

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 167 to 273, which comprise the balance sheets of the Exchange Fund and of the Group as at 31 December 2018, 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 2018, 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 2018. 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 40.1 to the financial statements.</i>	
<p>As at 31 December 2018, the Group had financial assets totalling HK\$3,693,589 million and financial liabilities totalling HK\$1,133,829 million valued at fair value.</p> <p>For 93% 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 7% 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\$275,631 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 2.12, 20 and 21 to the financial statements.</i>	
<p>The Group's investment properties were stated at their fair values, totalling HK\$25,321 million as at 31 December 2018. The Group also had interests in three associates and twenty joint ventures totalling HK\$44,336 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 2018 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;
- 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;

Report of the Director of Audit (continued)

- 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.

John Chu
Director of Audit

4 April 2019

Audit Commission
26th Floor
Immigration Tower
7 Gloucester Road
Wanchai, Hong Kong

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Exchange Fund – Income and Expenditure Account

for the year ended 31 December 2018

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2018	2017	2018	2017
INCOME					
Interest income		65,424	39,131	63,705	37,947
Dividend income		16,310	16,126	14,231	13,834
Income from investment properties		1,918	1,894	–	–
Net realised and unrealised (losses)/gains		(62,457)	137,221	(80,551)	125,828
Net exchange (loss)/gain		(8,961)	50,303	(8,947)	53,502
Investment income/(losses)	4(a)	12,234	244,675	(11,562)	231,111
Bank licence fees		125	125	125	125
Net premiums earned	5	3,015	211	–	–
Other income		451	380	69	84
TOTAL INCOME		15,825	245,391	(11,368)	231,320
EXPENDITURE					
Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	4(b)	(74,019)	(54,802)	(74,019)	(54,802)
Other interest expense	4(c)	(14,104)	(5,919)	(13,184)	(5,140)
Operating expenses	4(d)	(5,553)	(5,471)	(4,513)	(4,379)
Note and coin expenses	4(e)	(379)	(372)	(379)	(372)
Charge for impairment allowances	4(f)	(15)	–	(1)	–
Net claims incurred, benefits paid and movement in policyholders' liabilities	5	(3,321)	–	–	–
TOTAL EXPENDITURE		(97,391)	(66,564)	(92,096)	(64,693)
(DEFICIT)/SURPLUS BEFORE SHARE OF PROFIT OF ASSOCIATES AND JOINT VENTURES					
		(81,566)	178,827	(103,464)	166,627
Share of profit of associates and joint ventures, net of tax		2,213	2,629	–	–
(DEFICIT)/SURPLUS BEFORE TAXATION					
		(79,353)	181,456	(103,464)	166,627
Income tax	6	(84)	(109)	–	–
(DEFICIT)/SURPLUS FOR THE YEAR					
		(79,437)	181,347	(103,464)	166,627
(DEFICIT)/SURPLUS FOR THE YEAR ATTRIBUTABLE TO:					
Owner of the Fund		(79,793)	180,985	(103,464)	166,627
Non-controlling interests		356	362	–	–
		(79,437)	181,347	(103,464)	166,627

The notes on pages 175 to 273 form part of these financial statements.

Exchange Fund – Statement of Comprehensive Income

for the year ended 31 December 2018

(Expressed in millions of Hong Kong dollars)	Group		Fund	
	2018	2017	2018	2017
(DEFICIT)/SURPLUS FOR THE YEAR	(79,437)	181,347	(103,464)	166,627
OTHER COMPREHENSIVE (LOSS)/INCOME				
Items that will not be reclassified to income and expenditure account				
Equity securities measured at fair value through other comprehensive income				
– fair value changes on revaluation	(4)	–	(4)	–
Items that may be reclassified subsequently to income and expenditure account				
Debt securities measured at fair value through other comprehensive income				
– fair value changes on revaluation	(7)	–	–	–
Available-for-sale securities				
– fair value changes on revaluation	–	14,643	–	–
– fair value changes on disposal reclassified to income and expenditure account	–	224	–	–
– impairment losses reclassified to income and expenditure account	–	6,561	–	–
– tax effect	–	18	–	–
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	(1,518)	2,679	–	–
OTHER COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR, NET OF TAX	(1,529)	24,125	(4)	–
TOTAL COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR	(80,966)	205,472	(103,468)	166,627
TOTAL COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR ATTRIBUTABLE TO:				
Owner of the Fund	(81,288)	205,035	(103,468)	166,627
Non-controlling interests	322	437	–	–
	(80,966)	205,472	(103,468)	166,627

The notes on pages 175 to 273 form part of these financial statements.

Exchange Fund – Balance Sheet

as at 31 December 2018

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2018	2017	2018	2017
ASSETS					
Cash and money at call	8	183,521	216,372	182,573	215,649
Placements with banks and other financial institutions	9	172,556	156,688	143,097	131,251
Financial assets measured at fair value through income and expenditure account	10	3,682,911	3,489,593	3,452,969	3,473,286
Financial assets measured at fair value through other comprehensive income	11	6,246	–	1,144	–
Available-for-sale securities	12	–	180,415	–	493
Derivative financial instruments	13(a)	4,432	2,403	4,270	2,069
Debt securities measured at amortised cost	14	11,547	–	–	–
Held-to-maturity securities	15	–	10,348	–	–
Loan portfolio	16	7,498	7,830	–	–
Gold	17	670	677	670	677
Other assets	18	99,945	52,574	97,638	51,419
Interests in subsidiaries	19	–	–	169,746	137,531
Interests in associates and joint ventures	20	44,336	35,747	–	–
Investment properties	21	25,321	26,242	–	–
Property, plant and equipment	22	3,046	3,138	2,792	2,882
TOTAL ASSETS		4,242,029	4,182,027	4,054,899	4,015,257
LIABILITIES AND EQUITY					
Certificates of Indebtedness	23	485,666	456,726	485,666	456,726
Government-issued currency notes and coins in circulation	23	12,639	12,213	12,639	12,213
Balance of the banking system	24	78,584	179,790	78,584	179,790
Placements by banks and other financial institutions	25	56,346	59,337	56,346	59,337
Placements by Fiscal Reserves	26	1,173,484	1,073,794	1,173,484	1,073,794
Placements by Hong Kong Special Administrative Region					
Government funds and statutory bodies	27	320,534	305,110	320,534	305,110
Placements by subsidiaries	28	–	–	7,710	–
Exchange Fund Bills and Notes issued	29	1,129,610	1,045,248	1,129,610	1,045,748
Derivative financial instruments	13(a)	4,075	5,562	3,755	5,293
Bank loans	30	12,795	13,250	–	–
Other debt securities issued	31	37,928	35,517	–	–
Other liabilities	32	187,255	171,914	176,247	164,106
Total liabilities		3,498,916	3,358,461	3,444,575	3,302,117

Exchange Fund – Balance Sheet (continued)

as at 31 December 2018

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2018	2017	2018	2017
Accumulated surplus		742,852	788,465	609,673	713,140
Revaluation reserve		650	34,191	651	–
Translation reserve		(2,531)	(1,047)	–	–
Total equity attributable to owner of the Fund		740,971	821,609	610,324	713,140
Non-controlling interests		2,142	1,957	–	–
Total equity		743,113	823,566	610,324	713,140
TOTAL LIABILITIES AND EQUITY		4,242,029	4,182,027	4,054,899	4,015,257

Norman T. L. Chan

Monetary Authority

4 April 2019

The notes on pages 175 to 273 form part of these financial statements.

Exchange Fund – Statement of Changes in Equity

for the year ended 31 December 2018

(Expressed in millions of Hong Kong dollars)	Attributable to owner of the Fund				Non-controlling interests	Total
	Accumulated surplus	Revaluation reserve	Translation reserve	Total attributable to owner of the Fund		
Group						
At 1 January 2017	607,480	12,748	(3,654)	616,574	1,517	618,091
Surplus for the year	180,985	–	–	180,985	362	181,347
Other comprehensive income for the year						
Fair value changes on available-for-sale securities						
– revaluation	–	14,640	–	14,640	3	14,643
– reclassification on disposal	–	224	–	224	–	224
– reclassification as impairment losses	–	6,561	–	6,561	–	6,561
– tax effect	–	18	–	18	–	18
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	2,607	2,607	72	2,679
Total comprehensive income for the year	180,985	21,443	2,607	205,035	437	205,472
Capital injection by non-controlling interests	–	–	–	–	18	18
Dividends paid to non-controlling interests	–	–	–	–	(15)	(15)
At 31 December 2017	788,465	34,191	(1,047)	821,609	1,957	823,566
At 1 January 2018	788,465	34,191	(1,047)	821,609	1,957	823,566
Adjustments on initial application of HKFRS 9 (note 3.1.3)	34,180	(33,530)	–	650	–	650
At 1 January 2018, as adjusted	822,645	661	(1,047)	822,259	1,957	824,216
Deficit for the year	(79,793)	–	–	(79,793)	356	(79,437)
Other comprehensive loss for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income						
– revaluation	–	(11)	–	(11)	–	(11)
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	(1,484)	(1,484)	(34)	(1,518)
Total comprehensive loss for the year	(79,793)	(11)	(1,484)	(81,288)	322	(80,966)
Capital distribution to non-controlling interests	–	–	–	–	(123)	(123)
Dividends paid to non-controlling interests	–	–	–	–	(14)	(14)
At 31 December 2018	742,852	650	(2,531)	740,971	2,142	743,113

Exchange Fund – Statement of Changes in Equity (continued)

for the year ended 31 December 2018

(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	Translation reserve			
Fund						
At 1 January 2017	546,513	–	–	546,513	–	546,513
Surplus and total comprehensive income for the year	166,627	–	–	166,627	–	166,627
At 31 December 2017	713,140	–	–	713,140	–	713,140
At 1 January 2018	713,140	–	–	713,140	–	713,140
Adjustments on initial application of HKFRS 9 (note 3.1.3)	(3)	655	–	652	–	652
At 1 January 2018, as adjusted	713,137	655	–	713,792	–	713,792
Deficit for the year	(103,464)	–	–	(103,464)	–	(103,464)
Other comprehensive loss for the year						
Fair value changes on financial assets measured at fair value through other comprehensive income						
– revaluation	–	(4)	–	(4)	–	(4)
Total comprehensive loss for the year	(103,464)	(4)	–	(103,468)	–	(103,468)
At 31 December 2018	609,673	651	–	610,324	–	610,324

The notes on pages 175 to 273 form part of these financial statements.

Exchange Fund – Statement of Cash Flows

for the year ended 31 December 2018

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2018	2017	2018	2017
Cash flows from operating activities					
(Deficit)/Surplus before taxation		(79,353)	181,456	(103,464)	166,627
Adjustments for:					
Interest income	4(a)	(65,424)	(39,131)	(63,705)	(37,947)
Dividend income	4(a)	(16,310)	(16,126)	(14,231)	(13,834)
Change in fair value of investment properties	4(a)	(408)	(582)	–	–
Net gains on disposal of available-for-sale securities	4(a)	–	(15,079)	–	–
Impairment losses on available-for-sale securities	4(a)	–	6,561	–	–
Interest expense	4(b) & 4(c)	88,123	60,721	87,203	59,942
Depreciation	4(d)	228	214	178	169
Charge for impairment allowances	4(f)	15	–	1	–
Share of profit of associates and joint ventures		(2,213)	(2,629)	–	–
Net loss on disposal of property, plant and equipment		–	1	–	–
Elimination of exchange differences and other non-cash items		7,668	(12,993)	6,070	(12,819)
Interest received		62,802	38,181	61,168	36,949
Interest paid		(67,969)	(35,802)	(67,166)	(35,071)
Dividends received		16,336	16,087	14,240	13,778
Income tax (paid)/refunded		(82)	10	–	–
		(56,587)	180,889	(79,706)	177,794
Change in fair value of derivatives and other debt securities issued		(3,856)	11,229	(3,752)	11,304
Change in carrying amount of:					
– placements with banks and other financial institutions		(7,618)	9,098	(3,155)	1,631
– financial assets measured at fair value through income and expenditure account		7,902	(487,499)	50,076	(485,794)
– loan portfolio		323	1,704	–	–
– gold		7	(77)	7	(77)
– other assets		(44,669)	5,101	(43,695)	4,743
– Certificates of Indebtedness, government-issued currency notes and coins in circulation		29,366	51,666	29,366	51,666
– balance of the banking system		(101,206)	(79,803)	(101,206)	(79,803)
– placements by banks and other financial institutions		(2,991)	3,201	(2,991)	3,201
– placements by Fiscal Reserves		99,690	159,196	99,690	159,196
– placements by Hong Kong Special Administrative Region Government funds and statutory bodies		15,424	2,625	15,424	2,625
– placements by subsidiaries		–	–	7,710	–
– Exchange Fund Bills and Notes issued		84,362	84,266	83,862	84,766
– other liabilities		(4,821)	(20,564)	(7,896)	(20,962)
Net cash from/(used in) operating activities		15,326	(78,968)	43,734	(89,710)

Exchange Fund – Statement of Cash Flows (continued)

for the year ended 31 December 2018

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2018	2017	2018	2017
Cash flows from investing activities					
Investment in subsidiaries		–	–	(5,000)	–
Loans to subsidiaries		–	–	(27,215)	(16,417)
(Increase)/Decrease in interests in associates and joint ventures		(5,343)	95	–	–
Proceeds from sale or redemption of financial assets measured at fair value through other comprehensive income		1,193	–	–	–
Purchase of financial assets measured at fair value through other comprehensive income		(1,307)	–	–	–
Proceeds from sale or redemption of available-for-sale securities		–	34,654	–	–
Purchase of available-for-sale securities		–	(51,932)	–	–
Proceeds from sale or redemption of debt securities measured at amortised cost		654	–	–	–
Purchase of debt securities measured at amortised cost		(1,855)	–	–	–
Proceeds from sale or redemption of held-to-maturity securities		–	2,747	–	–
Purchase of held-to-maturity securities		–	(3,113)	–	–
Purchase of investment properties		(111)	(180)	–	–
Purchase of property, plant and equipment		(136)	(162)	(88)	(107)
Dividends received from subsidiaries		–	–	17	18
Net cash used in investing activities		(6,905)	(17,891)	(32,286)	(16,506)
Cash flows from financing activities					
Bank loans raised	33(c)	235	106	–	–
Proceeds from issue of other debt securities	33(c)	34,006	29,027	–	–
Redemption of other debt securities issued	33(c)	(31,290)	(29,509)	–	–
Capital (distribution to)/injection by non-controlling interests		(123)	18	–	–
Dividends paid to non-controlling interests		(14)	(15)	–	–
Net cash from/(used in) financing activities		2,814	(373)	–	–
Net increase/(decrease) in cash and cash equivalents		11,235	(97,232)	11,448	(106,216)
Cash and cash equivalents at 1 January		377,555	461,950	361,711	455,108
Effect of foreign exchange rate changes		(6,073)	12,837	(6,070)	12,819
Cash and cash equivalents at 31 December	33(a)	382,717	377,555	367,089	361,711

The notes on pages 175 to 273 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 Government of the Hong Kong Special Administrative Region (HKSAR) for the account of the Fund for strategic purposes. Operating segment information is set out in note 34.

