets measured at fair value through income and expenditure account	465,881	479,296	1,120,233	683,105	390,681	131,437	3,270,633	764,378
Interest-bearing assets	744,511	494,888	1,120,233	683,105	390,681	131,437	3,564,855	
Liabilities								
Placements by Fiscal Reserves with interest payable at market-based rates ¹	3	–	–	–	–	–	3	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	4,187	–	–	–	–	–	4,187	–
Exchange Fund Bills and Notes issued	301,076	595,914	234,742	13,088	3,749	–	1,148,569	–
Interest-bearing liabilities	305,266	595,914	234,742	13,088	3,749	–	1,152,759	
Net interest-bearing assets/(liabilities)	439,245	(101,026)	885,491	670,017	386,932	131,437	2,412,096	
Interest rate derivatives (net position, notional amounts)	2,077	(12,359)	(1,792)	7,511	4,845	(282)	–	
Interest rate sensitivity gap	441,322	(113,385)	883,699	677,528	391,777	131,155	2,412,096	

¹ Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies, and subsidiaries with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 24, 25 and 26). As at 31 December 2021, such placements amounted to HK\$1,389,599 million.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

(b) Currency risk

The currency exposure of the Group is summarised below:

	Group			
	2022		2021	
	Assets	Liabilities	Assets	Liabilities
Hong Kong dollar	295,385	2,857,596	316,604	3,203,584
US dollar	3,527,562	676,908	4,071,465	657,291
	3,822,947	3,534,504	4,388,069	3,860,875
Others ¹	652,554	71,377	672,196	47,670
TOTAL	4,475,501	3,605,881	5,060,265	3,908,545

	Fund			
	2022		2021	
	Assets	Liabilities	Assets	Liabilities
Hong Kong dollar	171,602	2,761,877	202,295	3,121,865
US dollar	3,266,400	663,801	3,790,135	639,974
	3,438,002	3,425,678	3,992,430	3,761,839
Others ¹	570,036	25,119	577,725	1,533
TOTAL	4,008,038	3,450,797	4,570,155	3,763,372

¹ Other currencies included mainly euro, renminbi, pound sterling and yen.

(c) Equity price risk

As at 31 December 2022 and 2021, the majority of equity investments were reported as “financial assets measured at fair value through income and expenditure account” as shown in note 10.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.4.4 Sensitivity analysis

The VaR positions of the Fund as at 31 December and during the year, based on a 95% confidence level and one-month time horizon, are as follows:

	Fund	
	2022	2021
Value-at-Risk		
At 31 December ¹	68,113	40,177
During the year		
Average	64,703	43,508
Maximum	79,199	51,572
Minimum	43,550	36,518

¹ The amount represented 1.7% of the Fund's investments which were subject to VaR measurement as at 31 December 2022 (2021: 0.9%).

37.5 Liquidity risk

Liquidity risk refers to the risk that the Group may not have sufficient funds available to meet its liabilities as they fall due. In addition, the Group may not be able to liquidate its financial assets at a price close to fair value within a short period of time.

37.5.1 Management of liquidity risk

To ensure sufficient liquidity to meet liabilities and the ability to raise funds to meet exceptional needs, the Group invests primarily in liquid financial markets and instruments that are readily saleable to meet liquidity needs. There are internal investment restrictions to prevent undue concentrations in individual debt securities issues, debt securities issuers, and groups of closely related debt securities issuers. There are also limitations on the maximum proportion of assets that can be placed in fixed term deposits and less liquid assets, and requirements regarding the ability to convert foreign currency assets into cash. In addition, prudent liquidity control measures are imposed on the Fund's investments in less liquid credit assets such as asset-backed securities. All these restrictions and limits are designed to promote the liquidity of assets and consequently minimise the liquidity risk. The liquidity risk for the Fund's investment is monitored on an aggregate basis through appropriate portfolio mix with sufficient liquid assets to offset investments of less liquid assets. Compliance with these limits is monitored by the Risk and Compliance Department and any breaches are reported to the ISC and are promptly followed up.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.5.2 Exposure to liquidity risk

The remaining contractual maturities at the reporting date of major financial liabilities, commitments and derivative financial liabilities, which are based on contractual undiscounted cash flows and the earliest date on which the Group can be required to pay, are shown below:

	Group – 2022						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
Non-derivative cash outflows							
Certificates of Indebtedness	605,959	–	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	–	96,251
Placements by banks and other financial institutions	99,919	–	–	–	–	–	99,919
Placements by Fiscal Reserves	509,962	–	–	–	255,227	–	765,189
Placements by HKSAR Government funds and statutory bodies	306,495	2,100	9,280	112,350	18,816	–	449,041
Exchange Fund Bills and Notes issued	327,192	630,827	236,149	11,754	2,468	–	1,208,390
Bank loans	59	58	362	15,777	–	–	16,256
Other debt securities issued	2,462	21,845	43,761	66,493	2,804	3,208	140,573
Lease liabilities	11	25	101	307	41	1,789	2,274
Other liabilities (excluding lease liabilities)	48,031	14,013	869	3,822	139,508	13,326	219,569
Loan commitments, guarantees and other credit related commitments	246,690	–	–	–	–	–	246,690
TOTAL	2,256,191	668,868	290,522	210,503	418,864	18,323	3,863,271
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	330	605	1,009	775	405	117	3,241
– on gross basis							
Total outflows	35,982	78,905	13,534	32,844	2,875	–	164,140
Total inflows	(35,349)	(77,771)	(12,694)	(31,787)	(2,898)	–	(160,499)
TOTAL	963	1,739	1,849	1,832	382	117	6,882

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
Non-derivative cash outflows							
Certificates of Indebtedness	592,364	–	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	–	377,516
Placements by Fiscal Reserves	755,636	–	–	217,667	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	253,147	3,622	12,550	94,930	30,000	–	394,249
Exchange Fund Bills and Notes issued	301,082	596,157	235,084	13,426	3,730	–	1,149,479
Bank loans	63	37	331	10,223	7,411	–	18,065
Other debt securities issued	3,561	12,382	46,590	49,249	3,838	3,388	119,008
Lease liabilities	10	23	97	403	57	2,021	2,611
Other liabilities (excluding lease liabilities)	80,797	3,942	768	172,278	3,525	10,831	272,141
Loan commitments, guarantees and other credit related commitments	244,462	–	–	–	–	–	244,462
TOTAL	2,621,764	616,163	295,420	558,176	48,561	16,240	4,156,324
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	315	176	24	96	136	47	794
– on gross basis							
Total outflows	60,759	39,522	22,542	16,446	918	–	140,187
Total inflows	(59,941)	(39,599)	(23,184)	(16,610)	(892)	–	(140,226)
TOTAL	1,133	99	(618)	(68)	162	47	755

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
Non-derivative cash outflows							
Certificates of Indebtedness	605,959	–	–	–	–	–	605,959
Government-issued currency notes and coins in circulation	13,160	–	–	–	–	–	13,160
Balance of the banking system	96,251	–	–	–	–	–	96,251
Placements by banks and other financial institutions	99,919	–	–	–	–	–	99,919
Placements by Fiscal Reserves	509,962	–	–	–	255,227	–	765,189
Placements by HKSAR Government funds and statutory bodies	306,495	2,100	9,280	112,350	18,816	–	449,041
Placements by subsidiaries	5,243	–	–	10,400	14,945	–	30,588
Exchange Fund Bills and Notes issued	327,192	630,827	236,149	11,754	2,468	–	1,208,390
Lease liabilities	8	16	68	199	–	–	291
Other liabilities (excluding lease liabilities)	36,531	13,811	66	1,524	135,233	–	187,165
Credit related commitments	317,492	–	–	–	–	–	317,492
TOTAL	2,318,212	646,754	245,563	136,227	426,689	–	3,773,445
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	194	125	184	290	327	117	1,237
– on gross basis							
Total outflows	30,263	70,995	230	–	–	–	101,488
Total inflows	(29,734)	(70,085)	(229)	–	–	–	(100,048)
TOTAL	723	1,035	185	290	327	117	2,677