2 SIGNIFICANT ACCOUNTING POLICIES

2.1 Statement of compliance

These financial statements have been prepared in accordance with all applicable Hong Kong Financial Reporting Standards (HKFRSs), which is a collective term that includes all applicable individual Hong Kong Financial Reporting Standards, Hong Kong Accounting Standards (HKASs) 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 and revised HKFRSs that are first effective or available for early adoption for the current accounting period. Note 3 provides information on the changes, if any, in accounting policies resulting from initial adoption 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 19 and 20.

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 that the following assets and liabilities are stated at their fair values as explained in the accounting policies set out below:

- 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 2.11); and
- investment properties (note 2.12).

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 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.

Certain comparative figures for 2017 have been reclassified to conform to the current year presentation of the Group financial statements.

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 the Group 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).

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 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 balance sheet date. The fair values of financial instruments measured at amortised cost are disclosed in note 40.

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 for 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 balance sheet 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 from 1 January 2018

After the adoption of HKFRS 9 “Financial Instruments” (note 3.1), 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);
- 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. 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 (net of any loss allowance). 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 payments or receipts 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 paid or received 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 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 (net of any loss allowance). 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 as 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), the balance of the banking system, placements by Fiscal Reserves (Operating and Capital Reserves), placements by the Bond Fund and placements by the Deposit Protection Scheme Fund.

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, other placements by HKSAR Government funds and statutory bodies, placements by subsidiaries, 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 2025 (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 balance sheet date.

2.6.3 *Classification and subsequent measurement in 2017*

Under HKAS 39 "Financial Instruments: Recognition and Measurement", the Group classified its financial assets and financial liabilities into different categories at inception, depending on the purpose for which the financial assets were acquired or the financial liabilities were incurred. The categories were: trading financial instruments, financial assets and financial liabilities designated at fair value, loans and receivables, held-to-maturity securities, available-for-sale securities and other financial liabilities.

2.6.3.1 Trading financial instruments

Derivatives that did not qualify for hedge accounting were categorised as "trading" and carried at fair value. Changes in the fair value were included in the income and expenditure account in the period in which they arose.

2.6.3.2 Financial assets and financial liabilities designated at fair value

Financial assets and financial liabilities designated at fair value were mainly those that were managed, evaluated and reported internally on a fair value basis. They were carried at fair value. Changes in the fair value were included in the income and expenditure account in the period in which they arose.

2.6.3.3 Loans and receivables

Loans and receivables were non-derivative financial assets with fixed or determinable payments that were not quoted in an active market and which the Group had no intention of trading, other than those that the Group, upon initial recognition, designated as at fair value or as available-for-sale. Loans and receivables were carried at amortised cost using the effective interest method, less impairment losses if any (note 2.10).

Exchange Fund – Notes to the Financial Statements (continued)

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

2.6.3.4 Held-to-maturity securities

Held-to-maturity securities were non-derivative financial assets with fixed or determinable payments and fixed maturity which the Group had the positive intention and ability to hold to maturity, other than (a) those that the Group, upon initial recognition, designated as at fair value or as available-for-sale; and (b) those that met the definition of loans and receivables. Held-to-maturity securities were carried at amortised cost using the effective interest method, less impairment losses if any (note 2.10).

2.6.3.5 Available-for-sale securities

Available-for-sale securities were non-derivative securities that were designated as available-for-sale or were not classified in any of the other categories above. They included securities intended to be held for an indefinite period of time, but which might be sold in response to needs for liquidity or changes in the market environment. Available-for-sale securities were carried at fair value. Unrealised gains and losses arising from changes in the fair value were recognised in other comprehensive income and accumulated separately in the revaluation reserve, except for impairment losses if any (note 2.10). Foreign exchange gains and losses on monetary items were recognised in the income and expenditure account while foreign exchange gains and losses on non-monetary items were recognised in other comprehensive income. When available-for-sale securities were sold, gains or losses on disposal included the difference between the net sale proceeds and the carrying amount, and the accumulated fair value adjustments which were released from equity to the income and expenditure account.

The investment by the Fund in the shares of the Bank for International Settlements, which was held in order to participate in it on a long-term basis, was carried at cost, less impairment losses if any (note 2.10).

2.6.3.6 Other financial liabilities

Other financial liabilities were financial liabilities other than trading liabilities and those designated at fair value.

The items classified under other financial liabilities and their subsequent measurement in 2017 were the same as those from 1 January 2018 (note 2.6.2.6).

2.6.4 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 a redemption of the debt.

Exchange Fund – Notes to the Financial Statements (continued)

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

2.6.5 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.

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 from 1 January 2018

After the adoption of HKFRS 9 (note 3.1), 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.

Exchange Fund – Notes to the Financial Statements (continued)

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

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 period 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 instrument 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 (net of loss allowance) rather than the gross carrying amount.

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 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.

Exchange Fund – Notes to the Financial Statements (continued)

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

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 39.3.3.

2.10 **Impairment of financial instruments in 2017**

Under HKAS 39, the carrying amounts of loans and receivables, held-to-maturity securities and available-for-sale securities were reviewed at each balance sheet date to determine whether there was objective evidence of impairment. Objective evidence that a financial asset was impaired included observable data that came to the attention of the Group about one or more of the following loss events which had an impact on the future cash flows of the financial asset that could be estimated reliably:

- significant financial difficulties of the issuer or borrower;
- a breach of contract such as default or delinquency in interest or principal payments;
- it becoming probable that the issuer or borrower would enter bankruptcy or other financial reorganisation;
- significant changes in the technological, market, economic or legal environment that had an adverse effect on the issuer or borrower;
- disappearance of an active market for that financial asset; and
- a significant or prolonged decline in the fair value of an investment in an equity instrument below its cost.

The Group first assessed whether objective evidence of impairment existed individually for financial assets that were individually significant. If the Group determined that no objective evidence of impairment existed for an individually assessed financial asset, whether significant or not, it would include that asset in a group of financial assets with similar credit risk characteristics and collectively assess them for impairment. Financial assets that were individually assessed for impairment and for which an impairment loss was or continued to be recognised were not included in a collective assessment of impairment. For exposures which were not individually significant, the Group would assess impairment collectively.

Exchange Fund – Notes to the Financial Statements (continued)

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

If any such evidence existed, the carrying amount of the financial asset would be reduced to the estimated recoverable amount and the impairment loss would be determined and recognised as described below.

For loans and receivables and held-to-maturity securities, an impairment loss was the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate. The carrying amount of the asset was reduced through the use of an allowance account and the impairment loss was recognised in the income and expenditure account.

If in a subsequent period the amount of such impairment loss decreased and the decrease could be linked objectively to an event occurring after the impairment loss had been recognised, the impairment loss would be reversed through the income and expenditure account. A reversal of impairment losses was limited to the asset's carrying amount that would have been determined had no impairment loss been recognised in prior years.

For available-for-sale securities carried at fair value, the cumulative loss that had been recognised in the revaluation reserve was reclassified to the income and expenditure account. The amount of cumulative loss that was recognised in the income and expenditure account was the difference between the acquisition cost (net of any principal repayment and amortisation) and the current fair value, less any impairment loss on that financial asset previously recognised in the income and expenditure account. Impairment losses for debt securities were reversed if the subsequent increase in fair value could be objectively related to an event occurring after the impairment loss had been recognised. Reversals of impairment losses in such circumstances were recognised in the income and expenditure account. Impairment losses for equity securities were not reversed through the income and expenditure account. Any subsequent increase in the fair value of equity securities was recognised in other comprehensive income.

For available-for-sale equity securities carried at cost, the impairment loss was measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the current market rate of return for a similar instrument. Such impairment losses were not reversed.

2.11 Gold

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

2.12 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 are 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.

Exchange Fund – Notes to the Financial Statements (continued)

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

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 the income and expenditure account in equal instalments over the periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the use of the leased asset.

2.13 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):

- a building held for own use situated on freehold land;
- land classified as held under a finance lease and building held for own use situated thereon; and
- plant and equipment, including plant, machinery, furniture, fixtures, equipment, motor vehicles and personal computers.

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

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 classified as held under a finance lease | 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 |
| – 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.

2.14 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 balance sheet 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 greater of its fair value less costs of disposal and value in use.

Exchange Fund – Notes to the Financial Statements (continued)

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

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.

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 provision 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 end of each reporting period.

Provisions are made for outstanding claims, claims incurred but not reported and loss reserve at the end of each reporting period.

Exchange Fund – Notes to the Financial Statements (continued)

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

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.

2.16.3 *Other guarantee and insurance contracts*

The Group provides financial guarantees for loan facilities provided to eligible small and medium enterprises (SMEs) and non-listed enterprises, in return for a guarantee fee, insurance coverage on reverse mortgage loans provided to elderly people and on lump-sum loans provided to owners of properties of subsidised housing schemes primarily for land premium settlement, in return for an insurance premium.

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 guarantee and 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 26 and 27). 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 26). 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 is 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.

Exchange Fund – Notes to the Financial Statements (continued)

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

2.17.2 *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.

2.17.3 *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.

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.

2.17.4 *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 on a straight-line basis over the lease term. 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 *Rental payments under operating leases*

Leases where substantially all the rewards and risks of ownership remain with the lessor are classified as operating leases. Rental payments made under operating leases are charged to the income and expenditure account on a straight-line basis over the period of the relevant leases.

Exchange Fund – Notes to the Financial Statements (continued)

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

2.17.8 *Income tax*

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 balance sheet date. Deferred tax assets and liabilities are not discounted.

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 balance sheet 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 end of the reporting period. 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 profit or loss on disposal is recognised.

Exchange Fund – Notes to the Financial Statements (continued)

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

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.

(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 21.1.

(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 40.

(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 39.3.3.

(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.

Exchange Fund – Notes to the Financial Statements (continued)

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

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.
- (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.

Exchange Fund – Notes to the Financial Statements (continued)

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

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 monetary and financial systems of Hong Kong, 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 34.

3 CHANGES IN ACCOUNTING POLICIES

The HKICPA has issued certain new or revised HKFRSs that are effective for the current accounting period. None of them impact on the accounting policies of the Group except for the adoption of HKFRS 9 as set out below.

The Group has not applied any new standard or interpretation that is not yet effective for the current accounting period (note 41).

3.1 HKFRS 9 “Financial Instruments”

As permitted by the transitional provisions of HKFRS 9, the Group elected not to restate comparative figures. Adjustments to the carrying amounts of certain financial assets at the date of initial application of HKFRS 9 were recognised in the opening balance of accumulated surplus or revaluation reserve of the current period.

The adoption of HKFRS 9 has mainly resulted in changes in the Group’s accounting policies for classification and measurement of financial assets and impairment of financial instruments.

Set out below are disclosures relating to the main impact of the adoption of HKFRS 9 on the Group.

Exchange Fund – Notes to the Financial Statements (continued)

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

3.1.1 Classification and measurement of financial assets

The following tables analyse the impact of adoption of HKFRS 9 on financial assets as at 1 January 2018.

	Note	Group						
		HKAS 39 measurement			Remeasurement		HKFRS 9 measurement	
		Category	Amount	Reclassification	ECL	Other	Amount	Category
Cash and money at call		L&R	216,372	–	–	–	216,372	Amortised cost
Placements with banks and other financial institutions		L&R	156,688	–	(4)	–	156,684	Amortised cost
Financial assets measured at FVTIE		FVTIE	3,489,593	174,942	–	–	3,664,535	FVTIE
From: Debt securities – AFS	(a)			202				
From: Equity securities – AFS	(a)			1,456				
From: Investment funds – AFS	(a)			173,284				
Financial assets measured at FVOCI			–	5,473	–	655	6,128	FVOCI
From: Debt securities – AFS	(b)			4,980				
From: Equity securities – AFS	(b)			493		655		
AFS securities		AFS	180,415	(180,415)	–	–	–	
To: Debt securities – FVTIE	(a)			(202)				
To: Debt securities – FVOCI	(b)			(4,980)				
To: Equity securities – FVTIE	(a)			(1,456)				
To: Equity securities – FVOCI	(b)			(493)				
To: Investment funds – FVTIE	(a)			(173,284)				
Derivative financial instruments		FVTIE	2,403	–	–	–	2,403	FVTIE
HTM securities		HTM	10,348	(10,348)	–	–	–	
To: Debt securities – amortised cost	(c)			(10,348)				
Debt securities measured at amortised cost			–	10,348	(1)	–	10,347	Amortised cost
From: Debt securities – HTM	(c)			10,348	(1)			
Loan portfolio		L&R	7,830	–	–	–	7,830	Amortised cost
Other financial assets		L&R	52,395	–	–	–	52,395	Amortised cost
Total financial assets			4,116,044	–	(5)	655	4,116,694	

Exchange Fund – Notes to the Financial Statements (continued)

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

	Fund						
	HKAS 39 measurement			Remeasurement		HKFRS 9 measurement	
	Note	Category	Amount	Reclassification	ECL	Other	Amount Category
Cash and money at call		L&R	215,649	–	–	–	215,649 Amortised cost
Placements with banks and other financial institutions		L&R	131,251	–	(3)	–	131,248 Amortised cost
Financial assets measured at FVTIE		FVTIE	3,473,286	–	–	–	3,473,286 FVTIE
Financial assets measured at FVOCI			–	493	–	655	1,148 FVOCI
From: Equity securities – AFS	(b)			493		655	
AFS securities		AFS	493	(493)	–	–	–
To: Equity securities – FVOCI	(b)			(493)			
Derivative financial instruments		FVTIE	2,069	–	–	–	2,069 FVTIE
Other financial assets		L&R	51,379	–	–	–	51,379 Amortised cost
Total financial assets			3,874,127	–	(3)	655	3,874,779

Abbreviations:	AFS	Available-for-sale
	ECL	Expected credit losses
	FVOCI	Fair value through other comprehensive income
	FVTIE	Fair value through income and expenditure account
	HTM	Held-to-maturity
	L&R	Loans and receivables

(a) Reclassification from available-for-sale to fair value through income and expenditure account

Unlisted investment funds and certain listed equity securities and listed debt securities amounting to HK\$174,942 million were reclassified from available-for-sale securities to financial assets measured at fair value through income and expenditure account because they are held within a business model in which they are managed and their performance is evaluated on a fair value basis. The related cumulative gain of HK\$34,186 million was transferred from the revaluation reserve to accumulated surplus at 1 January 2018.