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2021						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
Non-derivative cash outflows							
Certificates of Indebtedness	592,364	–	–	–	–	–	592,364
Government-issued currency notes and coins in circulation	13,126	–	–	–	–	–	13,126
Balance of the banking system	377,516	–	–	–	–	–	377,516
Placements by Fiscal Reserves	755,636	–	–	217,667	–	–	973,303
Placements by HKSAR Government funds and statutory bodies	253,147	3,622	12,550	94,930	30,000	–	394,249
Placements by subsidiaries	5,799	–	–	7,900	12,538	–	26,237
Exchange Fund Bills and Notes issued	301,082	596,157	235,084	13,426	3,730	–	1,149,479
Lease liabilities	7	14	61	259	5	–	346
Other liabilities (excluding lease liabilities)	60,579	3,768	129	171,290	–	–	235,766
Credit related commitments	317,815	–	–	–	–	–	317,815
TOTAL	2,677,071	603,561	247,824	505,472	46,273	–	4,080,201
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	305	37	1	7	136	47	533
– on gross basis							
Total outflows	57,986	31,044	–	–	–	–	89,030
Total inflows	(57,146)	(30,735)	–	–	–	–	(87,881)
TOTAL	1,145	346	1	7	136	47	1,682

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

37.6 Insurance risk

The Group, through its life insurance subsidiary, offers annuity product to personal customers. Insurance risk arises from an inaccurate assessment of the risks entailed in writing and pricing an insurance policy. The major insurance risk is the longevity risk which arises from the possibility that actual life expectancy of annuitants being longer than expected.

Insurance risk is managed by adopting a prudent set of assumptions and conducting regular experience studies. Asset-liability mismatch risk inherent to the annuity product is due to asset volatility, uncertain annuity liabilities, cash flow mismatch and currency mismatch between assets and liabilities. To mitigate such risk, the Group actively monitors the performance and steadfastly maintains control over asset allocation.

The Group established Longevity Risk Committee to manage longevity risk of the Group. Its duties include approving longevity risk management policies and hedging transactions and reviewing longevity experiences and exposures of the Group. It also monitors and analyses the general trend, technological changes and their implications for human longevity.

The Group, through its general insurance subsidiary, provides mortgage insurance cover in respect of mortgage loans and reverse mortgage loans originated by participating lenders and secured on residential properties in Hong Kong, life insurance policies and, if applicable, other assets; and operates a scheme for the HKSAR Government providing financial guarantee on loans advanced by participating lenders for local SMEs. The Group faces insurance risk of the possibility of the insured event occurring and the uncertainty of the amount of the resulting claim.

Under the Mortgage Insurance Programme, the Group offers mortgage insurance that covers participating lenders for first credit losses, in general, of up to 40% of the value of properties financed under mortgage loans with loan-to-value ratio 90% or below at origination. The Group reinsures the exposure with approved reinsurers. As at 31 December 2022, the total risk-in-force was HK\$110.6 billion (2021: HK\$88.9 billion), of which HK\$99.1 billion (2021: HK\$80.6 billion) was retained by the Group after reinsurance.

The Group also provides financial guarantee cover to participating authorized institutions up to 50% to 70% of the banking facilities granted to SMEs in Hong Kong, and insurance cover in respect of reverse mortgage loans originated by participating lenders and secured on residential properties, life insurance policies and, if applicable, other assets. As at 31 December 2022, the total risk-in-force of the reverse mortgage loans was HK\$23.3 billion (2021: HK\$18.7 billion), of which HK\$16.3 billion (2021: HK\$14.0 billion) was retained by the Group after reinsurance.

For a portfolio of insurance contracts where the theory of probability is applied to pricing and provisioning, the principal risk that the Group faces under its insurance contracts is that the actual claims exceed the carrying amount of the insurance liabilities. This could occur because the frequency or severity of claims is greater than estimated. Insurance events are random and the actual number and amount of claims and benefits will vary from year to year from the estimate established using statistical techniques.

Experience shows that the larger the portfolio of similar insurance contracts, the smaller the relative variability about the expected outcome will be. In addition, a more diversified portfolio is less likely to be affected across the board by a change in any subset of the portfolio. The Group has developed a business strategy to diversify the type of insurance risks accepted and within each of the key categories to achieve a sufficiently large population of risks to reduce the variability of the expected outcome.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The frequency and severity of claims can be affected by several factors. The most significant factors are a downturn in the economy, a slump in local property market and a low mortality rate of reverse mortgage borrowers. Economic downturn, which may cause a rise in defaulted payment, affects the frequency of claims and collateral value. A drop in property prices, where the collateral values fall below the outstanding balance of the mortgage loans, will increase the severity of claims. Low mortality rate of reverse mortgage borrowers means longer payout period and larger loan balance will be over time. This will affect the frequency and severity of claims as there is a risk of the property value being insufficient to cover the outstanding loan balance in the future.

The Group manages these risks by adopting a set of prudent insurance underwriting eligibility criteria. To ensure sufficient provision is set aside for meeting future claim payments, the Group calculates technical reserves on prudent liability valuation assumptions and the methods prescribed in the regulatory guidelines. The Group also takes out quota-share reinsurance from its approved mortgage reinsurers in an effort to limit its risk exposure under the mortgage insurance business and reverse mortgage business. The Group conducts comprehensive assessment including the financial strength and credit ratings of the reinsurers in accordance with the approved selection framework. The approved mortgage reinsurers are subject to periodic reviews. For financial guarantee cover provided to participating lenders, the Group relies on the lenders' prudent credit assessment on the borrowers to mitigate default risk and any loss in the loan facility will be shared proportionately between the Group and the lender on a *pari passu* basis to minimise moral hazards. The mortality assumptions of reverse mortgages are also reviewed on a regular basis, to assess the risk of larger deviation between the actual and expected operating results.

37.7 Operational risk

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk is inherent in all aspects of the Group's operations covering all business segments.

The Group's objective is to cost-effectively manage operational risk to prevent financial losses or damage to the Group's reputation.

The primary responsibility for the development and implementation of controls to address operational risk rests with line management, with oversight by an internal high-level Risk Committee. The Committee is chaired by the Chief Executive of the HKMA with the Deputy Chief Executives as members. The Risk Committee provides direction and guidance for line management in managing operational risk.

Operational risk management is supported by a formal risk assessment process. This is conducted annually and supplemented with quarterly updates. It requires each division to assess and rank the potential impact and likelihood of occurrence of financial and operational risks. It also requires divisions to review the procedures and controls in place for addressing the identified risks. This risk and control self-assessment is reviewed by the Internal Audit Division of the HKMA to ensure consistency and reasonableness before submission to the Risk Committee, which has the responsibility for ensuring that the identified risks are properly addressed. Results of this risk assessment are also taken into account, in conjunction with other risk factors, for the development of an annual Internal Audit work plan. The Internal Audit Division will audit the risk areas at various frequencies depending on the levels of risks and the results of past audits. It reports its findings regularly to the EFAC Audit Sub-Committee and the Chief Executive of the HKMA and follows up on outstanding issues to ensure that they are resolved in a proper manner.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

Operational risk is also inherent in the investment activities and processes of the EFIO. To enhance its operational risk oversight, the Risk and Compliance Department formalised its operational risk management framework for the EFIO. The key elements of the framework include identification and monitoring of key risk indicators; reporting to the senior management of the HKMA on the operational risk profile of the EFIO; handling of operational risk incidents; and issuing monthly operational risk reports to relevant senior executives.

38 FAIR VALUE MEASUREMENT OF FINANCIAL INSTRUMENTS

38.1 Fair value of financial instruments measured at fair value on a recurring basis

38.1.1 Fair value hierarchy

The carrying values of financial instruments measured at fair value at the reporting date across the three levels of the fair value hierarchy are shown below:

	Group – 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	147,867	885,822	–	1,033,689
Certificates of deposit	–	141,029	–	141,029
Other debt securities	1,537,584	61,065	–	1,598,649
Equity securities	493,374	77,552	61,560	632,486
Investment funds	–	–	424,870	424,870
	2,178,825	1,165,468	486,430	3,830,723
Financial assets measured at fair value through other comprehensive income				
Debt securities	1,244	–	–	1,244
Equity securities	–	–	1,264	1,264
	1,244	–	1,264	2,508
Derivative financial instruments	240	2,711	–	2,951
TOTAL	2,180,309	1,168,179	487,694	3,836,182
Liabilities				
Exchange Fund Bills and Notes issued	–	1,200,323	–	1,200,323
Derivative financial instruments	193	6,982	–	7,175
TOTAL	193	1,207,305	–	1,207,498