(b) Reclassification from available-for-sale to fair value through other comprehensive income

Certain debt securities with a fair value of HK\$4,980 million previously classified as available-for-sale securities were reclassified to financial assets measured at fair value through other comprehensive income as they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling them, and their contractual cash flows represent solely payments of principal and interest.

The Group elected the irrevocable option to designate its equity holdings in the Bank for International Settlements as equity securities measured at fair value through other comprehensive income. These equities, previously classified as available-for-sale securities and carried at cost amounting to HK\$493 million, were restated at fair value with a gain of HK\$655 million recognised in the revaluation reserve at 1 January 2018.

Exchange Fund – Notes to the Financial Statements (continued)

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

(c) Reclassification from held-to-maturity to amortised cost

Certain debt securities amounting to HK\$10,348 million previously classified as held-to-maturity securities were reclassified to debt securities measured at amortised cost. The Group intends to hold these securities to collect contractual cash flows which consist solely of payments of principal and interest. There was no difference between the previous carrying amount and the gross carrying amount at 1 January 2018.

3.1.2 *Impairment of financial instruments*

The Group has the following main types of financial instruments subject to expected credit loss model under HKFRS 9:

- 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 Group has revised its impairment methodology for the above types of financial instruments. The revision had no impact on them as at 1 January 2018, except for the following two types.

(a) Placements with banks and other financial institutions

Placements with banks and other financial institutions are considered to have a low credit risk. The loss allowances are determined on a 12-month expected credit losses basis (note 39.3.3). Impairment losses of HK\$4 million for the Group were recognised in accumulated surplus at 1 January 2018.

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

Investments in debt securities measured at amortised cost and those at fair value through other comprehensive income are considered to have a low credit risk. The loss allowances are determined on a 12-month expected credit losses basis (note 39.3.3). Impairment losses for the Group of HK\$1 million for debt securities measured at amortised cost and of HK\$1 million for debt securities measured at fair value through other comprehensive income were recognised in accumulated surplus at 1 January 2018.

Exchange Fund – Notes to the Financial Statements (continued)

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

3.1.3 Impact on revaluation reserve and accumulated surplus on adoption of HKFRS 9

The impact on revaluation reserve and accumulated surplus due to the adoption of HKFRS 9 is as follows:

	Group	Fund
Revaluation reserve		
Balance at 1 January 2018	34,191	–
Reclassification of financial assets from available-for-sale to fair value through income and expenditure account	(34,186)	–
Gain on financial assets previously carried at cost and restated at fair value	655	655
Recognition of impairment losses on debt securities measured at fair value through other comprehensive income	1	–
Balance at 1 January 2018, as adjusted	661	655
Accumulated surplus		
Balance at 1 January 2018	788,465	713,140
Reclassification of financial assets from available-for-sale to fair value through income and expenditure account	34,186	–
Recognition of impairment losses on:		
– placements with banks and financial institutions	(4)	(3)
– debt securities measured at amortised cost	(1)	–
– debt securities measured at fair value through other comprehensive income	(1)	–
Balance at 1 January 2018, as adjusted	822,645	713,137

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 income/(losses)

	Group		Fund	
	2018	2017	2018	2017
Interest income:				
– from derivative financial instruments	214	404	214	404
– from financial assets measured at fair value through income and expenditure account	60,460	34,741	59,995	34,735
– from financial assets measured at fair value through other comprehensive income	126	–	–	–
– from financial assets measured at amortised cost	4,624	3,623	3,496	2,808
– from available-for-sale securities	–	363	–	–
	65,424	39,131	63,705	37,947
Dividend income:				
– from financial assets measured at fair value through income and expenditure account	16,299	14,227	14,203	13,802
– from financial assets measured at fair value through other comprehensive income	11	–	11	–
– from available-for-sale securities	–	1,899	–	14
– from subsidiaries	–	–	17	18
	16,310	16,126	14,231	13,834
Income from investment properties:				
– rental income	1,510	1,312	–	–
– change in fair value on revaluation	408	582	–	–
	1,918	1,894	–	–
Net realised and unrealised (losses)/gains:				
– on derivative financial instruments	(4,889)	(4,207)	(4,745)	(5,983)
– on financial assets and financial liabilities measured at fair value through income and expenditure account	(57,560)	132,839	(75,798)	131,740
– on disposal of available-for-sale securities	–	15,079	–	–
– from impairment losses on available-for-sale securities	–	(6,561)	–	–
– on gold	(8)	71	(8)	71
	(62,457)	137,221	(80,551)	125,828
Net exchange (loss)/gain	(8,961)	50,303	(8,947)	53,502
TOTAL	12,234	244,675	(11,562)	231,111

Net realised and unrealised (losses)/gains included a loss of HK\$324 million (2017: HK\$1,676 million gain) on hedging instruments designated as fair value hedge and a gain of HK\$325 million (2017: HK\$1,676 million loss) 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 and HKSAR Government funds and statutory bodies

	Group and Fund	
	2018	2017
Interest expense on placements by Fiscal Reserves:		
– at a fixed rate determined annually ¹	43,815	23,482
– at market-based rates	1	1
– at a composite rate determined annually ²	16,386	22,729
Interest expense on placements by HKSAR Government funds and statutory bodies:		
– at a fixed rate determined annually ¹	13,769	8,581
– at market-based rates	48	9
TOTAL	74,019	54,802

¹ This rate was fixed at 4.6% per annum for 2018 (2017: 2.8%) – notes 26, 27 and 32.

² The composite rate was 6.1% per annum for 2018 (2017: 9.6%) – note 26 and 32.

(c) Other interest expense

	Group		Fund	
	2018	2017	2018	2017
Interest expense on Exchange Fund Bills and Notes issued	12,745	5,053	12,745	5,053
Interest expense on placements by subsidiaries	–	–	184	–
Interest expense on derivative financial instruments	81	101	2	7
Interest expense on financial instruments measured at fair value through income and expenditure account	83	48	81	47
Interest expense on other financial instruments	1,195	717	172	33
TOTAL	14,104	5,919	13,184	5,140

Exchange Fund – Notes to the Financial Statements (continued)

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

(d) Operating expenses

	Group		Fund	
	2018	2017	2018	2017
Staff costs				
Salaries and other staff costs	1,593	1,422	1,243	1,140
Retirement benefit costs	132	124	111	105
Premises and equipment expenses				
Depreciation	228	214	178	169
Rental expenses under operating leases	122	100	66	67
Other premises expenses	79	73	66	63
General operating costs				
Maintenance of office and computer equipment	136	112	122	100
Financial information and communication services	67	60	57	53
External relations	33	30	31	29
Public education and publicity	39	33	18	17
Service fees for financial infrastructure	94	113	94	113
Professional and other services	199	165	54	45
Training	11	9	9	8
Operating expenses relating to investment properties	213	207	–	–
Others	60	37	25	23
Investment management and custodian fees				
Management and custodian fees	1,479	1,815	1,381	1,496
Transaction costs	189	227	185	226
Withholding tax	778	662	778	662
Others	101	68	95	63
TOTAL	5,553	5,471	4,513	4,379

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

	Group	
	2018	2017
Fixed pay	83.2	80.1
Variable pay	23.1	21.6
Other benefits	10.5	10.9
	116.8	112.6

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.

Exchange Fund – Notes to the Financial Statements (continued)

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

The numbers of senior staff (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 (2017: 18). The higher figures in the table below reflected staff movements during the respective years.

HK\$	Group	
	2018	2017
500,000 or below	–	1
500,001 to 1,000,000	1	–
1,500,001 to 2,000,000	1	–
2,500,001 to 3,000,000	–	1
3,000,001 to 3,500,000	1	–
4,000,001 to 4,500,000	1	1
4,500,001 to 5,000,000	3	3
5,000,001 to 5,500,000	3	4
5,500,001 to 6,000,000	2	2
6,000,001 to 6,500,000	1	1
6,500,001 to 7,000,000	3	2
7,500,001 to 8,000,000	1	1
9,500,001 to 10,000,000	2	2
10,500,001 to 11,000,000	1	1
	20	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.

(f) Charge for impairment allowances

	Group		Fund	
	2018	2017	2018	2017
Charge for impairment allowances				
Placements with banks and other financial institutions (note 39.3.3(a))	1	–	1	–
Loan portfolio (note 39.3.3(c))	9	–	–	–
Provision on loan commitments (note 39.3.3(d))	5	–	–	–
TOTAL	15	–	1	–

Exchange Fund – Notes to the Financial Statements (continued)

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

5 REVENUE ACCOUNT FOR INSURANCE BUSINESS

	Group			
	2018			2017
	Non-life insurance	Life insurance	Total	Non-life insurance
Gross premiums written	635	2,780	3,415	493
Reinsurance premiums	(69)	–	(69)	(76)
Net premiums written	566	2,780	3,346	417
Movement in unearned premiums, net	(188)	–	(188)	(65)
Net commission and levy expenses	(131)	(12)	(143)	(141)
Net premiums earned	247	2,768	3,015	211
Net claims incurred, benefits paid and movement in policyholders' liabilities	(3)	(3,318)	(3,321)	–
Net premiums earned after provisions	244	(550)	(306)	211

6 INCOME TAX

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

	Group		Fund	
	2018	2017	2018	2017
Current tax				
Hong Kong profits tax				
– current year	47	31	–	–
Taxation outside Hong Kong				
– current year	79	51	–	–
– under-provision in prior years	8	6	–	–
Deferred tax				
(Credit)/Charge for current year	(50)	21	–	–
	84	109	–	–

No provision for Hong Kong profits tax has been made for the Fund as it is an integral part of the government. The provision for Hong Kong profits tax relates to the tax liabilities of the Fund's subsidiaries. For 2018, it is calculated at 16.5% (2017: 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.

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	
	2018	2017	2018	2017
(Deficit)/Surplus before taxation	(79,353)	181,456	(103,464)	166,627
Surplus subject to tax in Hong Kong and elsewhere	5,679	3,706	–	–
Tax calculated at domestic tax rates in the respective countries	1,022	664	–	–
Tax effect of:				
– non-deductible expenses	397	633	–	–
– non-taxable income	(1,375)	(1,203)	–	–
– tax losses not recognised	3	1	–	–
– utilisation of tax losses previously not recognised	(3)	(6)	–	–
– under-provision in prior years	8	6	–	–
– others	32	14	–	–
Actual tax expense	84	109	–	–

(b) Tax payable

	Note	Group		Fund	
		2018	2017	2018	2017
Tax payable	32	231	179	–	–

(c) Deferred tax

	Note	Group		Fund	
		2018	2017	2018	2017
Deferred tax assets	18	(80)	–	–	–
Deferred tax liabilities	32	143	118	–	–
		63	118	–	–

Exchange Fund – Notes to the Financial Statements (continued)

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

The major components of deferred tax (assets)/liabilities and the movements during the year were as follows:

	Group				
	Fair value changes on financial instruments and investment properties	Accelerated tax depreciation	Tax losses	Others	Net deferred tax (assets)/ liabilities
At 1 January 2017	73	38	(3)	(3)	105
Charged to the income and expenditure account	18	–	3	–	21
Credited to other comprehensive income	(18)	–	–	–	(18)
Exchange differences	10	–	–	–	10
At 31 December 2017	83	38	–	(3)	118
At 1 January 2018	83	38	–	(3)	118
Charged/(Credited) to the income and expenditure account	33	(3)	(77)	(3)	(50)
Exchange differences	(5)	–	–	–	(5)
At 31 December 2018	111	35	(77)	(6)	63

There was no significant unprovided deferred tax as at 31 December 2018 and 2017.

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

	Note	Group – 2018					
		Total	Derivative financial instruments	Financial assets and 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	8	183,521	–	–	–	183,521	–
Placements with banks and other financial institutions	9	172,556	–	–	–	172,556	–
Financial assets measured at fair value through income and expenditure account	10	3,682,911	–	3,682,911	–	–	–
Financial assets measured at fair value through other comprehensive income	11	6,246	–	–	6,246	–	–
Derivative financial instruments	13(a)	4,432	4,432	–	–	–	–
Debt securities measured at amortised cost	14	11,547	–	–	–	11,547	–
Loan portfolio	16	7,498	–	–	–	7,498	–
Others		99,645	–	–	–	99,645	–
FINANCIAL ASSETS		4,168,356	4,432	3,682,911	6,246	474,767	–
Certificates of Indebtedness	23	485,666	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	23	12,639	–	–	–	–	12,639
Balance of the banking system	24	78,584	–	–	–	–	78,584
Placements by banks and other financial institutions	25	56,346	–	–	–	–	56,346
Placements by Fiscal Reserves	26	1,173,484	–	–	–	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	27	320,534	–	–	–	–	320,534
Exchange Fund Bills and Notes issued	29	1,129,610	–	1,129,610	–	–	–
Derivative financial instruments	13(a)	4,075	4,075	–	–	–	–
Bank loans	30	12,795	–	–	–	–	12,795
Other debt securities issued	31	37,928	–	144	–	–	37,784
Others		186,309	–	–	–	–	186,309
FINANCIAL LIABILITIES		3,497,970	4,075	1,129,754	–	–	2,364,141

Exchange Fund – Notes to the Financial Statements (continued)

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

	Note	Group – 2017						
		Total	Trading financial instruments and hedging instruments	Financial assets and financial liabilities designated at fair value	Loans and receivables	Held-to- maturity securities	Available- for-sale securities	Other financial liabilities
Cash and money at call	8	216,372	–	–	216,372	–	–	–
Placements with banks and other financial institutions	9	156,688	–	–	156,688	–	–	–
Financial assets designated at fair value	10	3,489,593	–	3,489,593	–	–	–	–
Available-for-sale securities	12	180,415	–	–	–	–	180,415	–
Derivative financial instruments	13(a)	2,403	2,403	–	–	–	–	–
Held-to-maturity securities	15	10,348	–	–	–	10,348	–	–
Loan portfolio	16	7,830	–	–	7,830	–	–	–
Others		52,395	–	–	52,395	–	–	–
FINANCIAL ASSETS		4,116,044	2,403	3,489,593	433,285	10,348	180,415	–
Certificates of Indebtedness	23	456,726	–	–	–	–	–	456,726
Government-issued currency notes and coins in circulation	23	12,213	–	–	–	–	–	12,213
Balance of the banking system	24	179,790	–	–	–	–	–	179,790
Placements by banks and other financial institutions	25	59,337	–	–	–	–	–	59,337
Placements by Fiscal Reserves	26	1,073,794	–	–	–	–	–	1,073,794
Placements by HKSAR Government funds and statutory bodies	27	305,110	–	–	–	–	–	305,110
Exchange Fund Bills and Notes issued	29	1,045,248	–	1,045,248	–	–	–	–
Derivative financial instruments	13(a)	5,562	5,562	–	–	–	–	–
Bank loans	30	13,250	–	–	–	–	–	13,250
Other debt securities issued	31	35,517	–	142	–	–	–	35,375
Others		171,071	–	–	–	–	–	171,071
FINANCIAL LIABILITIES		3,357,618	5,562	1,045,390	–	–	–	2,306,666