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2021			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	28,585	1,146,871	–	1,175,456
Certificates of deposit	–	180,789	–	180,789
Other debt securities	1,861,622	72,127	–	1,933,749
Equity securities	584,635	102,287	73,153	760,075
Investment funds	–	–	442,827	442,827
	2,474,842	1,502,074	515,980	4,492,896
Financial assets measured at fair value through other comprehensive income				
Debt securities	2,358	1,289	–	3,647
Equity securities	–	–	1,336	1,336
	2,358	1,289	1,336	4,983
Derivative financial instruments	341	4,255	–	4,596
TOTAL	2,477,541	1,507,618	517,316	4,502,475
Liabilities				
Exchange Fund Bills and Notes issued	–	1,148,569	–	1,148,569
Derivative financial instruments	282	2,010	–	2,292
TOTAL	282	1,150,579	–	1,150,861

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	147,867	885,822	–	1,033,689
Certificates of deposit	–	141,029	–	141,029
Other debt securities	1,537,574	61,065	–	1,598,639
Equity securities	493,374	77,552	51,904	622,830
	2,178,815	1,165,468	51,904	3,396,187
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,264	1,264
Derivative financial instruments	240	1,294	–	1,534
TOTAL	2,179,055	1,166,762	53,168	3,398,985
Liabilities				
Exchange Fund Bills and Notes issued	–	1,200,323	–	1,200,323
Derivative financial instruments	193	2,640	–	2,833
TOTAL	193	1,202,963	–	1,203,156

	Fund – 2021			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial papers	28,585	1,146,871	–	1,175,456
Certificates of deposit	–	180,789	–	180,789
Other debt securities	1,861,611	72,127	–	1,933,738
Equity securities	584,635	102,287	58,106	745,028
	2,474,831	1,502,074	58,106	4,035,011
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,336	1,336
Derivative financial instruments	341	3,287	–	3,628
TOTAL	2,475,172	1,505,361	59,442	4,039,975
Liabilities				
Exchange Fund Bills and Notes issued	–	1,148,569	–	1,148,569
Derivative financial instruments	282	1,385	–	1,667
TOTAL	282	1,149,954	–	1,150,236

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Group's policy is to recognise transfers between levels of fair value hierarchy as at the reporting date in which they occur. During the year, there were no transfers of financial instruments between Level 1 and Level 2 of the fair value hierarchy (2021: Nil).

An analysis of the movement between opening and closing balances of Level 3 financial assets, measured at fair value using a valuation technique with significant unobservable inputs, is shown below:

	2022			
	Group		Fund	
	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income
At 1 January 2022	515,980	1,336	58,106	1,336
Net (losses)/gains recognised in the income and expenditure account	(58,105)	–	1,739	–
Net losses recognised in other comprehensive loss	–	(72)	–	(72)
Purchases	66,931	–	3,947	–
Sales	(40,048)	–	(13,746)	–
Exchange differences	(186)	–	–	–
Transfers into Level 3	2,695	–	2,695	–
Transfers out of Level 3	(837)	–	(837)	–
At 31 December 2022	486,430	1,264	51,904	1,264
Net (losses)/gains recognised in the income and expenditure account relating to revaluation of those assets held at the reporting date	(57,924)	–	1,834	–

	2021			
	Group		Fund	
	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income
At 1 January 2021	419,955	1,370	65,829	1,370
Net gains recognised in the income and expenditure account	63,721	–	4,636	–
Net losses recognised in other comprehensive loss	–	(34)	–	(34)
Purchases	90,292	–	10,452	–
Sales	(56,472)	–	(21,500)	–
Exchange differences	(205)	–	–	–
Transfers into Level 3	2,141	–	2,141	–
Transfers out of Level 3	(3,452)	–	(3,452)	–
At 31 December 2021	515,980	1,336	58,106	1,336
Net gains recognised in the income and expenditure account relating to revaluation of those assets held at the reporting date	62,230	–	3,133	–

In 2022 and 2021, certain financial instruments were transferred between Level 2 and Level 3 of the fair value hierarchy reflecting changes in transparency of observable market data for these instruments.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

38.1.2 Valuation techniques and key inputs

The fair value of financial instruments classified under Level 1 is based on quoted market prices in active markets for identical assets or liabilities at the reporting date.

In the absence of quoted market prices in active markets, the fair value of financial instruments classified under Level 2 is estimated using present value or other valuation techniques, with inputs based on market conditions existing at the reporting date. Specific valuation techniques and key inputs used to value these financial instruments include:

- (a) quoted market price or broker quotes for similar instruments;
- (b) derivative financial instruments are priced using models with observable market inputs including interest rate swap and foreign exchange contracts; and
- (c) commercial papers and debt securities are priced using discounted cash flow techniques with observable yield curves.

For unlisted investment funds and certain unlisted equity securities which are classified under Level 3, their fair values are estimated by making reference to valuation reports provided by external investment managers. It is not practicable to quote a range of key unobservable inputs.

For certain unlisted equity securities valued by the Group, which are classified under Level 3, their fair values are derived from Comparable Company Valuation Model, which derives the valuation of an investment through the product of its earnings, earning multiples of comparable public companies and a discount factor for a lack of liquidity. Significant unobservable inputs used under this valuation method include earning multiples of similar companies and liquidity discount:

Significant unobservable inputs	Quantitative amount	
	2022	2021
Earning multiples of similar companies	3.4 – 18.0	5.8 – 25.9
Liquidity discount	20%	20%

The shareholding in the Bank for International Settlements (note 11) is also classified under Level 3. Its fair value is estimated based on the Group's interest in the net asset value of the Bank at the reporting date, discounted at 30% to reflect the discount rate used by the Bank for share repurchases.

If the fair values of these investments had increased/decreased by 10%, it would have resulted in a decrease/an increase in the Group's deficit for the year of HK\$48,643 million (2021: an increase/a decrease in the Group's surplus for the year of HK\$51,598 million) and a decrease/an increase in other comprehensive loss of HK\$126 million (2021: HK\$134 million).

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

38.2 Fair value of debt securities not measured at fair value on a recurring basis

The fair values of debt securities measured at amortised cost and other debt securities issued that were not measured at fair value are shown below:

		Group – 2022			
		Carrying value	Fair value		
	Note		Level 1	Level 2	Total
Financial assets					
Debt securities measured at amortised cost	13	13,143	9,730	2,872	12,602
Financial liabilities					
Other debt securities issued	29	131,683	–	131,400	131,400

		Group – 2021			
		Carrying value	Fair value		
	Note		Level 1	Level 2	Total
Financial assets					
Debt securities measured at amortised cost	13	11,207	9,964	1,814	11,778
Financial liabilities					
Other debt securities issued	29	116,334	–	116,991	116,991

In the absence of quoted market prices in active markets, the fair values of debt securities classified under Level 2 are estimated using present value or other valuation techniques, with inputs based on market conditions existing at the reporting date. The valuation technique for other debt securities issued is the use of discounted cash flow model based on a current yield curve appropriate for their remaining term to maturity.

All other financial instruments of the Group and the Fund are measured at fair value or carried at amounts not materially different from their fair values as at 31 December 2022 and 2021.

Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

39 POSSIBLE IMPACT OF AMENDMENTS, NEW STANDARDS AND INTERPRETATIONS ISSUED BUT NOT YET EFFECTIVE FOR THE YEAR ENDED 31 DECEMBER 2022

Up to the date of issue of these financial statements, the HKICPA has issued a number of amendments, new standards and interpretations which are not yet effective for the year ended 31 December 2022 and which have not been adopted in these financial statements. The new standards include:

	Effective for accounting periods beginning on or after
HKFRS 17 “Insurance Contracts”	1 January 2023

The Group plans to complete the full implementation of HKFRS 17 in 2023, and the implementation project is currently progressing as planned.

HKFRS 17 “Insurance Contracts”

HKFRS 17 establishes a comprehensive global insurance standard which provides guidance on the recognition, measurement, presentation and disclosure of insurance contracts. This standard sets out the requirements that the Group should apply in accounting for insurance contracts it issues and reinsurance contracts it holds. It is effective for annual periods beginning on or after 1 January 2023 and will be applied retrospectively with comparatives restated from 1 January 2022 unless impracticable.

40 APPROVAL OF FINANCIAL STATEMENTS

The financial statements were approved by the Financial Secretary on the advice of the Exchange Fund Advisory Committee on 11 April 2023.