Exchange Fund – Notes to the Financial Statements (continued)

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

	Note	Fund – 2018					
		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	8	182,573	–	–	–	182,573	–
Placements with banks and other financial institutions	9	143,097	–	–	–	143,097	–
Financial assets measured at fair value through income and expenditure account	10	3,452,969	–	3,452,969	–	–	–
Financial assets measured at fair value through other comprehensive income	11	1,144	–	–	1,144	–	–
Derivative financial instruments	13(a)	4,270	4,270	–	–	–	–
Others		97,604	–	–	–	97,604	–
FINANCIAL ASSETS		3,881,657	4,270	3,452,969	1,144	423,274	–
Certificates of Indebtedness	23	485,666	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	23	12,639	–	–	–	–	12,639
Balance of the banking system	24	78,584	–	–	–	–	78,584
Placements by banks and other financial institutions	25	56,346	–	–	–	–	56,346
Placements by Fiscal Reserves	26	1,173,484	–	–	–	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	27	320,534	–	–	–	–	320,534
Placements by subsidiaries	28	7,710	–	–	–	–	7,710
Exchange Fund Bills and Notes issued	29	1,129,610	–	1,129,610	–	–	–
Derivative financial instruments	13(a)	3,755	3,755	–	–	–	–
Others		176,138	–	–	–	–	176,138
FINANCIAL LIABILITIES		3,444,466	3,755	1,129,610	–	–	2,311,101

Exchange Fund – Notes to the Financial Statements (continued)

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

	Note	Fund – 2017						
		Total	Trading financial instruments	Financial assets and liabilities designated at fair value	Loans and receivables	Held-to- maturity securities	Available- for-sale securities	Other financial liabilities
Cash and money at call	8	215,649	–	–	215,649	–	–	–
Placements with banks and other financial institutions	9	131,251	–	–	131,251	–	–	–
Financial assets designated at fair value	10	3,473,286	–	3,473,286	–	–	–	–
Available-for-sale securities	12	493	–	–	–	–	493	–
Derivative financial instruments	13(a)	2,069	2,069	–	–	–	–	–
Others		51,379	–	–	51,379	–	–	–
FINANCIAL ASSETS		3,874,127	2,069	3,473,286	398,279	–	493	–
Certificates of Indebtedness	23	456,726	–	–	–	–	–	456,726
Government-issued currency notes and coins in circulation	23	12,213	–	–	–	–	–	12,213
Balance of the banking system	24	179,790	–	–	–	–	–	179,790
Placements by banks and other financial institutions	25	59,337	–	–	–	–	–	59,337
Placements by Fiscal Reserves	26	1,073,794	–	–	–	–	–	1,073,794
Placements by HKSAR Government funds and statutory bodies	27	305,110	–	–	–	–	–	305,110
Exchange Fund Bills and Notes issued	29	1,045,748	–	1,045,748	–	–	–	–
Derivative financial instruments	13(a)	5,293	5,293	–	–	–	–	–
Others		164,002	–	–	–	–	–	164,002
FINANCIAL LIABILITIES		3,302,013	5,293	1,045,748	–	–	–	2,250,972

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	
	2018	2017	2018	2017
At amortised cost				
Balance with central banks	63,385	75,935	63,385	75,935
Balance with banks	120,136	140,437	119,188	139,714
TOTAL	183,521	216,372	182,573	215,649

9 PLACEMENTS WITH BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group		Fund	
	2018	2017	2018	2017
At amortised cost				
Placements in respect of reverse repurchase agreements:				
– with central banks	8,201	48,056	8,201	48,056
– with banks and other financial institutions	853	1,497	853	1,497
Other placements:				
– with central banks	14,876	–	14,876	–
– with banks	148,631	107,135	119,171	81,698
	172,561	156,688	143,101	131,251
Less: allowances for expected credit losses	(5)	–	(4)	–
TOTAL	172,556	156,688	143,097	131,251

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 (2017: FINANCIAL ASSETS DESIGNATED AT FAIR VALUE)

	Group		Fund	
	2018	2017	2018	2017
At fair value				
Debt securities				
Treasury bills and commercial paper				
Listed outside Hong Kong	65,026	255,572	65,026	255,572
Unlisted	976,006	926,396	976,006	926,396
Certificates of deposit				
Listed outside Hong Kong	–	7,174	–	7,174
Unlisted	179,563	164,319	179,563	164,319
Other debt securities				
Listed in Hong Kong	9,422	6,254	9,422	6,254
Listed outside Hong Kong	1,411,885	1,198,095	1,411,885	1,198,095
Unlisted	198,379	216,252	183,285	203,764
Total debt securities	2,840,281	2,774,062	2,825,187	2,761,574
Equity securities				
Listed in Hong Kong	176,010	204,202	175,476	204,202
Listed outside Hong Kong	270,059	342,941	270,059	342,941
Unlisted	185,363	168,388	182,247	164,569
Total equity securities	631,432	715,531	627,782	711,712
Investment funds				
Unlisted	211,198	–	–	–
TOTAL	3,682,911	3,489,593	3,452,969	3,473,286

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	
	2018	2017	2018	2017
At fair value				
Debt securities				
Listed in Hong Kong	598	–	–	–
Listed outside Hong Kong	2,129	–	–	–
Unlisted	2,375	–	–	–
	5,102	–	–	–
Equity securities				
Unlisted	1,144	–	1,144	–
TOTAL	6,246	–	1,144	–

The Group's investment in unlisted equity securities as at 31 December 2018 represents a holding of 4,285 shares in the Bank for International Settlements. The nominal value of each share is 5,000 Special Drawing Rights (SDRs) and is 25% paid up (note 37(a)).

12 AVAILABLE-FOR-SALE SECURITIES

	Group		Fund	
	2018	2017	2018	2017
Debt securities, at fair value				
Listed in Hong Kong	–	481	–	–
Listed outside Hong Kong	–	2,315	–	–
Unlisted	–	2,386	–	–
	–	5,182	–	–
Equity securities				
Listed in Hong Kong, at fair value	–	1,456	–	–
Unlisted, at cost	–	493	–	493
	–	1,949	–	493
Investment funds, at fair value				
Unlisted	–	173,284	–	–
TOTAL	–	180,415	–	493

The Group's investment in unlisted equity securities as at 31 December 2017 represented a holding of 4,285 shares in the Bank for International Settlements. The nominal value of each share was 5,000 SDRs and was 25% paid up (note 37(a)). Investment in unlisted investment funds mainly represented the Group's holding of private equity funds under the Long-Term Growth Portfolio.

Exchange Fund – Notes to the Financial Statements (continued)

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

13 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, forward foreign exchange contracts and bond and equity index option 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 39.

(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			
	2018		2017		2018		2017	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Derivatives categorised as held for trading								
Interest rate derivatives								
Interest rate swap contracts	358	183	554	246	347	129	548	94
Interest rate futures contracts	–	–	1	1	–	–	1	1
Equity derivatives								
Equity index futures contracts	255	145	249	55	255	145	249	55
Equity index option contracts	–	–	214	455	–	–	214	455
Currency derivatives								
Forward foreign exchange contracts	3,575	3,260	940	4,644	3,573	3,258	940	4,644
Bond derivatives								
Bond futures contracts	61	30	42	33	61	30	42	33
Bond option contracts	–	–	19	–	–	–	19	–
Commodity derivatives								
Commodity futures contracts	34	193	56	11	34	193	56	11
	4,283	3,811	2,075	5,445	4,270	3,755	2,069	5,293
Derivatives designated as hedging instruments in fair value hedges								
Interest rate derivatives								
Interest rate swap contracts	129	79	177	66	–	–	–	–
Currency derivatives								
Currency swap contracts	20	185	151	51	–	–	–	–
	149	264	328	117	–	–	–	–
TOTAL	4,432	4,075	2,403	5,562	4,270	3,755	2,069	5,293

Exchange Fund – Notes to the Financial Statements (continued)

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

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 securities due to movements in market interest rates.

(b) Notional amounts of derivative financial instruments

An analysis of the notional amounts of derivative financial instruments held at the balance sheet 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									
	2018					2017				
	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		3 months or less	but over 3 months	but over 1 year			
Total	or less	3 months	1 year	5 years	Total	or less	3 months	1 year	5 years	
Derivatives categorised as held for trading										
Interest rate derivatives										
Interest rate swap contracts	29,009	50	1,601	18,279	9,079	29,746	–	800	16,334	12,612
Interest rate futures contracts	–	–	–	–	–	9,188	85	4,553	4,550	–
Equity derivatives										
Equity index futures contracts	31,757	31,757	–	–	–	74,297	74,297	–	–	–
Equity index option contracts	–	–	–	–	–	42,530	14,404	28,126	–	–
Currency derivatives										
Forward foreign exchange contracts	401,717	341,904	59,813	–	–	404,603	323,731	80,872	–	–
Bond derivatives										
Bond futures contracts	37,747	37,747	–	–	–	41,808	41,808	–	–	–
Bond option contracts	–	–	–	–	–	3,909	–	3,909	–	–
Commodity derivatives										
Commodity futures contracts	18,445	12,227	6,218	–	–	11,279	7,449	3,830	–	–
	518,675	423,685	67,632	18,279	9,079	617,360	461,774	122,090	20,884	12,612
Derivatives designated as hedging instruments in fair value hedges										
Interest rate derivatives										
Interest rate swap contracts	14,247	2,180	3,811	6,916	1,340	13,909	1,826	4,378	6,540	1,165
Currency derivatives										
Currency swap contracts	8,455	1,769	3,915	1,330	1,441	7,302	1,457	3,592	812	1,441
	22,702	3,949	7,726	8,246	2,781	21,211	3,283	7,970	7,352	2,606
TOTAL	541,377	427,634	75,358	26,525	11,860	638,571	465,057	130,060	28,236	15,218

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									
	2018					2017				
		1 year or less	5 years or less	Over 5 years			1 year or less	5 years or less	Over 5 years	
	Total	3 months or less	3 months but over	1 year but over	5 years	Total	3 months or less	3 months but over	1 year but over	Over 5 years
Derivatives categorised										
as held for trading										
Interest rate derivatives										
Interest rate swap contracts	17,992	–	1,600	7,592	8,800	18,282	–	800	5,882	11,600
Interest rate futures contracts	–	–	–	–	–	9,188	85	4,553	4,550	–
Equity derivatives										
Equity index futures contracts	31,757	31,757	–	–	–	74,297	74,297	–	–	–
Equity index option contracts	–	–	–	–	–	42,530	14,404	28,126	–	–
Currency derivatives										
Forward foreign exchange contracts	396,552	340,004	56,548	–	–	404,603	323,731	80,872	–	–
Bond derivatives										
Bond futures contracts	37,747	37,747	–	–	–	41,808	41,808	–	–	–
Bond option contracts	–	–	–	–	–	3,909	–	3,909	–	–
Commodity derivatives										
Commodity futures contracts	18,445	12,227	6,218	–	–	11,279	7,449	3,830	–	–
TOTAL	502,493	421,735	64,366	7,592	8,800	605,896	461,774	122,090	10,432	11,600

14 DEBT SECURITIES MEASURED AT AMORTISED COST

	Group		Fund	
	2018	2017	2018	2017
At amortised cost				
Debt securities				
Listed in Hong Kong	6,317	–	–	–
Listed outside Hong Kong	2,106	–	–	–
Unlisted	3,125	–	–	–
	11,548	–	–	–
Less: allowances for expected credit losses	(1)	–	–	–
TOTAL	11,547	–	–	–

Fair value information of the above debt securities is provided in note 40.2.

Exchange Fund – Notes to the Financial Statements (continued)

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

15 HELD-TO-MATURITY SECURITIES

	Group		Fund	
	2018	2017	2018	2017
At amortised cost				
Debt securities				
Listed in Hong Kong	–	5,502	–	–
Listed outside Hong Kong	–	1,959	–	–
Unlisted	–	2,887	–	–
TOTAL	–	10,348	–	–

Fair value information of the above held-to-maturity securities is provided in note 40.2.

16 LOAN PORTFOLIO

	Group		Fund	
	2018	2017	2018	2017
At amortised cost				
Mortgage loans	6,179	7,485	–	–
Other loans	1,328	345	–	–
	7,507	7,830	–	–
Less: allowances for expected credit losses	(9)	–	–	–
TOTAL	7,498	7,830	–	–

17 GOLD

	Group and Fund	
	2018	2017
Gold, at fair value		
66,798 ounces (2017: 66,798 ounces)	670	677

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.

Exchange Fund – Notes to the Financial Statements (continued)

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

18 OTHER ASSETS

	Group		Fund	
	2018	2017	2018	2017
Interest and dividends receivable	11,634	9,012	11,217	8,693
Unsettled sales and redemption of securities	80,944	22,904	80,456	22,904
Prepayments, receivables and other assets	6,584	19,857	5,434	19,186
Staff housing loans	217	174	217	174
Loan to the International Monetary Fund	314	462	314	462
Reinsurance assets	172	165	–	–
Deferred tax assets	80	–	–	–
TOTAL	99,945	52,574	97,638	51,419

19 INTERESTS IN SUBSIDIARIES

	Fund	
	2018	2017
Unlisted shares, at cost	7,312	2,312
Loans to subsidiaries	162,434	135,219
TOTAL	169,746	137,531

Exchange Fund – Notes to the Financial Statements (continued)

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

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 2018:

Name of company	Principal activities	Issued equity capital
The Hong Kong Mortgage Corporation Limited	Investment in mortgages and loans	HK\$7,000,000,000
HKMC Annuity Limited ²	Long term insurance	HK\$5,000,000,000
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
BNR Finance 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
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

¹ 55% equity interest held by the Fund.

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

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

In April 2018, The Hong Kong Mortgage Corporation Limited issued additional share capital of HK\$5 billion to the Fund for setting up HKMC Annuity Limited.

The Fund has committed to inject additional funds up to 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 the HKMC Annuity Limited for maintaining its margin of solvency above a certain level. Up to 31 December 2018, there had been no capital injection to The Hong Kong Mortgage Corporation Limited under this arrangement.

The Fund has provided The Hong Kong Mortgage Corporation Limited with a revolving credit facility of HK\$30 billion (2017: HK\$30 billion) at prevailing market interest rates. As at 31 December 2018, there was no outstanding balance due from The Hong Kong Mortgage Corporation Limited under this facility (2017: Nil).

Exchange Fund – Notes to the Financial Statements (continued)

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

Loans to subsidiaries which principally hold investments including properties are unsecured, interest-free and repayable on demand.

Placements by subsidiaries are disclosed in note 28.

The financial statements of the principal 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 8% (2017: 7%) and 2% (2017: 2%) of the Group's total assets and total liabilities, respectively.

20 INTERESTS IN ASSOCIATES AND JOINT VENTURES

	Group	
	2018	2017
Associates¹		
Share of net assets	7,604	8,812
Joint ventures²		
Share of net assets	10,338	8,332
Due from joint ventures	26,394	18,603
	36,732	26,935
TOTAL	44,336	35,747

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 (2017: HK\$5,000).

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

20.1 Interests in associates

The Group holds investments in four associates. One associate, incorporated in Hong Kong, provides interbank clearing services. The other three associates, incorporated outside Hong Kong, hold overseas investment properties and investment funds. The Group holds equity interest in these associates ranging from 21% to 50%.

Exchange Fund – Notes to the Financial Statements (continued)

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

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

	Group	
	2018	2017
Share of profit for the year	454	434
Share of other comprehensive (loss)/income	(399)	248
Share of total comprehensive income	55	682
Aggregate carrying amount of interests in the associates	7,604	8,812

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

	Group	
	2018	2017
Commitments to contribute funds	650	1,804

20.2 Interests in joint ventures

The Group holds investments in 20 joint ventures, which are all incorporated outside Hong Kong. The principal activities of these joint ventures are the holding of overseas investment properties. At the end of 2018, the Group held equity interest in these joint ventures ranging from 35% to 99%. 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. At 31 December 2018, the aggregate interest in these joint ventures amounted to 0.87% (2017: 0.64%) of the Group's total assets.

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

	Group	
	2018	2017
Share of profit for the year	1,759	2,195
Share of other comprehensive (loss)/income	(355)	837
Share of total comprehensive income	1,404	3,032
Aggregate carrying amount of interests in the joint ventures	36,732	26,935

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

	Group	
	2018	2017
Commitments to contribute funds	3,561	1,334

Exchange Fund – Notes to the Financial Statements (continued)

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

21 INVESTMENT PROPERTIES

	Group		Fund	
	2018	2017	2018	2017
At fair value				
At 1 January	26,242	22,723	–	–
Additions	111	180	–	–
Change in fair value on revaluation	408	582	–	–
Exchange differences	(1,440)	2,757	–	–
At 31 December	25,321	26,242	–	–

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

	Group		Fund	
	2018	2017	2018	2017
Held outside Hong Kong				
on freehold	12,742	13,136	–	–
on long-term lease (over 50 years)	12,579	13,106	–	–
TOTAL	25,321	26,242	–	–

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	
	2018	2017	2018	2017
Gross rental income	1,510	1,312	–	–
Direct expenses	(213)	(207)	–	–
Net rental income	1,297	1,105	–	–

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

	Group		Fund	
	2018	2017	2018	2017
Within one year	1,178	1,209	–	–
After one year but not later than five years	3,779	4,083	–	–
After five years but not later than ten years	2,047	2,539	–	–
After ten years but not later than fifteen years	113	9	–	–
After fifteen years but not later than twenty years	3	4	–	–
TOTAL	7,120	7,844	–	–

Exchange Fund – Notes to the Financial Statements (continued)

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

At 31 December 2018, investment properties with a fair value of HK\$25,321 million (2017: HK\$26,242 million) were pledged to secure general banking facilities granted to the Group (note 30).

21.1 Fair value measurement of investment properties

The Group's investment properties are revalued by independent professional valuers on an open market value basis at the end of each financial year. 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 4.25% to 5.30% (2017: 5.00% to 5.60%), net initial yields which ranged from 3.61% to 6.55% (2017: 3.40% to 6.20%) and terminal capitalisation rates which ranged from 3.25% to 4.40% (2017: 4.00% to 4.71%). 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.

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

	Group		Fund	
	2018	2017	2018	2017
At 1 January	26,242	22,723	–	–
Additions	111	180	–	–
Change in fair value on revaluation recognised as "income from investment properties" in the income and expenditure account	408	582	–	–
Exchange differences recognised in other comprehensive income	(1,440)	2,757	–	–
At 31 December	25,321	26,242	–	–
Net gains recognised in the income and expenditure account relating to investment properties held at the balance sheet date	408	582	–	–

Exchange Fund – Notes to the Financial Statements (continued)

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

22 PROPERTY, PLANT AND EQUIPMENT

	Group			
	Premises	Plant and equipment	Computer software licences and system development costs	Total
Cost				
At 1 January 2017	3,852	1,299	400	5,551
Additions	–	141	21	162
Disposals	–	(47)	–	(47)
At 31 December 2017	3,852	1,393	421	5,666
At 1 January 2018	3,852	1,393	421	5,666
Additions	–	98	38	136
Disposals	–	(13)	–	(13)
At 31 December 2018	3,852	1,478	459	5,789
Accumulated depreciation				
At 1 January 2017	1,162	878	320	2,360
Charge for the year	87	102	25	214
Written back on disposal	–	(46)	–	(46)
At 31 December 2017	1,249	934	345	2,528
At 1 January 2018	1,249	934	345	2,528
Charge for the year	88	114	26	228
Written back on disposal	–	(13)	–	(13)
At 31 December 2018	1,337	1,035	371	2,743
Net book value				
At 31 December 2018	2,515	443	88	3,046
At 31 December 2017	2,603	459	76	3,138

Exchange Fund – Notes to the Financial Statements (continued)

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

	Fund			Total
	Premises	Plant and equipment	Computer software licences and system development costs	
Cost				
At 1 January 2017	3,843	556	400	4,799
Additions	–	86	21	107
Disposals	–	(15)	–	(15)
At 31 December 2017	3,843	627	421	4,891
At 1 January 2018	3,843	627	421	4,891
Additions	–	50	38	88
Disposals	–	(12)	–	(12)
At 31 December 2018	3,843	665	459	4,967
Accumulated depreciation				
At 1 January 2017	1,155	380	320	1,855
Charge for the year	87	57	25	169
Written back on disposal	–	(15)	–	(15)
At 31 December 2017	1,242	422	345	2,009
At 1 January 2018	1,242	422	345	2,009
Charge for the year	88	64	26	178
Written back on disposal	–	(12)	–	(12)
At 31 December 2018	1,330	474	371	2,175
Net book value				
At 31 December 2018	2,513	191	88	2,792
At 31 December 2017	2,601	205	76	2,882

The net book value of premises comprises:

	Group		Fund	
	2018	2017	2018	2017
In Hong Kong				
Leasehold land and the building situated thereon (leasehold between 10 and 50 years)	2,493	2,581	2,491	2,579
Outside Hong Kong				
Freehold land and the building situated thereon	22	22	22	22
TOTAL	2,515	2,603	2,513	2,601

Exchange Fund – Notes to the Financial Statements (continued)

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

23 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	
	2018	2017	2018	2017
Carrying amount	485,666	456,726	12,639	12,213
Reconciliation with face value:				
Hong Kong dollar face value	483,845	455,715	12,592	12,186
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\$ 62,031 million	US\$58,425 million	US\$ 1,614 million	US\$1,562 million
Market exchange rate for translation into Hong Kong dollars	US\$1=HK\$7.82935	US\$1=HK\$7.8173	US\$1=HK\$7.82935	US\$1=HK\$7.8173
Carrying amount	485,666	456,726	12,639	12,213

24 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.

Exchange Fund – Notes to the Financial Statements (continued)

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

25 PLACEMENTS BY BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group and Fund	
	2018	2017
At amortised cost		
Placements by central banks	56,346	59,337

26 PLACEMENTS BY FISCAL RESERVES

	Group and Fund	
	2018	2017
Placements by Operating and Capital Reserves		
(i) with interest payable at a fixed rate determined annually		
General Revenue Account	635,424	589,950
Capital Works Reserve Fund	220,127	186,524
Civil Service Pension Reserve Fund	38,315	35,129
Disaster Relief Fund	23	17
Innovation and Technology Fund	26,383	7,271
Lotteries Fund	23,989	23,210
Capital Investment Fund	1,873	3,020
Loan Fund	2,815	4,141
	948,949	849,262
(ii) with interest payable at market-based rates		
General Revenue Account	5	2
	948,954	849,264
Placements by Future Fund with interest payable at a composite rate determined annually		
Land Fund	219,730	219,730
General Revenue Account	4,800	4,800
	224,530	224,530
TOTAL	1,173,484	1,073,794

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 every January. 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 4.6% per annum for 2018 (2017: 2.8%).

Exchange Fund – Notes to the Financial Statements (continued)

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

The Future Fund was established on 1 January 2016. Placements by Future Fund comprise an initial endowment from the balance of the Land Fund and periodic top-ups from the General Revenue Account 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 2018 was 6.1% (2017: 9.6%). Placements by Future Fund, together with the interest thereon (note 32), are repayable on 31 December 2025 unless otherwise directed by the Financial Secretary according to the terms of the placements.

27 PLACEMENTS BY HONG KONG SPECIAL ADMINISTRATIVE REGION GOVERNMENT FUNDS AND STATUTORY BODIES

	Group and Fund	
	2018	2017
Placements with interest payable at a fixed rate¹ determined annually		
Bond Fund	150,419	145,702
Community Care Fund	17,821	18,499
Elite Athletes Development Fund	5,433	6,273
Employees Retraining Board	14,269	14,432
Environment and Conservation Fund	5,826	5,569
Hospital Authority	19,368	18,833
Housing Authority	32,853	29,494
Language Fund	6,025	5,760
Research Endowment Fund	29,250	26,266
Samaritan Fund	6,041	7,373
Trading Funds	7,969	7,619
West Kowloon Cultural District Authority	13,010	12,438
Other funds ²	8,220	5,936
	316,504	304,194
Placements with interest payable at market-based rates		
Deposit Protection Scheme Fund	4,030	916
TOTAL	320,534	305,110

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 4.6% per annum for 2018 (2017: 2.8%).

² This is a collective placement by 13 HKSAR Government funds (2017: 12 HKSAR Government funds).

Exchange Fund – Notes to the Financial Statements (continued)

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

28 PLACEMENTS BY SUBSIDIARIES

	Fund	
	2018	2017
Placements by HKMC Annuity Limited ¹	7,710	–

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

29 EXCHANGE FUND BILLS AND NOTES ISSUED

	Group		Fund	
	2018	2017	2018	2017
At fair value				
Exchange Fund Bills and Notes issued				
Exchange Fund Bills	1,098,812	1,008,939	1,098,812	1,008,939
Exchange Fund Notes	32,394	38,305	32,394	38,305
	1,131,206	1,047,244	1,131,206	1,047,244
Exchange Fund Bills held	(1,596)	(1,996)	(1,596)	(1,496)
TOTAL	1,129,610	1,045,248	1,129,610	1,045,748

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 2-year, 3-year, 5-year, 7-year, 10-year and 15-year maturities.

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				Fund			
	2018		2017		2018		2017	
	Exchange Fund Bills	Exchange Fund Notes	Exchange Fund Bills	Exchange Fund Notes	Exchange Fund Bills	Exchange Fund Notes	Exchange Fund Bills	Exchange Fund Notes
Issued by Currency Board Operations segment								
Nominal value at 1 January	1,010,679	37,800	914,898	48,200	1,010,679	37,800	914,898	48,200
Issuance	3,299,942	4,800	2,995,629	4,800	3,299,942	4,800	2,995,629	4,800
Redemption	(3,208,319)	(10,400)	(2,899,848)	(15,200)	(3,208,319)	(10,400)	(2,899,848)	(15,200)
Nominal value at 31 December	1,102,302	32,200	1,010,679	37,800	1,102,302	32,200	1,010,679	37,800
Long positions held by Financial Stability and Other Activities segment								
Nominal value at 31 December	(1,600)	–	(2,000)	–	(1,600)	–	(1,500)	–
Total nominal value	1,100,702	32,200	1,008,679	37,800	1,100,702	32,200	1,009,179	37,800
Carrying amount, at fair value	1,097,216	32,394	1,006,943	38,305	1,097,216	32,394	1,007,443	38,305
Difference	3,486	(194)	1,736	(505)	3,486	(194)	1,736	(505)

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

30 BANK LOANS

	Group		Fund	
	2018	2017	2018	2017
At amortised cost				
Bank loans repayable:				
After one year but not later than two years	4,360	–	–	–
After two years but not later than five years	5,717	10,370	–	–
After five years but not later than ten years	2,718	2,880	–	–
TOTAL	12,795	13,250	–	–

At 31 December 2018, the banking facilities of the Group were secured by mortgage over the investment properties with a fair value of HK\$25,321 million (2017: HK\$26,242 million) (note 21).

Exchange Fund – Notes to the Financial Statements (continued)

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

31 OTHER DEBT SECURITIES ISSUED

	Group		Fund	
	2018	2017	2018	2017
Debt securities issued, carried at amortised cost	15,176	13,937	–	–
Debt securities issued, designated as hedged items under fair value hedge	22,608	21,438	–	–
Debt securities issued, measured at fair value	144	142	–	–
TOTAL	37,928	35,517	–	–

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	
	2018	2017	2018	2017
Total debt securities issued				
Nominal value at 1 January	35,398	35,783	–	–
Issuance	34,074	29,071	–	–
Redemption	(31,290)	(29,509)	–	–
Foreign currency translation differences	(36)	53	–	–
Nominal value at 31 December	38,146	35,398	–	–
Carrying amount	37,928	35,517	–	–
Difference	218	(119)	–	–
Debt securities issued, measured at fair value				
Nominal value	184	184	–	–
Carrying amount, at fair value	144	142	–	–
Difference	40	42	–	–

The fair value changes of debt securities issued measured at fair value are attributable to changes in benchmark interest rates.

Exchange Fund – Notes to the Financial Statements (continued)

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

32 OTHER LIABILITIES

	Group		Fund	
	2018	2017	2018	2017
Unsettled purchases of securities	43,773	51,324	43,773	51,324
Housing Reserve ¹	82,376	78,753	82,376	78,753
Accrued interest on placements by Fiscal Reserves (Future Fund) ²	49,186	32,800	49,186	32,800
Accrued interest on placements by subsidiaries	–	–	23	–
Accrued charges and other liabilities	6,487	7,234	763	1,107
Other interest payable	447	376	126	122
Insurance liabilities	4,607	1,130	–	–
Provision for expected credit losses on loan commitments	5	–	–	–
Tax payable	231	179	–	–
Deferred tax liabilities	143	118	–	–
TOTAL	187,255	171,914	176,247	164,106

¹ 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 26) on an annual basis and shall be paid on a date to be determined by the Financial Secretary. The interest accrued on the Housing Reserve for 2018 was HK\$3,623 million (2017: HK\$2,145 million).

² In accordance with the directive made by the Financial Secretary in December 2015, the accrued interest on placements by Future Fund should be rolled over and compounded at the composite rate (note 26) on an annual basis and shall only be paid upon maturity of the placements (i.e. 31 December 2025) 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.)

33 CASH AND CASH EQUIVALENTS AND OTHER CASH FLOW INFORMATION

(a) Components of cash and cash equivalents

	Group		Fund	
	2018	2017	2018	2017
Cash and money at call	183,521	216,372	182,573	215,649
Placements with banks and other financial institutions	153,083	144,829	138,403	129,708
Treasury bills and commercial paper	46,113	12,227	46,113	12,227
Certificates of deposit	–	4,127	–	4,127
TOTAL	382,717	377,555	367,089	361,711

(b) Reconciliation of cash and cash equivalents

	Note	Group		Fund	
		2018	2017	2018	2017
Amounts shown in the balance sheet					
Cash and money at call	8	183,521	216,372	182,573	215,649
Placements with banks and other financial institutions	9	172,561	156,688	143,101	131,251
Treasury bills and commercial paper	10	1,041,032	1,181,968	1,041,032	1,181,968
Certificates of deposit	10	179,563	171,493	179,563	171,493
		1,576,677	1,726,521	1,546,269	1,700,361
Less: Amounts with original maturity beyond 3 months		(1,193,960)	(1,348,966)	(1,179,180)	(1,338,650)
Cash and cash equivalents in the statement of cash flows					
		382,717	377,555	367,089	361,711

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 Group's 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		Total
	Bank loans (Note 30)	Other debt securities issued (Note 31)	
At 1 January 2017	11,724	34,233	45,957
Changes from financing cash flows			
Bank loans raised	106	–	106
Proceeds from issue of other debt securities	–	29,027	29,027
Redemption of other debt securities issued	–	(29,509)	(29,509)
Non-cash changes			
Amortisation	16	39	55
Exchange differences	1,404	52	1,456
Fair value changes	–	1,675	1,675
At 31 December 2017	13,250	35,517	48,767
At 1 January 2018	13,250	35,517	48,767
Changes from financing cash flows			
Bank loans raised	235	–	235
Proceeds from issue of other debt securities	–	34,006	34,006
Redemption of other debt securities issued	–	(31,290)	(31,290)
Non-cash changes			
Amortisation	16	62	78
Exchange differences	(706)	(36)	(742)
Fair value changes	–	(331)	(331)
At 31 December 2018	12,795	37,928	50,723

Exchange Fund – Notes to the Financial Statements (continued)

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

34 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		Reserves		Financial Stability and		Total	
	Operations		Management		Other Activities			
	(note (a))							
	2018	2017	2018	2017	2018	2017	2018	2017
Income								
Interest and dividend income	38,467	20,423	41,245	32,950	2,022	1,884	81,734	55,257
Investment (losses)/gains	(2,444)	7,873	(64,341)	177,273	(2,715)	4,272	(69,500)	189,418
Other income	–	–	44	45	3,547	671	3,591	716
	36,023	28,296	(23,052)	210,268	2,854	6,827	15,825	245,391
Expenditure								
Interest expense	12,746	5,053	74,816	55,257	561	411	88,123	60,721
Other expenses	1,313	1,347	1,904	1,992	6,051	2,504	9,268	5,843
	14,059	6,400	76,720	57,249	6,612	2,915	97,391	66,564
(Deficit)/Surplus before share of profit of associates and joint ventures	21,964	21,896	(99,772)	153,019	(3,758)	3,912	(81,566)	178,827
Share of profit of associates and joint ventures, net of tax	–	–	2,174	2,589	39	40	2,213	2,629
(Deficit)/Surplus before taxation	21,964	21,896	(97,598)	155,608	(3,719)	3,952	(79,353)	181,456

Exchange Fund – Notes to the Financial Statements (continued)

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

	Group									
	Currency Board		Reserves		Financial Stability and		Re-allocation		Total	
	Operations		Management		Other Activities		(note (b) & (c))			
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Assets										
Backing Assets										
Investment in designated										
US dollar assets	1,796,208	1,821,395	–	–	–	–	–	–	1,796,208	1,821,395
Interest receivable on designated										
US dollar assets	3,489	1,976	–	–	–	–	–	–	3,489	1,976
Net accounts (payable)/receivable	(6,184)	8,076	–	–	–	–	6,184	2	–	8,078
Other investments	–	–	2,125,196	2,110,585	212,612	193,928	590	(1,996)	2,338,398	2,302,517
Other assets	–	–	26,662	42,611	5,546	4,902	71,726	548	103,934	48,061
TOTAL ASSETS	1,793,513	1,831,447	2,151,858	2,153,196	218,158	198,830	78,500	(1,446)	4,242,029	4,182,027
Liabilities										
Monetary Base										
Certificates of Indebtedness	485,666	456,726	–	–	–	–	–	–	485,666	456,726
Government-issued currency notes										
and coins in circulation	12,639	12,213	–	–	–	–	–	–	12,639	12,213
Balance of the banking system	78,584	179,790	–	–	–	–	–	–	78,584	179,790
Exchange Fund Bills and Notes issued	1,131,206	1,047,244	–	–	–	–	(1,596)	(1,996)	1,129,610	1,045,248
Interest payable on Exchange										
Fund Notes	125	122	–	–	–	–	–	–	125	122
Net accounts (receivable)/payable	(73,788)	(458)	–	–	–	–	73,912	548	124	90
Other debt securities issued	–	–	635	676	37,293	34,841	–	–	37,928	35,517
Placements by banks and other										
financial institutions	–	–	–	–	56,346	59,337	–	–	56,346	59,337
Bank loans	–	–	12,795	13,250	–	–	–	–	12,795	13,250
Placements by Fiscal Reserves	–	–	1,173,484	1,073,794	–	–	–	–	1,173,484	1,073,794
Placements by HKSAR Government										
funds and statutory bodies	–	–	316,504	304,194	4,030	916	–	–	320,534	305,110
Other liabilities	–	–	173,626	168,886	11,271	8,376	6,184	2	191,081	177,264
TOTAL LIABILITIES	1,634,432	1,695,637	1,677,044	1,560,800	108,940	103,470	78,500	(1,446)	3,498,916	3,358,461

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, the 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. The Backing Ratio stood at 109.86% as at 31 December 2018 (2017: 108.08%).

(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. This re-allocation adjustment adds back these items in order to reconcile the segmental information to the Group balance sheet.

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" to offset corresponding investments in the Backing Assets. As at 31 December 2018, deductions from the Backing Assets comprised "other liabilities" of HK\$6,184 million (2017: HK\$2 million).

The Monetary Base is also presented on a net basis. As at 31 December 2018, deductions from the Monetary Base comprising "other assets" of HK\$73,912 million (2017: HK\$548 million) consisted of three components:

- As Hong Kong dollar interest rate swaps have been used as a means to manage the cost of issuing Exchange Fund Notes, interest receivable of HK\$10 million (2017: HK\$20 million) and unrealised gains of HK\$337 million (2017: HK\$528 million) on these interest rate swaps are included in "net accounts (receivable)/payable" to reduce the Monetary Base.
- When Hong Kong dollar overnight advances secured on EFBN have been made to banks under the Discount Window Operations, the advances of HK\$2,186 million (2017: Nil) are included in "net accounts (receivable)/payable" to reduce the Monetary Base.
- EFBN issued on tender date but not yet settled of HK\$71,379 million (2017: Nil) are included in "net accounts (receivable)/payable" to reduce 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.)

35 PLEDGED ASSETS

Assets are pledged as margin for futures contracts 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	2018	2017	2018	2017
Secured liabilities					
Commodity futures contracts, at fair value		159	–	159	–
Interest rate swap contracts, at fair value		6	4	6	4
Bank loans	30	12,795	13,250	–	–
Other debt securities issued		635	676	–	–
Assets pledged					
Cash and money at call		132	85	132	85
Available-for-sale securities		–	1,762	–	–
Financial assets measured at fair value through income and expenditure account		4,281	4,859	4,281	4,859
Equity interests in associates		1,623	–	–	–
Investment properties	21	25,321	26,242	–	–

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.

Exchange Fund – Notes to the Financial Statements (continued)

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

36 COMMITMENTS

(a) Capital commitments

Capital expenditure authorised but not provided for in the financial statements at the balance sheet date was as follows:

	Group		Fund	
	2018	2017	2018	2017
Contracted for	38	46	35	42
Authorised but not yet contracted for	259	301	208	250
	297	347	243	292

(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 2018, the Fund had an undertaking under the NAB to lend foreign currencies to the IMF up to HK\$3,702 million equivalent (2017: HK\$3,788 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\$314 million equivalent with a repayment term of five years (2017: HK\$462 million equivalent) (note 18).

(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 (2017: 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 2018, there was no outstanding balance due from the HKDPB under this facility (2017: 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\$45,019 million equivalent (2017: HK\$44,949 million equivalent). The arrangement allows each organisation to enhance the liquidity of its foreign reserve portfolio with minimal additional risk. As at 31 December 2018, there was no outstanding transaction with any central bank under this arrangement (2017: 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 (2017: US\$240 billion). Hong Kong, through the HKMA, participates in the CMIM and has undertaken to commit up to US\$8.4 billion (2017: US\$8.4 billion) out of the Fund. Hong Kong has the right to request liquidity support up to US\$6.3 billion (2017: US\$6.3 billion) from the CMIM in case of emergency. Up to 31 December 2018, there had been no request to activate the CMIM (2017: Nil).

Exchange Fund – Notes to the Financial Statements (continued)

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

(f) Bilateral swap agreement

The People's Bank of China and the HKMA renewed a bilateral swap agreement in November 2017 for another three years, with a size of RMB400 billion/HK\$470 billion. This currency swap agreement helps facilitate the development of offshore renminbi business in Hong Kong. The bilateral swap outstanding as at 31 December 2018 was RMB50 billion (2017: RMB56.8 billion).

(g) Investment commitments

The Group's subsidiaries with principal activities of holding investments, including properties, had outstanding investment commitment of HK\$209,159 million equivalent as at 31 December 2018 (2017: HK\$170,171 million equivalent).

(h) Lease commitments

As at 31 December 2018, the total future minimum lease payments payable under non-cancellable operating leases of premises were as follows:

	Group		Fund	
	2018	2017	2018	2017
Within one year	124	119	69	69
After one year but not later than five years	106	220	55	125
TOTAL	230	339	124	194

(i) Financial Dispute Resolution Centre Limited

The HKMA signed a Memorandum of Understanding together with the Financial Services and the Treasury Bureau and the Securities and Futures Commission on 21 December 2011 regarding the funding arrangement on the set-up and operating costs of the Financial Dispute Resolution Centre Limited (FDRCL). There was no contribution to FDRCL in 2018 (2017: Nil). The outstanding commitment of the Fund to contribute to FDRCL as at 31 December 2018 was HK\$10.5 million (2017: HK\$10.5 million).

37 CONTINGENT LIABILITIES

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

As at 31 December 2018, the Fund had a contingent liability of up to 16.1 million SDRs or HK\$175 million equivalent (2017: 16.1 million SDRs or HK\$179 million equivalent), in respect of the uncalled portion of its 4,285 shares (2017: 4,285 shares) in the Bank for International Settlements (notes 11 and 12).

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, Japanese yen and pound sterling. As at 31 December 2018, SDR 1 was valued at US\$1.39053 (2017: US\$1.42501).

Exchange Fund – Notes to the Financial Statements (continued)

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

(b) Financial guarantees

The Group has provided guarantees in respect of bank loans granted to joint ventures. The maximum liability as at 31 December 2018 was HK\$1,583 million equivalent (2017: HK\$1,287 million equivalent).

38 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.

In addition to the transactions and balances disclosed elsewhere in these financial statements, during the year, the Group, through The Hong Kong Mortgage Corporation Limited, purchased HK\$281 million (2017: HK\$293 million) of mortgage loans from the HKSAR Government.

The Exchange Fund Advisory Committee (EFAC) through its Sub-Committees advises 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.

39 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.

39.1 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 and economic affairs and of investment issues, 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 activities 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.

Exchange Fund – Notes to the Financial Statements (continued)

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

39.2 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.

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

	2018	2017
Asset type		
Bonds	72%	71%
Equities and related investments	28%	29%
	100%	100%
Currency		
US dollar and Hong Kong dollar	89%	89%
Others ¹	11%	11%
	100%	100%

¹ Other currencies included mainly euro, renminbi, pound sterling and Japanese 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 HKMA down to the Executive Director level.

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.

Exchange Fund – Notes to the Financial Statements (continued)

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

39.3 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.

39.3.1 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 country 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) Country risk

Country 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 the debtors in the country to foreign creditors. Under the existing framework, country limits are established to control the Fund's overall credit risk exposures to the countries 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 four-pronged approach is established for (i) selecting Approved Sellers carefully, (ii) adopting prudent mortgage purchasing criteria and insurance eligibility criteria, (iii) conducting effective due diligence reviews and (iv) ensuring adequate protection for higher-risk mortgages.

39.3.2 Exposure to credit risk

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

	Note	Group		Fund	
		2018	2017	2018	2017
Risk in force – mortgage insurance	39.6	23,737	21,101	–	–
Risk in force – other guarantees and insurance	39.6	9,645	6,877	–	–
Loan commitments, guarantees and other credit related commitments		237,151	235,227	264,173	263,940
TOTAL		270,533	263,205	264,173	263,940

Exchange Fund – Notes to the Financial Statements (continued)

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

39.3.3 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 balance sheet 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 balance sheet 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 and financial guarantee contracts are subject to the impairment requirements, their expected credit losses were immaterial. 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	
	2018	2017	2018	2017
Credit rating¹				
AA- to AA+	40,114	67,783	33,533	67,206
A- to A+	102,364	77,223	81,330	54,979
Lower than A- or un-rated ²	30,083	11,682	28,238	9,066
Gross carrying amount	172,561	156,688	143,101	131,251
Less: allowances for expected credit losses	(5)	–	(4)	–
Carrying amount	172,556	156,688	143,097	131,251

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 in 2018 were as follows:

	Group	Fund
At 1 January 2018 under HKAS 39	–	–
Adjustment on adoption of HKFRS 9 (note 3.1.2(a))	4	3
At 1 January 2018, as adjusted	4	3
Increase in loss allowances recognised in the income and expenditure account	1	1
At 31 December 2018	5	4

(b) Debt securities

The Group predominantly invests in liquid OECD government bonds and other quasi-government debt securities issues. As at 31 December 2018, approximately 71% (2017: 78%) of the debt securities held by the Group were rated “double-A” or above by Moody’s, Standard & Poor’s and 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			
	2018		2017	
	Measured at fair value through income and expenditure account	Measured at fair value through other comprehensive income	Designated at fair value	Available-for-sale
Credit rating¹				
AAA	493,297	30	587,220	56
AA- to AA+	1,514,814	3,069	1,579,065	2,969
A- to A+	434,648	1,993	374,930	1,956
Lower than A- or un-rated ²	397,522	10	232,847	201
TOTAL	2,840,281	5,102	2,774,062	5,182

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.

	Fund	
	2018	2017
	Measured at fair value through income and expenditure account	Designated at fair value
Credit rating¹		
AAA	493,297	587,220
AA- to AA+	1,514,814	1,579,065
A- to A+	434,648	374,930
Lower than A- or un-rated ²	382,428	220,359
TOTAL	2,825,187	2,761,574

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.

Exchange Fund – Notes to the Financial Statements (continued)

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

(ii) Debt securities measured at amortised cost

	Group	
	2018	2017
	Measured at amortised cost	Held-to- maturity
Credit rating¹		
AAA	712	859
AA- to AA+	2,827	3,147
A- to A+	8,009	6,342
Gross carrying amount	11,548	10,348
Less: allowances for expected credit losses (note 3.1.2(b))	(1)	–
Carrying amount	11,547	10,348

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

There was no movement in loss allowances for debt securities measured at amortised cost or fair value through other comprehensive income in 2018.

(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.

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

Exchange Fund – Notes to the Financial Statements (continued)

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

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.

The credit quality of loan portfolio is analysed as follows:

	Group – 2018			
	Stage 1	Stage 2	Stage 3	Total
Loan portfolio with external credit rating¹				
BB- to BB+	402	–	–	402
B+ and below	662	–	–	662
Gross carrying amount	1,064	–	–	1,064
Less: allowances for expected credit losses	(8)	–	–	(8)
	1,056	–	–	1,056
Loan portfolio with internal credit rating				
Gross carrying amount	6,436	1	6	6,443
Less: allowances for expected credit losses	–	–	(1)	(1)
	6,436	1	5	6,442
TOTAL	7,492	1	5	7,498

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

The movements in loss allowances for loan portfolio in 2018 were as follows:

	Group			
	Stage 1	Stage 2	Stage 3	Total
At 1 January 2018	–	–	–	–
Net new lending	8	–	–	8
Increase in loss allowances recognised in the income and expenditure account	–	–	1	1
At 31 December 2018	8	–	1	9

Exchange Fund – Notes to the Financial Statements (continued)

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

(i) Credit impaired loans

These are loans where the Group determines on an individual basis that it is probable that it will be unable to collect all principal and interest due according to the contractual terms of the loan agreements. As at 31 December 2018, individually impaired loans of the Group amounted to HK\$0.5 million (2017: HK\$0.4 million). Since there was no collateral held against these impaired loans (2017: Nil), loss allowances have been fully provided.

(ii) Repossessed collateral

The Group obtained assets by taking possession of collateral held as security. Repossessed assets are sold as soon as practicable, with the proceeds used to reduce the outstanding indebtedness. As at 31 December 2018, there was no repossessed asset obtained (2017: HK\$4 million).

(d) Loan commitments

The Group's loan commitments are considered to have a low credit risk. The provision for expected credit losses are measured at amounts equal to 12-month expected credit losses. The movements in provision for expected credit losses in 2018 were as follows:

	Group
At 1 January 2018	–
Increase in provision for expected credit losses from new irrevocable commitments	5
At 31 December 2018	5

39.3.4 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 governments and other quasi-government entities. The maximum credit risk exposure by industry groups is analysed below:

	Group		Fund	
	2018	2017	2018	2017
Governments and government agencies ¹	2,159,110	2,248,103	2,158,083	2,247,481
Supra-nationals	193,653	262,833	193,618	262,833
States, provinces and public-sector entities ²	205,539	207,383	234,968	236,881
Financial institutions	499,679	454,945	459,618	419,787
Others ³	537,149	315,221	633,055	394,099
TOTAL	3,595,130	3,488,485	3,679,342	3,561,081

¹ These included debt securities guaranteed by governments.

² These included debt securities guaranteed by states.

³ These included debt securities issued by the Bank for International Settlements.

Exchange Fund – Notes to the Financial Statements (continued)

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

39.4 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.

39.4.1 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.

(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.

Exchange Fund – Notes to the Financial Statements (continued)

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

39.4.2 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.

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 cap for the market value of the Long-Term Growth Portfolio is set at the sum of one-third of the accumulated surplus of the Fund and the portion of the Future Fund and placements by subsidiaries linked with the Long-Term Growth Portfolio.

Exchange Fund – Notes to the Financial Statements (continued)

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

39.4.3 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 balance sheet date and categorised by the earlier of contractual repricing dates or maturity dates.

	Group – 2018							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	126,105	–	–	–	–	–	126,105	57,416
Placements with banks and other financial institutions	148,368	22,724	1,445	–	–	–	172,537	19
Financial assets measured at fair value through income and expenditure account	552,484	376,868	756,510	757,946	226,620	145,599	2,816,027	866,884
Financial assets measured at fair value through other comprehensive income	852	3,240	497	503	–	–	5,092	1,154
Debt securities measured at amortised cost	–	1,310	1,336	4,318	4,583	–	11,547	–
Loan portfolio	6,575	380	530	11	1	1	7,498	–
Interest-bearing assets	834,384	404,522	760,318	762,778	231,204	145,600	3,138,806	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	56,346
Placements by Fiscal Reserves with interest payable at market-based rates ¹	5	–	–	–	–	–	5	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	4,030	–	–	–	–	–	4,030	–
Exchange Fund Bills and Notes issued	346,277	459,041	302,277	13,078	7,690	1,247	1,129,610	–
Bank loans	7,975	–	–	2,102	2,718	–	12,795	–
Other debt securities issued	5,631	11,495	8,082	8,469	2,739	1,512	37,928	–
Interest-bearing liabilities	363,918	470,536	310,359	23,649	13,147	2,759	1,184,368	
Net interest-bearing assets/(liabilities)	470,466	(66,014)	449,959	739,129	218,057	142,841	1,954,438	
Interest rate derivatives (net position, notional amounts)	7,427	(22,443)	5,411	(692)	8,840	1,200	(257)	
Interest rate sensitivity gap	477,893	(88,457)	455,370	738,437	226,897	144,041	1,954,181	

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 26 and 27). As at 31 December 2018, such placements amounted to HK\$1,489,983 million.

Exchange Fund – Notes to the Financial Statements (continued)

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

	Group – 2017							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	147,940	–	–	–	–	–	147,940	68,432
Placements with banks and other financial institutions	139,554	13,023	4,093	–	–	–	156,670	18
Financial assets designated at fair value	500,523	639,230	629,532	642,385	195,178	139,797	2,746,645	742,948
Available-for-sale securities	638	3,045	715	583	–	–	4,981	175,434
Held-to-maturity securities	117	1,009	464	4,802	3,956	–	10,348	–
Loan portfolio	7,778	26	11	15	–	–	7,830	–
Interest-bearing assets	796,550	656,333	634,815	647,785	199,134	139,797	3,074,414	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	59,337
Placements by Fiscal Reserves with interest payable at market-based rates ¹	2	–	–	–	–	–	2	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	916	–	–	–	–	–	916	–
Exchange Fund Bills and Notes issued	336,628	451,533	229,192	15,914	9,473	2,508	1,045,248	–
Bank loans	8,417	–	–	1,954	2,879	–	13,250	–
Other debt securities issued	9,410	9,502	4,751	7,564	2,775	1,515	35,517	–
Interest-bearing liabilities	355,373	461,035	233,943	25,432	15,127	4,023	1,094,933	
Net interest-bearing assets	441,177	195,298	400,872	622,353	184,007	135,774	1,979,481	
Interest rate derivatives (net position, notional amounts)	8,101	(19,874)	1,160	(2,337)	10,576	2,400	26	
Interest rate sensitivity gap	449,278	175,424	402,032	620,016	194,583	138,174	1,979,507	

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 26 and 27). As at 31 December 2017, such placements amounted to HK\$1,377,986 million.

Exchange Fund – Notes to the Financial Statements (continued)

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

	Fund – 2018							
	Repricing period of interest-bearing financial instruments							Non-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	125,464	–	–	–	–	–	125,464	57,109
Placements with banks and other financial institutions	139,182	3,915	–	–	–	–	143,097	–
Financial assets measured at fair value through income and expenditure account	552,484	376,868	756,510	757,946	226,620	145,599	2,816,027	636,942
Interest-bearing assets	817,130	380,783	756,510	757,946	226,620	145,599	3,084,588	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	56,346
Placements by Fiscal Reserves with interest payable at market-based rates¹	5	–	–	–	–	–	5	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates¹	4,030	–	–	–	–	–	4,030	–
Exchange Fund Bills and Notes issued	346,277	459,041	302,277	13,078	7,690	1,247	1,129,610	–
Interest-bearing liabilities	350,312	459,041	302,277	13,078	7,690	1,247	1,133,645	
Net interest-bearing assets/(liabilities)	466,818	(78,258)	454,233	744,868	218,930	144,352	1,950,943	
Interest rate derivatives (net position, notional amounts)	–	(16,409)	1,600	6,009	7,600	1,200	–	
Interest rate sensitivity gap	466,818	(94,667)	455,833	750,877	226,530	145,552	1,950,943	

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 26, 27 and 28). As at 31 December 2018, such placements amounted to HK\$1,497,693 million.

Exchange Fund – Notes to the Financial Statements (continued)

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

	Fund – 2017							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	147,398	–	–	–	–	–	147,398	68,251
Placements with banks and other financial institutions	128,595	2,656	–	–	–	–	131,251	–
Financial assets designated at fair value	500,523	639,230	629,532	642,385	195,178	139,797	2,746,645	726,641
Interest-bearing assets	776,516	641,886	629,532	642,385	195,178	139,797	3,025,294	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	59,337
Placements by Fiscal Reserves with interest payable at market-based rates ¹	2	–	–	–	–	–	2	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates ¹	916	–	–	–	–	–	916	–
Exchange Fund Bills and Notes issued	337,128	451,533	229,192	15,914	9,473	2,508	1,045,748	–
Interest-bearing liabilities	338,046	451,533	229,192	15,914	9,473	2,508	1,046,666	
Net interest-bearing assets	438,470	190,353	400,340	626,471	185,705	137,289	1,978,628	
Interest rate derivatives (net position, notional amounts)	–	(17,718)	800	5,318	9,200	2,400	–	
Interest rate sensitivity gap	438,470	172,635	401,140	631,789	194,905	139,689	1,978,628	

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 26 and 27). As at 31 December 2017, such placements amounted to HK\$1,377,986 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			
	2018		2017	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	396.4	2,928.9	333.2	2,809.4
US dollar	3,404.6	548.5	3,408.4	523.6
	3,801.0	3,477.4	3,741.6	3,333.0
Others ¹	441.0	21.5	440.4	25.5
TOTAL	4,242.0	3,498.9	4,182.0	3,358.5

	Fund			
	2018		2017	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	361.5	2,898.6	297.7	2,775.9
US dollar	3,298.8	542.3	3,319.9	521.3
	3,660.3	3,440.9	3,617.6	3,297.2
Others ¹	394.6	3.7	397.7	4.9
TOTAL	4,054.9	3,444.6	4,015.3	3,302.1

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

(c) Equity price risk

As at 31 December 2018 and 2017, the majority of equity investments were reported as “financial assets measured at fair value through income and expenditure account” (2017: financial assets designated at fair value) as shown in note 10.

Exchange Fund – Notes to the Financial Statements (continued)

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

39.4.4 Sensitivity analysis

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

	Fund	
	2018	2017
Value-at-Risk		
At 31 December ¹	42,108	22,943
During the year		
Average	38,401	22,721
Maximum	45,188	27,051
Minimum	23,628	19,520

¹ The amount represented 1.1% of the Fund's investments which were subject to VaR measurement as at 31 December 2018 (2017: 0.6%).

39.5 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.

39.5.1 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.)

39.5.2 Exposure to liquidity risk

The remaining contractual maturities at the balance sheet 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 – 2018						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	485,666	–	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	12,639	–	–	–	–	–	12,639
Balance of the banking system	78,584	–	–	–	–	–	78,584
Placements by banks and other financial institutions	–	–	56,346	–	–	–	56,346
Placements by Fiscal Reserves	948,954	–	–	–	224,530	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	182,842	–	18,500	98,192	21,000	–	320,534
Exchange Fund Bills and Notes issued	346,500	460,468	304,674	14,233	8,093	1,221	1,135,189
Bank loans	64	21	236	10,808	2,974	–	14,103
Other debt securities issued	2,179	6,288	11,794	14,684	3,171	2,124	40,240
Other liabilities	112,429	23,902	49	268	49,214	–	185,862
Loan commitments, guarantees and other credit related commitments	235,786	44	1,164	157	–	–	237,151
TOTAL	2,405,643	490,723	392,763	138,342	308,982	3,345	3,739,798
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	374	(20)	3	79	69	10	515
– on gross basis							
Total outflows	117,858	46,141	63,752	1,512	1,503	–	230,766
Total inflows	(116,196)	(45,438)	(63,123)	(1,571)	(1,329)	–	(227,657)
TOTAL	2,036	683	632	20	243	10	3,624

Exchange Fund – Notes to the Financial Statements (continued)

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

	Group – 2017						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	456,726	–	–	–	–	–	456,726
Government-issued currency notes and coins in circulation	12,213	–	–	–	–	–	12,213
Balance of the banking system	179,790	–	–	–	–	–	179,790
Placements by banks and other financial institutions	–	–	59,337	–	–	–	59,337
Placements by Fiscal Reserves	849,264	–	–	–	224,530	–	1,073,794
Placements by HKSAR Government funds and statutory bodies	173,418	6,000	11,000	103,312	11,380	–	305,110
Exchange Fund Bills and Notes issued	336,738	452,395	230,520	17,190	9,880	2,469	1,049,192
Bank loans	67	22	272	11,371	3,268	–	15,000
Other debt securities issued	4,927	2,177	12,031	13,691	3,163	2,168	38,157
Other liabilities	126,975	10,295	305	320	32,800	–	170,695
Loan commitments, guarantees and other credit related commitments	235,227	–	–	–	–	–	235,227
TOTAL	2,375,345	470,889	313,465	145,884	285,021	4,637	3,595,241
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	100	457	(45)	86	69	17	684
– on gross basis							
Total outflows	100,388	132,523	72,895	994	1,540	–	308,340
Total inflows	(98,506)	(130,773)	(72,342)	(1,103)	(1,532)	–	(304,256)
TOTAL	1,982	2,207	508	(23)	77	17	4,768

Exchange Fund – Notes to the Financial Statements (continued)

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

	Fund – 2018						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	485,666	–	–	–	–	–	485,666
Government-issued currency notes and coins in circulation	12,639	–	–	–	–	–	12,639
Balance of the banking system	78,584	–	–	–	–	–	78,584
Placements by banks and other financial institutions	–	–	56,346	–	–	–	56,346
Placements by Fiscal Reserves	948,954	–	–	–	224,530	–	1,173,484
Placements by HKSAR Government funds and statutory bodies	182,842	–	18,500	98,192	21,000	–	320,534
Placements by subsidiaries	–	–	160	–	7,550	–	7,710
Exchange Fund Bills and Notes issued	346,500	460,468	304,674	14,233	8,093	1,221	1,135,189
Other liabilities	102,884	23,885	42	15	49,186	–	176,012
Loan commitments and other credit related commitments	264,173	–	–	–	–	–	264,173
TOTAL	2,422,242	484,353	379,722	112,440	310,359	1,221	3,710,337
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	368	(2)	1	94	49	–	510
– on gross basis							
Total outflows	117,073	44,332	57,223	–	–	–	218,628
Total inflows	(115,414)	(43,636)	(56,549)	–	–	–	(215,599)
TOTAL	2,027	694	675	94	49	–	3,539

Exchange Fund – Notes to the Financial Statements (continued)

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

	Fund – 2017						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	456,726	–	–	–	–	–	456,726
Government-issued currency notes and coins in circulation	12,213	–	–	–	–	–	12,213
Balance of the banking system	179,790	–	–	–	–	–	179,790
Placements by banks and other financial institutions	–	–	59,337	–	–	–	59,337
Placements by Fiscal Reserves	849,264	–	–	–	224,530	–	1,073,794
Placements by HKSAR Government funds and statutory bodies	173,418	6,000	11,000	103,312	11,380	–	305,110
Exchange Fund Bills and Notes issued	337,238	452,395	230,520	17,190	9,880	2,469	1,049,692
Other liabilities	120,489	10,286	305	–	32,800	–	163,880
Loan commitments and other credit related commitments	263,940	–	–	–	–	–	263,940
TOTAL	2,393,078	468,681	301,162	120,502	278,590	2,469	3,564,482
Derivative cash outflows/(inflows)							
Derivative financial instruments settled:							
– on net basis	101	446	(13)	73	54	1	662
– on gross basis							
Total outflows	100,215	131,218	69,246	–	–	–	300,679
Total inflows	(98,333)	(129,449)	(68,552)	–	–	–	(296,334)
TOTAL	1,983	2,215	681	73	54	1	5,007

Exchange Fund – Notes to the Financial Statements (continued)

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

39.6 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 (i) mortgage insurance cover to authorized institutions in respect of mortgage loans originated by such authorized institutions and secured on residential properties in Hong Kong; (ii) insurance cover to authorized institutions in respect of reverse mortgage loans originated by such authorized institutions to elderly people; (iii) insurance cover to authorized institutions in respect of lump-sum loans to owners of properties of subsidised housing schemes for land premium settlement; and (iv) financial guarantee cover to authorized institutions in respect of loans originated by such authorized institutions to SMEs and non-listed enterprises in Hong Kong. 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 authorized institutions for first credit losses 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 2018, the total risk-in-force was HK\$23.7 billion (2017: HK\$21.1 billion), of which HK\$19.7 billion (2017: HK\$17.6 billion) was retained by the Group after reinsurance. The Group also provides financial guarantee cover to authorized institutions up to 50% to 70% of the banking facilities granted to SMEs and non-listed enterprises in Hong Kong, and insurance cover to authorized institutions in respect of reverse mortgage loans originated by such authorized institutions and secured on residential properties, and in respect of lump-sum loans advanced by such authorized institutions to owners of properties of subsidised housing schemes primarily for land premium settlement and secured on these properties. As at 31 December 2018, the total risk-in-force was HK\$9.6 billion (2017: HK\$6.9 billion).

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. The reinsurers are selected according to prudent criteria and their credit ratings are reviewed regularly. For financial guarantee cover provided to authorized institutions, 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.

39.7 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 three 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 Internal Audit 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. Internal Audit 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.

40 FAIR VALUE MEASUREMENT OF FINANCIAL INSTRUMENTS

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

40.1.1 Fair value hierarchy

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

	Group – 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	260,241	780,791	–	1,041,032
Certificates of deposit	–	179,563	–	179,563
Other debt securities	1,516,298	88,294	15,094	1,619,686
Equity securities	446,069	137,168	48,195	631,432
Investment funds	–	–	211,198	211,198
	2,222,608	1,185,816	274,487	3,682,911
Financial assets measured at fair value through other comprehensive income				
Debt securities	5,102	–	–	5,102
Equity securities	–	–	1,144	1,144
	5,102	–	1,144	6,246
Derivative financial instruments	350	4,082	–	4,432
	2,228,060	1,189,898	275,631	3,693,589
Liabilities				
Exchange Fund Bills and Notes issued	–	1,129,610	–	1,129,610
Derivative financial instruments	368	3,707	–	4,075
Other debt securities issued, measured at fair value	–	144	–	144
	368	1,133,461	–	1,133,829

Exchange Fund – Notes to the Financial Statements (continued)

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

	Group – 2017			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets designated at fair value				
Treasury bills and commercial paper	458,493	723,475	–	1,181,968
Certificates of deposit	7,174	164,319	–	171,493
Other debt securities	1,322,331	85,782	12,488	1,420,601
Equity securities	547,143	125,388	43,000	715,531
	2,335,141	1,098,964	55,488	3,489,593
Available-for-sale securities				
Debt securities	5,182	–	–	5,182
Equity securities	1,456	–	–	1,456
Investment funds	–	1,891	171,393	173,284
	6,638	1,891	171,393	179,922
Derivative financial instruments	348	2,055	–	2,403
	2,342,127	1,102,910	226,881	3,671,918
Liabilities				
Exchange Fund Bills and Notes issued	–	1,045,248	–	1,045,248
Derivative financial instruments	100	5,462	–	5,562
Other debt securities issued, measured at fair value	–	142	–	142
	100	1,050,852	–	1,050,952

Exchange Fund – Notes to the Financial Statements (continued)

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

	Fund – 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets measured at fair value through income and expenditure account				
Treasury bills and commercial paper	260,241	780,791	–	1,041,032
Certificates of deposit	–	179,563	–	179,563
Other debt securities	1,516,298	88,294	–	1,604,592
Equity securities	445,535	137,168	45,079	627,782
	2,222,074	1,185,816	45,079	3,452,969
Financial assets measured at fair value through other comprehensive income				
Equity securities	–	–	1,144	1,144
Derivative financial instruments	350	3,920	–	4,270
	2,222,424	1,189,736	46,223	3,458,383
Liabilities				
Exchange Fund Bills and Notes issued	–	1,129,610	–	1,129,610
Derivative financial instruments	368	3,387	–	3,755
	368	1,132,997	–	1,133,365

	Fund – 2017			
	Level 1	Level 2	Level 3	Total
Assets				
Financial assets designated at fair value				
Treasury bills and commercial paper	458,493	723,475	–	1,181,968
Certificates of deposit	7,174	164,319	–	171,493
Other debt securities	1,322,331	85,782	–	1,408,113
Equity securities	547,143	125,388	39,181	711,712
	2,335,141	1,098,964	39,181	3,473,286
Derivative financial instruments	348	1,721	–	2,069
	2,335,489	1,100,685	39,181	3,475,355
Liabilities				
Exchange Fund Bills and Notes issued	–	1,045,748	–	1,045,748
Derivative financial instruments	100	5,193	–	5,293
	100	1,050,941	–	1,051,041

The Group's policy is to recognise transfers between levels of fair value hierarchy as at the end of the reporting period 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.

Exchange Fund – Notes to the Financial Statements (continued)

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

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

	2018			
	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 2018	226,881	1,148	39,181	1,148
Net gains/(losses) recognised in the income and expenditure account	3,003	–	(245)	–
Net losses recognised in other comprehensive income	–	(4)	–	(4)
Purchases	77,325	–	21,949	–
Sales	(30,485)	–	(13,614)	–
Exchange differences	(45)	–	–	–
Transfers into Level 3	98	–	98	–
Transfers out of Level 3	(2,290)	–	(2,290)	–
At 31 December 2018	274,487	1,144	45,079	1,144
Net gains/(losses) recognised in the income and expenditure account relating to those assets held at the balance sheet date	3,121	–	(365)	–

	2017		
	Group		Fund
	Designated at fair value	Available-for-sale	Designated at fair value
At 1 January 2017	51,368	124,518	36,766
Net gains recognised in the income and expenditure account	5,715	–	3,412
Net gains recognised in other comprehensive income	–	14,504	–
Purchases	11,867	48,503	7,613
Sales	(15,631)	(16,132)	(10,779)
Transfers into Level 3	3,262	–	3,262
Transfers out of Level 3	(1,093)	–	(1,093)
At 31 December 2017	55,488	171,393	39,181
Net gains recognised in the income and expenditure account relating to those assets held at the balance sheet date	5,797	–	2,606

During the year, 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.)

40.1.2 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 balance sheet 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, using inputs based on market conditions existing at the balance sheet 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 swaps and foreign exchange contracts; and
- (c) commercial paper and debt securities are priced using discounted cash flow techniques with observable yield curves.

For investments in unlisted investment funds, certain unlisted equity securities and certain unlisted debt securities which are classified under Level 3, their fair values are estimated by making reference to valuation reports provided by 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	
	2018	2017
Earning multiples of similar companies	5.3 – 12.2	7.0 – 11.4
Liquidity discount	20%	20%

If the prices 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\$27,449 million (2017: increase/decrease in the Group's surplus for the year of HK\$5,549 million) and in other comprehensive loss of HK\$114 million (2017: increase/decrease in other comprehensive income of HK\$17,139 million).

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.

Exchange Fund – Notes to the Financial Statements (continued)

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

40.2 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 – 2018					
		Carrying value	Fair value		
	Note		Level 1	Level 2	Total
Financial assets					
Debt securities measured at amortised cost	14	11,547	11,530	–	11,530
Financial liabilities					
Other debt securities issued	31	37,784	–	37,224	37,224

Group – 2017					
		Carrying value	Fair value		
	Note		Level 1	Level 2	Total
Financial assets					
Held-to-maturity securities	15	10,348	10,264	298	10,562
Financial liabilities					
Other debt securities issued	31	35,375	–	35,507	35,507

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 balance sheet date. Specific valuation techniques and key inputs used to value these debt securities include quoted market prices for securities with similar credit, maturity and yield characteristics for debt securities measured at amortised cost (2017: held-to-maturity securities), discounted cash flow model based on a current yield curve appropriate for the remaining term to maturity for other debt securities issued.

All other financial instruments of the Group and the Fund are stated at fair value or carried at amounts not materially different from their fair values as at 31 December 2018 and 2017.

41 POSSIBLE IMPACT OF AMENDMENTS, NEW STANDARDS AND INTERPRETATIONS ISSUED BUT NOT YET EFFECTIVE FOR THE YEAR ENDED 31 DECEMBER 2018

Up to the date of issue of these financial statements, the HKICPA has issued a number of amendments and new standards which are not yet effective for the year ended 31 December 2018 and which have not been adopted in these financial statements. The new standards include:

	Effective for accounting periods beginning on or after
HKFRS 16 “Leases”	1 January 2019
HKFRS 17 “Insurance Contracts”	1 January 2021

Exchange Fund – Notes to the Financial Statements (continued)

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

So far, the Group expects that the adoption of HKFRS 16 is unlikely to have any significant effect on its financial statements and in respect of HKFRS 17, the Group is in the process of assessing the possible impact on its financial statements in the period of initial adoption.

HKFRS 16 “Leases”

HKFRS 16 sets out the principles for the recognition, measurement, presentation and disclosure of leases. It will supersede HKAS 17 related to leases. It introduces a single lessee accounting model and requires a lessee to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. Under HKFRS 16, a lessee is required to recognise a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. Accordingly, a lessee should recognise depreciation of the right-of-use asset and interest on the lease liability. The right-of-use asset and the lease liability are initially measured on a present value basis. The measurement includes non-cancellable lease payments and payments to be made in optional periods if the lessee is reasonably certain to exercise an option to extend the lease. In respect of the lessor accounting, HKFRS 16 substantially carries forward the lessor accounting requirements in HKAS 17.

HKFRS 16 will primarily affect the Group’s accounting as a lessee of leases for land and premises. The Group elects to apply the modified retrospective approach where the comparative figures are not restated, with the effect of initial adoption recognised as an adjustment to the opening balance of accumulated surplus. On 1 January 2019, the Group expects to recognise right-of-use assets of HK\$804 million and lease liabilities of HK\$715 million and increase its accumulated surplus by HK\$89 million. Certain right-of-use assets are required to be measured under fair value model as they meet the definition of investment property in HKAS 40. In view of the amounts involved, the Group expects that the adoption of this new standard is unlikely to have a significant effect on its financial statements. The new standard is mandatory for financial years beginning on or after 1 January 2019. At this stage, the Group does not intend to adopt the standard before its effective date.

HKFRS 17 “Insurance Contracts”

HKFRS 17 establishes a comprehensive global insurance standard which provides guidance on the recognition, measurement, presentation and disclosures of insurance contracts. The standard requires entities to measure insurance contract liabilities at their current fulfilment values. The Group is yet to assess the full impact of the standard on its financial position and results of operations. The new standard is effective for annual periods beginning on or after 1 January 2021 and will be applied retrospectively with restatement of comparatives unless impracticable. At this stage, the Group does not intend to adopt the standard before its effective date.

42 APPROVAL OF FINANCIAL STATEMENTS

The financial statements were approved by the Financial Secretary on the advice of the Exchange Fund Advisory Committee on 4 April 2019.